ATCO NEWSLETTER

VOLUME 13 NUMBER 4 **OCTOBER 1996**

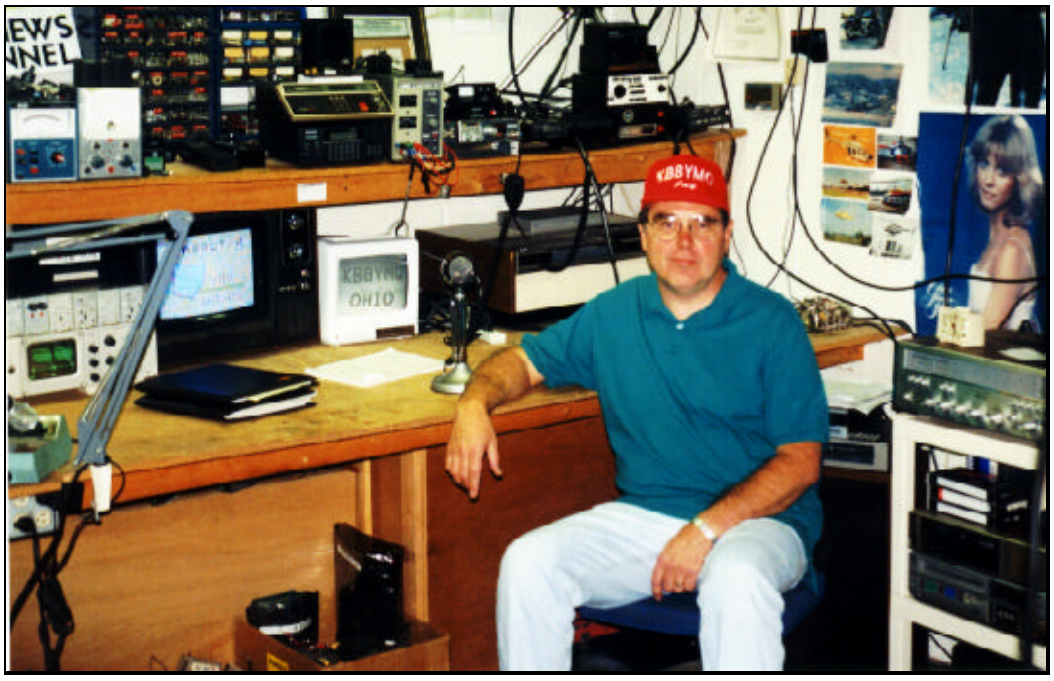
The ATCO newsletter is the official publication of a group of amateur television operators known as AMATEUR TELEVISION IN CENTRAL OHIO Group Inc." and is published quarterly (January, April, July, and October)

ATCO WA8RUT REPEATER UPDATE

Well, we finally got the 1250 MHz transmitter back into operation. For those of you that didn't know that it was down, you ***really*** must check into the net on Tuesday's more often! Check it out! It looks great! More inside.

ATCO HAM IN THE SPOTLIGHT

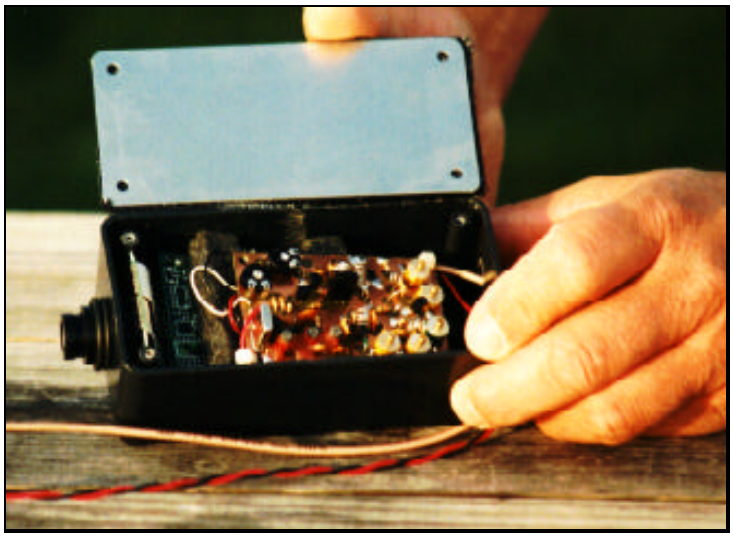
This time we took a trip to the west (slightly) to visit Jay Caldwell KB8YMQ near Plain City. Jay has at least two very fascinating hobbies - RC planes and Ham Radio and has found a rather unique way of combining them. Here we show him relaxed with his "indoor" hobby but if you check out the pages contained herein, you'll catch a glimpse of his "outdoor" hobby. Jay hasn't been involved in Ham Radio as long as his *other* hobby so we still have time to mold him to our way of thinking, guys!



ATV IN THE AIR

On my visit to Jay's (KB8YMQ) the other day, he described to me his "other hobby". **WOW!** What a neat idea. He combined his ATV talents with his RC airplane talents to produce an RC model airplane with an ATV camera on board. And this baby has the capacity to carry a good sized camera. His friend Tom owns the plane but Jay provides the camera expertise. The plane has a 6 foot wingspan with four 4 hp Wankel engines on it. When you hear this plane fly over, it sounds real. No vibration and sput, sput of the smaller types but just a smooth buzz as it flies by. To make things even more challenging, Tom has installed running and landing lights with strobes so he can fly at night. Impressive.

Below are a few pictures of the plane and at the right is the camera and transmitter box that goes into it. When it is all properly installed, Jay said he'd like to see if they can get the plane high enough to get the signal into the ATCO repeater.



OHIO AREA ATV REPEATER LISTING

The following list is compiled from actual repeater sightings in the Columbus, Ohio area. We need to keep an up-to-date and accurate listing so the newer operators know what to look for when the band is open. Our repeater is obviously the best so I'll list it first.

LOCATION	CALL SIGN	INPUT FREQ	OUTPUT FREQ	BEAM HEADING	NOTES
Columbus, Ohio	WA8RUT	439.25	427.25	~	A signal on any listed input causes
		910.25	1250		an output on both listed frequencies
		1280	~		
Xenia, Ohio	KB8GRJ	443.25	421.25	240	*10 on 144.36 = tone up for 1 minute
Dayton, Ohio	W8BI	439.25	426.25	250	*10=ID, *71= bul board, on 147.45.
		1245	1287		
		1249.5	1291.5		
Lima, Ohio	WB8ULC	439.25	421.25	315	
Ashland, Ky.	WA4GSS	439.25	421.25	180	
Elizabethtown, Ky.	W4BEJ	439.25	421.25	210	
Bowling Green, Ky.	W4HTB	439.25	426.25	200	
			1280		
Wheeling, W.Va	WB8QHO	439.25	426.25	080	
Acme, Pa	W3PVH	439.25	421.25		
Pittsburgh, Pa	W3KWH	439.25	426.25	090	

ACTIVITIES ... from my workbench

This has been a weird summer, guys! The climate has been rather cool but wet in the first half and. Then just as soon as it stopped raining, and the ground dried out came the hot dry spell of August. My grass and plants got fooled by all of this because the fruit trees didn't.. keeping me busy doing yard work when I wasn't working on our new kitchen. Luckily I finished the kitchen remodeling project with enough time to spare to do some repeater enhancements. It's about time I got to the good stuff!

It's a well known fact that the 1258 MHz repeater output needed some help. That seemed like a good place to start in light of the fact that Ken pushed us into it by ordering a 75 watt amplifier to replace the 15 watt unit that existed up to this point. Besides , the 1200 MHz band seems to be our future, guys, considering all the intermod and adjacent channel interference that now exists on 430 MHz! I hate to admit defeat and run, but as time goes by t bands keep getting more and more crowded, so what's one to do? Comments welcome. Let me know.

I worked on the mechanical part of the new amplifier assembly as much as I could before finally pulling the existing amplifier out of service. But it finally came to the point that I needed some existing amplifier parts to go into the new amplifier. It was going to be easy I figured. Simply retrieve the amplifier, swap some parts, test it and have the new amplifier back up on line the next weekend. Yea, right! A number of things have taken place to stretch the planned week into about a month and a half. First I decided NOT to cannibalize the existing design for it would be handy intact in case the new design failed sometime in the future. I did, however, have to use the oscillator assembly from the old unit.(I'll build a new one sometime in the near future). Most other items went together smoothly until it came time to power the unit up for a "shakedown" test on the bench. I found that the amplifier only put out 40-50 watts! Let's see, the spec sheet says 70 watts with 3 watts drive. The drive was indeed about 3 watts. A check with Ken's 5 watt transmitter as a drive source again yielded about 45 watts. In addition, I found that as I added a 2.5 inch section of coax between the wattmeter (Bird model 43) and the transmitter, it showed 50 watts instead of 40. This condition points toward a poorly matched load but again it's a Bird 25 watt load good up to 2 Ghz. I finally decided that there was a problem with the amplifier module so I called Down East Microwave to discuss the situation. They agreed that probably there was an amplifier problem which possibly involved a defective brick module (there are 4 bricks in parallel in this amp). I sent the unit back for them to look at. About a week later I got a call from them to say that there was nothing wrong with the unit. They found that it put out 72 watts with 3 watts drive so back it comes to me. Ultimately, I found that the PL259 connectors and subsequent type N adapters on the Bird wattmeter were causing reflections large enough to cause a gross reading error. Message: **DON'T USE PL259 FITTINGS AT 1200 MHz AND ABOVE!!!!!** I knew this, but didn't in my wildest imagination, think that the problem here would be ***that*** noticeable. Well, live and learn.

My next problem was a poorly matched power sampling line section. I like to use a surplus "Micromatch" type line samplers but this particular one wasn't drilled properly and produced a mismatch large enough to dissipate about 20 watts in the coupler. Yes, it DID get hot! "Mister lathe" to the rescue to machine a new section. It works great now. I was even able to calibrate it properly. We're making progress now but it's taking too much time. Oh well, I'm learning things...and starting to actually have fun while I'm at it for a change.

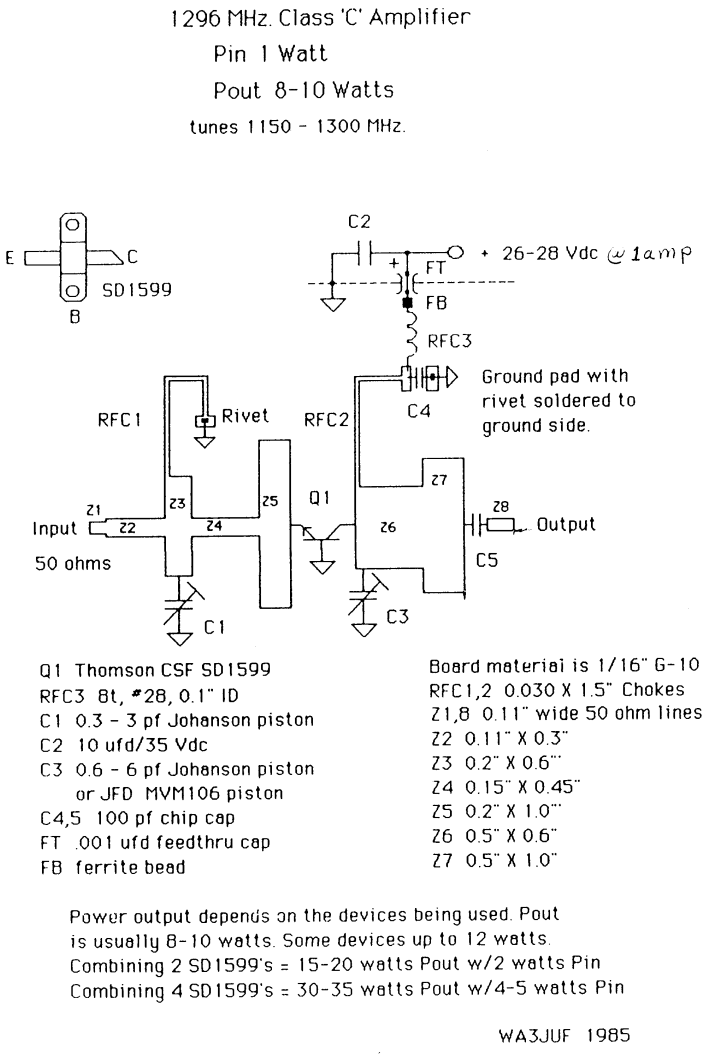
Next I checked the interdigital filter that goes on the output. This time things look good! A total of 15 watts are being lost as the signal passes through. Initially this seemed high but when I put my math skills to work it showed that the filter loss was only 1.14 dB. Not bad.

By this time everything seems to function OK so it's video and audio signal time. Audio looks good but the video modulation needs more gain. I built a video amp to help the Wyman Research modulator a little. I found that this board actually needs close to 2 volts of video to properly modulate it. (Standard 1 volt p-p video is NOT enough). After that was fixed, I found John Unverzagt N8MCQ was kind enough to fire up his spectrum analyzer to look at the output. Gosh, it looks good. Nice and clean. For the record, we set the video carrier to -20 dB and audio carrier to -30 dB below the RF carrier. I can't find commercial specs on FM modulation but it seems about right. Only one flaw showed up. I found a 5 MHz carrier in there too at about the -65 dB level. This was found to be the 4.88 MHz oscillator that drives the phase lock loop . Not enough shielding and isolation but didn't warrant ripping it apart to fix as it could only be seen on the scope and not in the actual viewed signal. I guess it's ready to install.

Dale WB8CJW and myself installed it on October 6 without incident. It seems to work great but the audio level is now too high which we'll adjust next time. We need to watch the signal strength for the next time to the repeater when we'll change out the antenna. We need to know if it got better, worse or stayed the same. More details next time as to its operation. In the meantime, let's get more people to look at the 1250 MHz portion of our signal. Yes it's 1250 MHz instead of 1258 MHz as it used to be. We did this to get as much separation from the 1280 MHz input as possible.

Well, that's all for now. More next issue.
Art...WA8RMC

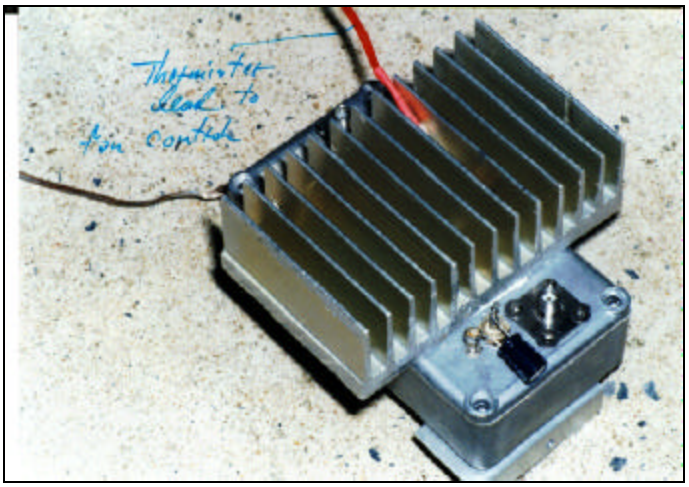
BUILD A 1200 MHz TRANSISTOR AMPLIFIER



Here's a simple 1200 MHz amplifier circuit that was sent to me from Ed Walker in Mountain City, Tennessee. It looks like a good circuit to try in lieu of a conventional "brick amplifier".

Ed says...."I have built all of the amps thatWA3JUF has designed and they all tune up smoothly with good input return loss. RF gain Co. has this transistor for about $25. The secret of this device is the 28 volts. You could not get this gain with 12 volts."

I noticed that the amplifier is a class "C" device which is OK for our ATV signals as they are FM modulated signals but don't try to use this for AM ATV. The picture below shows the outside view of the amplifier in an aluminum die cast box with a large heat sink mounted to the top. The leads at the top are thermister leads for temperature control and the lead at the top left is the 28 VDC power.



NEW MEMBER SECTION

Let's welcome the following new member to our group**!** If any of you know someone who might be interested, let one of us know so we can flood them with information.

W8RIK Joe Hussey , Columbus Ohio

HAMFEST CALENDAR

This section is reserved for upcoming hamfests for as far in advance as we know about them. The listings will be limited to Ohio and vicinity easily accessible in one day. I trust that anyone who is aware of an event that is not listed here or incorrectly listed will notify me so it can be corrected. The list will be amended as further information becomes available.

LOCATION	S	SPONSOR	DATE	TALK IN FREQ.	COST	ARRL EVENT?	
Marion, Ohio		Marion ARC		October 27	147.30/90	$5 door	yes
Fort Wayne, Ind		Allen County ARC		November 16,17	146.28/88	$5 door + $2 park	yes
Broadway, Ohio		Union County ARC	J	anuary 19, 1997	--	$2 door	yes

ATCO

1996 FALL EVENT

1:00 PM - SUNDAY

OCTOBER 20, 1996

ABB PROCESS AUTOMATION
(ACCURAY)
*** SHELTERHOUSE ***
650 ACKERMAN ROAD
FOR MORE DETAILS, CONTACT
RICK - WA3DTO 877-0652

LUNCH PROVIDED - DOOR PRIZES

BRING A FRIEND AND SEE OLD BUDDYS

SHOW AND TELL

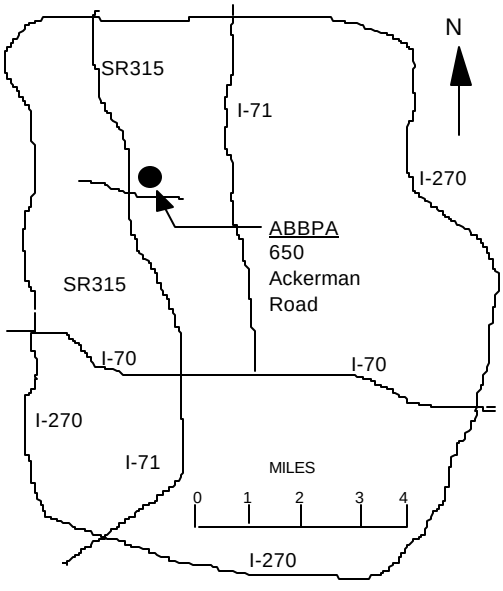
DIRECTIONS TO THE ATCO EVENT

From I-70 either EAST or WEST Bound:
Take Route 315 (runs north and south and is just west of Columbus) - head NORTH.
Get off at Ackerman Road Exit and turn RIGHT on to Ackerman Road.
Turn LEFT just beyond the first traffic light at the ATCO sign.

From I-71 traveling NORTH bound toward Columbus:
While traveling north on I-71, watch for the split to Route 315 just south of Columbus. Take 315 and head NORTH to the Ackerman Road Exit. Get off at this exit and turn RIGHT to Ackerman Road. Turn LEFT just beyond the first traffic light at the ATCO sign.

From I-71 traveling SOUTH bound toward Columbus:

(DIRECTIONS IF YOU'RE "NORTH" OF I-270).
Take I-71 SOUTH to I-270 Bypass Loop & head WEST on I-270.
At the Route 315 exit, turn LEFT to head SOUTH on Route 315.
Exit on Ackerman Road



900/1200 Mhz ANTENNAS....TRY THESE WITH THE REPEATER!

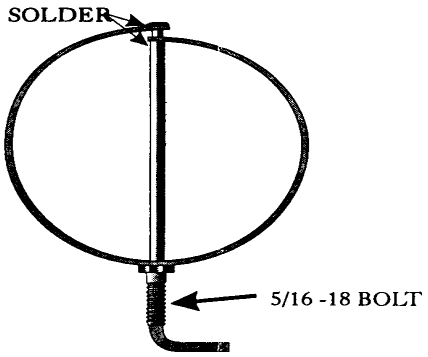
Ted Post N8KQN has come up with these two similar loop yagi designs that are easy and straight forward to build, do not take a lot of time and won't overload your tower. If used for the ATCO repeater, they can be side mounted on the tower with a fixed position toward downtown Columbus so they won't have to be integrated into your obviously overly complex arrangement of existing antenna/rotor combinations. Ed is so excited about these designs that the word is out that he would even volunteer to come out to your place and put it up for you! Contact Ed soon because I understand that his free time is extremely limited.

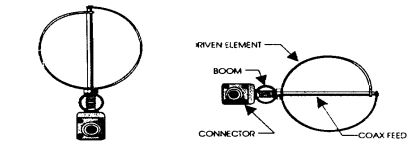
These antennas are nothing revolutionary as far as gain is concerned but fair quite well considering the number of elements involved. Besides, a dish or quad arrangement of 50 element yagis is NOT needed to work ATV through our repeater. Simple easy to find materials at most hardware stores is used. (If anyone building these has trouble finding materials or needs further details, check into the Tuesday night net on 147.45!).

REF and DIR elements are 3/8 wide x 1/32 thick aluminum. Drill a 1/8 hole 1/4 from each end. Mount to mast with 4-40 stainless hardware. The DE element is the same as for REF/DIR except it's brass with an additional hole in the center for the 5/16 bolt and coax to pass through. Use a 5/16-18 brass bolt with a 1/4 dia hole through its middle to mount this element . The coax runs through the hole.

* NOTE: the 1250 MHz antenna element spacing 5" dimension for REF1 leaves enough room for a clamp assuming an end mount to the tower (mast) will be used here.

	Distance from end of boom		Element length	
Element	**910 MHz**	**1250 MHz**	**910 MHz**	**1250 MHz**
REF1	0.50	5.00*	14.17	10.62
REF2	4.45	8.12	14.17	10.62
DE	6.32	9.12	13.55	10.12
DIR01	7.92	10.19	12.16	9.38
DIR02	9.12	11.06	12.16	9.25
DIR03	11.68	12.78	12.16	9.25
DIR04	14.23	14.62	12.16	9.25
DIR05	16.03	15.87	12.16	9.19
DIR06	19.35	18.12	12.16	9.19
DIR07	24.44	21.25	12.16	9.19
DIR08	29.58	25.25	12.16	8.87
DIR09	34.69	27.87	12.16	8.87
DIR10	39.81	32.38	12.16	8.87
DIR11	44.92	36.00	12.16	8.87
DIR12	50.04	39.50	11.81	8.87
DIR13	55.15	43.00	11.81	8.87
DIR14	60.27	46.50	11.81	8.87
DIR15	65.38	49.50	11.81	8.87
DIR16	70.50	53.00	11.81	8.87
DIR17	75.61	56.50	11.81	8.87
DIR18	80.73	60.00	11.81	8.87
DIR19	85.84	63.50	11.81	8.87
DIR20	90.98	67.00	11.81	8.87





HORIZONTAL POLARIZATION

VERTICAL POLARIZATION

WATTS IT TO YOU???

OK guys! I feel that I've had enough trouble too often trying to convert those nasty mathematical conversions of watts , volts, dBmv and dBm that when I found this table I got ecstatic! I was so thrilled to find this that I wanted to share it. If you find it of absolutely no value whatsoever, please humor me by telling me how great it is and that you've saved many hours tearing your hair out unscrambling those nasty antenna gain claims. Thanks...I feel better now.

Voltage-to-Power Conversion Table (Based on a 50-ohm system)

RMS	Peak-to-Peak	dBmV	Watts	dBm
0.01 ❍V	0.0283 ❍V	-100	2 x 10^{-18}	- 147.0
0.02 ❍V	0.0566 ❍V	- 93.98	8 x 10^{-18}	- 141.0
0.04 ❍V	0.113 ❍V	- 87.96	32 x 10^{-18}	- 134.9
0.08 ❍V	0.226 ❍V	- 81.94	128 x 10^{-18}	- 128.9
0.1 ❍V	0.283 ❍V	- 80.00	200 x 10^{-18}	- 127.0
0.2 ❍V	0.566 ❍V	- 73.98	800 x 10^{-18}	- 121.0
0.4 ❍V	1.131 ❍V	- 67.96	3.2 x 10^{-15}	- 114.9
0.8 ❍V	2.236 ❍V	- 61.94	12.8 x 10^{-15}	- 108.9
1.0 ❍V	2.828 ❍V	- 60.00	20.0 x 10^{-15}	- 101.0
4.0 ❍V	11.31 ❍V	- 47.96	320.0 x 10^{-15}	- 94.95
8.0 ❍V	22.63 ❍V	- 41.94	1.28 x 1 0^{-12}	- 88.93
10.0 ❍V	28.28 ❍V	- 40.00	2.0 x 10^{-12}	- 86.99
20.0 ❍V	56.57 ❍V	- 33.98	8.O x 10^{-12}	- 80.97
40.0 ❍V	113.1 ❍V	- 27.96	32.0 x 10^{-12}	- 74.95
80.0 ❍V	226.3 ❍V	- 21.94	128.0 x 10^{-12}	- 68.93
100.0 ❍V	282.8 ❍V	- 20.00	200.0 x 10^{-12}	-66.99
200.0 ❍V	565.7 ❍V	- 13.98	800.0 X 10^{-12}	- 60.97
400.0 ❍V	1.131 mV	- 7.959	3.2 x 10^{-9}	- 54.95
800.0 ❍V	2.283 mV	- 1.938	12.8 x 10^{-9}	- 48.93
1.0 mV	2.828 mV	0.00	20.O x 10^{-9}	- 46.99
2.0 mV	5.657 mV	6.02	80.0 x 10-9	-40.97
4.0 mV	11.31 mV	12.04	320 x 10-9	- 34.95
8.0 mV	22.63 mV	18.06	1.28 ❍W	- 28.93
10.0 mV	28.28 mV	20.00	2.0 ❍W	- 26.99
20.0 mV	56.57 mV	26.02	8.0 ❍W	- 20.97
40.0 mV	113.1 mV	32.04	32.0 ❍W	- 14.95
80.0 mV	226.3 mV	38.06	128.0 ❍W	- 8.93
100.0 mV	282.8 mV	40.0	200.0 ❍W	- 6.99
200.0 mV	565.7 mV	46.02	800.0 ❍W	- 0.97
223.6 mV	632.4 mV	46.99	1.0 mw	0.00
400.0 mV	1.131 V	52.04	3.2 mw	5.05
800.0 mV	2.263 V	58.06	12.80 mw	11.07
1.0 V	2.828 V	60.00	20.0 mw	13.01
2.0 V	5.657 V	66.02	80.0 mw	19.03
4.0 V	11.31 V	72.04	320.0 mw	25.05
8.0 V	22.63 V	78.06	1.28 W	31.07
10.0 V	28.28 V	80.00	2.0 W	33.01
20.0 V	56.57 V	86.02	8.0 W	39.03
40.0 V	113.1 V	92.04	32 W	45.05
80.0 V	226.3 V	98.06	128 W	51.07
100.0 V	282.8 V	100.0	200 W	53.01
200.0 V	565.7 V	106.0	800 W	59.03
223.6 V	632.4 V	107.0	1000 W	60.00
400.0 V	1,131.0 V	112.0	3,200.W	65.05
800.0 V	2,263.0 V	118.1	12,800 W	71.07
1000.0 V	2,828.0 V	120.0	20,000 W	73.01
2000.0 V	5,657.0 V	126.0	80,000 W	79.03
4000.0 V	1,310.0 V	132.0	320,000 W	85.05
8000.0 V	22,630.0 V	138.1	1.28 MW	91.07
10,000.0 V	28,280.0 V	140.0	2.0 MW	93.01

Voltage, V_{P-P} = Vrms x 2 x ⊠2 Voltage, dBmV = 20 x Log_{10} ↑Vrms ▫ ↖0.001v×

Power,Watts = $\frac{(Vrms)^2}{}$ Power,dBm = 10 x Log_{10} ↑Vrms ▫

50↟ ↖0.001w×

INTERNET RAMBLINGS

Bill has some good advice for those of us that frequent the Internet. Even though it is not directly ham, since the next page contains Internet tempting adventures, I feel the material is well worth reading.
Art...WA8RMC

WHAT IS CYBERFRAUD?

A cybcrham sets down at the computer to surf the various cybenets. Normally we are treated to viewing pleasure with little concern. We may choose to see information or news items, even chitchat with another cyberham. All seems well and proper. Everything seems on the up-and-up.

The Internet, a fast growing electronic network of thousands upon thousands of computer users, is where many cyberhams gather to exchange ideas. But quietly lurking, an unsuspected evil force awaits to trap the unwary.

Beware of the high-tech scam about to descend! Danger, the Cyberfraud computer culprit has you in mind as a target.

The cyberbums are ready to con you into giving them your credit card number. They will offer tempting get-rich-quick schemes. Offered may be health cures as phony as sleeping with a dead frog under your pillow. They have other subtle ploys.

No, they are not aliens from another planet. They are savvy telemarketers ready to present just about any fraudulent scheme you can imagine. These cheating artists, masters of high-tech chicanery aim particularly at senior cyberhams. Some of the scams have been around for years. The pyramid scheme that operates similar to a chain letter is but one example.

Do not let a respectable looking Internet site suck you into the temptation of making unearned quick profits. Maybe a few early-on investors will get back more than their original investment, but the vast majority will lose their contribution.

The Internet is an international network of many thousands of computers connected by telephone lines, and it is virtually unregulated. Any cyberham with their home computer connected through a modem to this network can send and receive data, files, pictures, product information sounds, and text ranging to porno.

A fraudulent Web site can spring-up over night, suddenly appear, collect your social security number and more, and then disappear even quicker. It takes very little to create what first appears to be a magnificent Web site, fraudulent or otherwise. Most Web sites are legitimate, but use caution and don't give away the password numbers to your savings account.

Fraud committed via the Internet breaks the laws associated with federal and state telemarketing fraud. To enforce these laws is entirely a different matter. Recovering lost money may take many years.

The scam artists could be in your home town or they could be located in Hong Kong, Bombay or who knows where. To shut down or prosecute fraudulent operators based in other countries, whose local laws may not forbid scams, is nearly impossible. Many of the operators simply ignore orders to cease and then disappear before they can be extradited.

The Internet bad-guys may not be peddling anything. They just need enough information about your accounts to separate you from your money. Any E-mail inquiries about credit card, bank account, or social security numbers can be a warning sign.

Be aware of the request, 'We need to confirm your access code' or 'We wish to verify your credit card number' scams. Passing away information of this nature can deplete your bank funds and cause unauthorized huge bills to appear on your credit accounts. Sending uncoded credit card numbers across the Internet can be dangerous due to unscrupulous sites ready to intercept the information It is much like someone listening to a phone conversation ready to misuse a private conversation.

Foolproof Web sites are being developed to improve security. Even the very expert computer operators do not always spot cyberfraud criminals. The so-called experts, thinking they are on top of the situation often are taken-in as easily as a novice. It is not a matter of how smart you are. Even the professionals such as attorneys, doctors, engineers, and hams, have lost money to the cyberfrauders. Cyberhams, like the average consumer, must be particularly on-guard. You are your own best defense, so when in doubt don't pass it out.

INTERNET INFO

If you have access to the INTERNET, you may be interested to know of some of the HAM related information that is available. We've tried to start a list of interesting places to look in case you get in the "surfing" mood. If any of you find different places to look, I'd appreciate having the info passed on to me so I can include it in this list. The ATCO home page is updated periodically so be sure to check often for late breaking NEWS. The addresses listed below are case sensitive, so type exactly as shown below.
(If anyone has comments or would like additional listings contact me via EMAIL as towslee@ee.net.

ATV home pages:

http://psycho.psy.ohio-state.edu/atco	ATCO ATV home page. **
http://www.geocities.com/Hollywood/5842	East Tennessee ATV home page
http:/www.portal.com/~jpawluk/KB6MMF.html	California ATV home page
http://www.ladas.com/ATN	**A**mateur **T**elevision **N**etwork in Central / Southern California
http://www.mindspring.com/~rwf/aatn1.htm	Atlanta, Georgia ATV home page
http://www.stevens.com/HATS/home.html	Houston Texas ATV home page
http://uugate.aim.utah.edu/utah-atv/root.html	Utah ATV home page
http://www.hayden.edu/Guests/AATV	Phoenix Arizona Amateurs
http://citynight.com/atv	San Francisco California ATV
http://www.njln.net/~magliaco/atv.html	Brookdale ARC in Lincroft New Jersey
http://www.smart.net/~brats	Baltimore Radio Amateur Television Society (BRATS)
http://www.regio.rhein-ruhr.de/hamradio/atv	German ATV
http://www.ecn.net.au/~sbloxham	Australian ATV (exhaustive list of other ATV & ham radio sites)

** I have just contracted for my own URL which includes space for a home page. I will convert this in the near future. Stay tuned. My new address is towslee@ee.net but I'm still available on my work address as towslee@mtwt.mt.com.

NOTE: If you are a regular Internet browser, maybe you'd like to be kept up to date on all of the ATV related news bulletins that are generated Nationally. If so you can subscribe to the "ATV Internet mailing list" and your Email will receive the bulletins automatically. If you'd like to SEND a message to all other subscribers this can be done also. Its free to all.

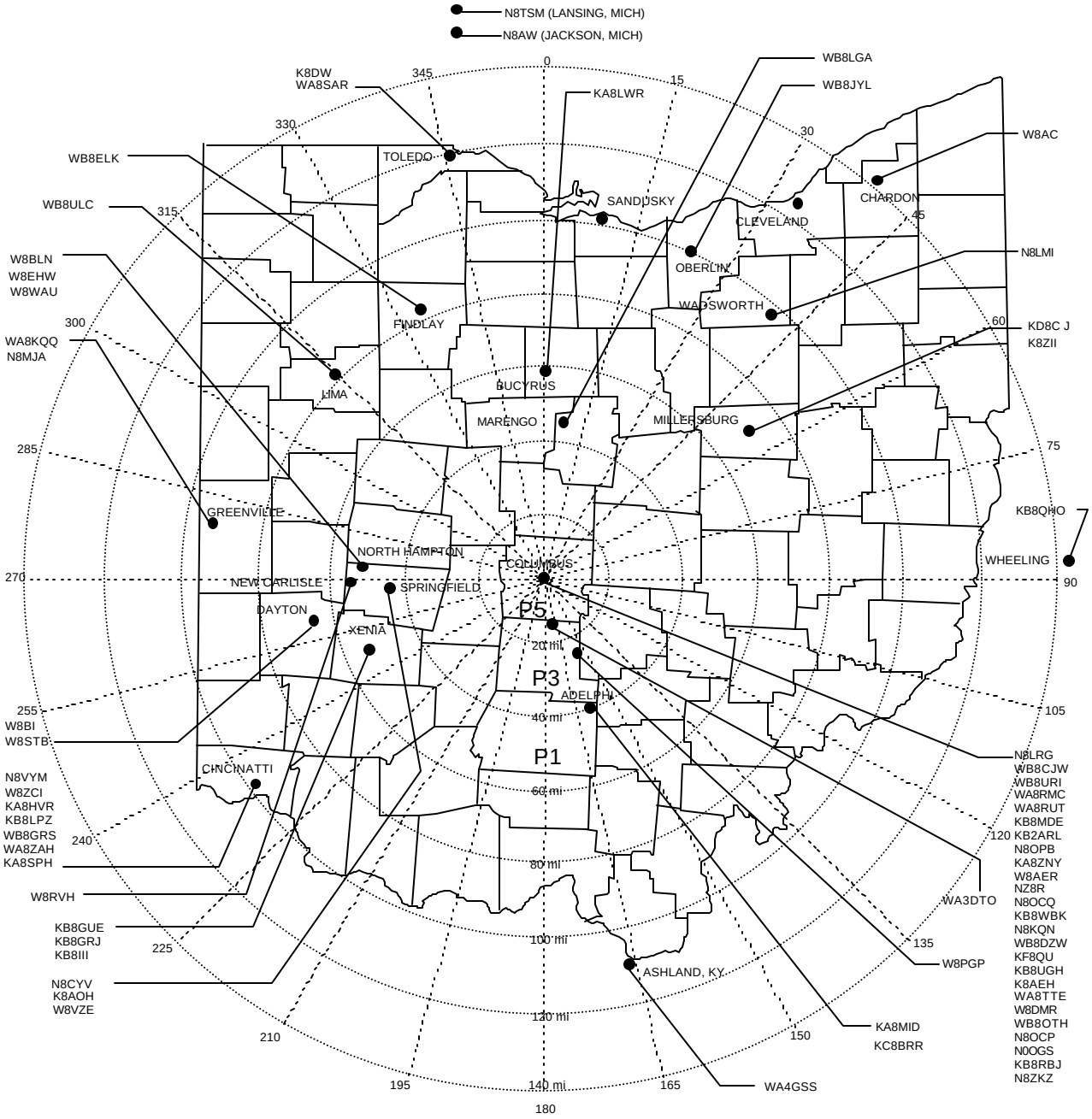
To subscribe, send Email message to "listserv@tallahassee.net" and include in the message the line SUBSCRIBE ATV.
To send a message address it to "ATV@tallahassee.net".
To be removed from list, send Email message to "listserv@tallahassee.net and include in the message "UNSUBSCRIBE ATV".

The following addresses are helpful in searching for many different Ham Radio topics on the INTERNET. I have found them be very powerful search engines for ham radio and television topics. At any point when logged onto the INTERNET, type the following:

http://www.yahoo.com/Entertainment/television/Amateur_television	listing of the available ATV home pages.
http://www.yahoo.com	table of contents pointer for a vast variety of topics.
http:/www.acs.ncsu.edu/HamRadio	General ham radio info- satelite track, call sign database etc.
http://www.wolfe.net/~daydream/html/ftpsites.html	Ham radio equipment mo d. / problem listing directory.
http://www.arrl.org/hamfests.html	Current yearly hamfest directory.
http://amsat.org	AMSAT satellite directory/home page.
http://www.arrl.org	ARRL home page
http://asp1.sbs.ohio-state.edu	Local & global weather map information (good detailed info)
http://www.ualr.edu/doc/hamualr/callsign.html	Search by call sign or name.
http://psycho.psy.ohio-state.edu/w8lt	Ohio State University W8LT radio station.
http://www.acs.ohio-state.edu	Ohio State University home page. Lots of neat stuff.

ATV LOCATOR MAP

Below is an Ohio map complete with counties, main cities, beam heading (from Columbus) and all of the hams known to have had video on the air recently. Please report anyone that has had video on and seen recently. If video is not reported for a given individual in about a year, I will remove them from the map. Let's see if we can make Ohio near the top for ATV activity. It also contains mile circles & approximate P levels expected. Generally the signal drops by 1 P unit each time the distance is doubled if all other factors remain unchanged. The P numbers are typical reported values under average (non band open) conditions.



ATCO REPEATER TECHNICAL DATA SUMMARY

This space of each publication includes the technical information of our repeater. Each time a new feature is brought on line it's added here. Use this as a quick reference for up/down access codes as well as some of the more important parameters of our system.

Main repeater:

Location: Downtown Columbus, Ohio

Coordinates: 82 degrees 59 minutes 53 seconds (longitude)
39 degrees 57 minutes 45 seconds (latitude)

Elevation: 630 feet above average street level
1460 feet above sea level

Transmitters: 427.25 MHz AM modulation and 1250 MHz FM modulation.
interdigital filter in output line of 427.25 & 1250 transmitter
Power - 40 watts average 80 watts sync tip (427.25)
50 watts continuous(1250.25)
Link transmitter - 1 watt NFM 2.5 kHz audio (446.350 MHz)

Identification Both 427 &1250 transmitters identify simultaneously every 10 minutes with video showing ATCO and WA8RUT with three different screens. Audio identification is 4 sequences of Morse Code.

Transmit antenna: 427.25 MHz - Dual slot horizontally polarized 7 dBd gain major lobe west
1250 MHz - Single slot horizontally polarized 3 dBd gain major lobe west

Receivers: 147.45 MHz for F1 audio input control of touch tones
439.25 MHz for A5 video input with FM subcarrier audio
910.25 MHz for A5 video link data from remote sites
1280 MHz for F5 video input

Receive antennas: 147.45 MHz - Vert. polar. Hi Gain "Comet" 12 dBd (also for 446 MHz output)
439.25 MHz - Horiz. polar. dual slot 8 dBd gain major lobe west
910.25/920.25 MHz - Vert. polar. dB Products 10 dBd gain
1280.25 MHz - Horiz. polar. single slot 3 dBd gain major lobe west.

		UP	DOWN
Input control:	Major Touch tones: beacon (10 min)	*439	*22
	regional weather radar	697	#
	**Local radar(5 min)	264	#
	User repeat 1 minute	*45	*22
	Touch tone pad tester	#0	#5
	Manual mode (ID)	*7790	*22
	(910 input)	*7791	*22
	(439 input)	*7792	*22
	(1280 input)	*7793	*22
	(future)	*7794	*22
	NASA Select	*70	*20
	5 second ID	#9	*22
	Bulletin board	285	#
	Reset to scan mode	D37 or #437** inactive at this time	

Remote sites:	**Local radar	(910.25 MHz link output 8 watts)
	NASA select at KA8ZNY QTH	(910.25 MHz link output 10 watts)
	Aux link at WA8RUT QTH	(910.25 MHz link output 1 watt)
	Aux link at WB8CJW QTH	(910.25 MHz link output 1 watt)
	Aux link at WA8RMC QTH	(910.25 MHz link output 5 watts)

ATCO MEMBERSHIP INFORMATION

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

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

The membership period is from January 1ST to December 31ST. New Members will receive all ATCO newsletters published during the current year prior to the date they join ATCO. For example, a new member joining in June will receive the January and April issues in addition to the July and October issues. Your support of ATCO is welcomed and encouraged.

ATCO CLUB OFFICERS

President:	Art Towslee WA8RMC	Repeater trustees:	Art Towslee WA8RMC
V.President:	Ken Morris WA8RUT		Ken Morris WA8RUT
Treasurer:	Bob Tournoux KF8QU		Dale Elshoff WB8CJW
Secretary:	Rick White WA3DTO	Statutory agent:	Rick White WA3DTO
Corporate trustees:	Same as officers	Newsletter editor:	Art Towslee WA8RMC

ATCO MEMBERSHIP APPLICATION

RENEWAL O NEW MEMBER O DATE _____
OK TO PUBLISH PHONE # IN NEWSLETTER YES O NO O HOME PHONE _____
NAME _____ CALL _____
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 KF8QU
3569 Oarlock CT
Hilliard, Ohio 43026

ATCO TREASURER'S REPORT - de KF8QU

CASH BALANCE (7/25/96)		$1011.40
RECEIPTS	(dues)	$70.00
OTHER INCOME	(bank interest)	$ 10.90
EXPENDITURES	(postage) ($.32 x 70)	$ (22.40)
BALANCE	(10/15/96)	$1069.90

ATCO MEMBERS AS OF 15 OCTOBER 1996

K8AEH	Wilbur Wollerman	1672 Rosehill Road	Reynoldsburg	Ohio	43068	866-1399
W8AER	Dave Sears	1678 Kaiser Dr	Reynoldsburg	Ohio	43068	861-0904
KC8AGZ	Dave Lukens	11780 Willowview Ct	Pickerington	Ohio	43147	
K8AOH	Charley Tucker	4546 Laredo Street	Springfield	Ohio	45503	513-390-0693
WB4BBF	Randall Hash	212 Long Street	Bluefield	Va.	24605	
W8BJN	Gene Kirby	13613 US 36	Marysville	Ohio	43040	513-644-0468
KC8BKD	John Miller	4419 Park Ave West	Mansfield	Ohio	44903	
WB8CJW	Dale Elshoff	8904 Winoak Pl	Powell	Ohio	43065	766-5823
N8CYV	Blaire Standley	721 West North St	Springfield	Ohio	45504	
K8DW,W8FB	Dave & Paul Wagner	2045 Maginnis Rd	Oregon	Ohio	42616	419-691-1625
WA3DTO	Rick White	5314 Grosbeak Glen	Orient	Ohio	43146	877-0652
WB8DZW	Roger McEldowney	5420 Madison St	Hilliard	Ohio	43026	876-6033
W8EHW	Foster Warren	124 East Clark St	No. Hampton	Ohio	45349	
WA8EOY	John Schlaechter	3199 Lewis Rd	Columbus	Ohio	43207	491-4470
KA8HAK	Jim Reese	1106 Tonawanda Ave	Akron	Ohio	44305	
N8KQN	Ted Post	1267 Richter Rd	Columbus	Ohio	43223	276-1820
WA8KQQ	Dale Waymire	225 Riffle Ave	Greenville	Ohio	45331	513-548-2492
N8LMI,N8SIR,KB8UVK	Phil,Jim,Phil jr Buckholdt	153 East Bergey St	Wadsworth	Ohio	44281	
N8LRG	Phillip Humphries	3226 Deerpath Drive	Grove City	Ohio	43123-4100	871-0751
KA8MID	Bill Dean	PO Box 458	Adelphi	Ohio	43101	614-655-2454
KB8MDE/N8ZTL	Shaun Miller/Greg MacCartney	5061 County Rd 123	Mt Gilead	Ohio	43338	419-768-2588
K8MZH	Leland Hubbell	7706 Green Mill Road	Johnstown	Ohio	43031	967-8412
WD8OBT,KB8ESR,KA8ZPE	Tom Camm & sons	1634 Dundee Court	Columbus	Ohio	43227	860-9807
N8OCP	John O'Bryant	3139 ElPaso Drive	Columbus	Ohio	43227	274-5410
N8OCQ	Robert Hodge	3689 Hollowcrest	Columbus	Ohio	43223	875-7067
N8OPB	Chris Huhn	146 South Hague Ave	Columbus	Ohio	43204	
W6ORG	Tom O'Hara	2522 Paxson Lane	Arcadia	Cal	91007-8537	818-447-4565
WB8OTH	Perry Yantis	1850 Lisle Ave	Obetz	Ohio	43207	491-1498
KE8PN	James Easley	1507 Michigan Ave	Columbus	Ohio	43201	
W8PGP,WD8BGG	Richard, Roger Burggraf	5701 Winchester So. Rd	Stoutsville	Ohio	43154	614-474-3884
KF8QU	Bob Tournoux	3569 Oarlock Ct	Hilliard	Ohio	43026	876-2127
W8RIK	Joe Hussey	1678 Sandhurst Rd	Columbus	Ohio	43229	895-7601
WA8RMC	Art Towslee	180 Fairdale Ave	Westerville	Ohio	43081	891-9273
WA8RUT,N8KCB	Ken & Chris Morris	3181 Gerbert Rd	Columbus	Ohio	43224	261-8583
W8RVH	Richard Goode	9391 Ballentine Rd	New Carlisle	Ohio	45334	513-964-1185
WD8RXX	John Perone	3477 Africa Road	Galina	Ohio	43021	
WA8SAR	Gary Obee	3691 Chamberlain	Lambertville	Mich	48144	
N8SFC	Larry Campbell	316 Eastcreek Dr	Galloway	Ohio	43119-8914	
KG8SN	Paul Ernst	67 Richards Road	Columbus	Ohio	43214	267-5758
W8STB	John Hey	894 Cherry Blossom Dr	West Carrolton	Ohio	45449	
N8TBU	Ed Latham	8399 Fairbrook Ave	Galloway	Ohio	43119	
KB8TRP	Tom Flanagan	1751 N. Eastfield Dr	Columbus	Ohio	43223	272-5784
WA8TTE	Phil Morrison	154 Llewellyn Ave	Westerville	Ohio	43081	
KB8UGH	Steve Caruso	39 South Garfield Ave	Columbus	Ohio	43205	461-5397
WB8URI	William Heiden	4435 Kaufman Rd	Plain City	Ohio	43064	614-873-4402
KB8UU	Bill Rose	2685 Kropp Road	Grove City	Ohio	43123	878-8964
WB8VJD	Rick Morris	203 Merton Street	Holland	Ohio	43528	
W8WAU	Jake Fuller	PO Box 117	No. Hampton	Ohio	45349	
KB8WBK	David Hunter	45 Sheppard Dr	Pataskala	Ohio	43062	927-3883
KB8YMN	Mark Griggs	2160 Autumn Place	Columbus	Ohio	43223	272-8266
KB8YMQ	Jay Caldwell	4740 Timmons Dr	Plain City	Ohio	43064	
KA8ZNY,N8OOY	Tom & Cheryl Taft	386 Cherry Street	Groveport	Ohio	43125	836-3519

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

FIRST CLASS MAIL

DON'T FORGET OUR NET AT 9:00 PM ON TUESDAY NIGHT ON 147.45 MHz
THE FALL EVENT IS ON SUNDAY OCTOBER 20….BE THERE FOR THE PRIZES!