

# FEEDBACK

VOLUME 52 ISSUE 9

SEPTEMBER 2007

## MASSILLON AMATEUR RADIO CLUB OFFICERS

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Ralph Bugg  
K8HSQ

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N3JJT

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## -- SHORT SKIP --

Congratulations to MFJ on their 35th year in business, and congratulations to this world - class column on its 40th anniversary. 40 years of outstanding reporting with many "scoops" to its credit. Yes, Bunkey and I are look'n forward to the next 40 years - so stay tuned !

73 de WB8OWM

## SEPTEMBER MEETING

The meeting for the month of September will be held at the Massillon Senior Center in downtown Massillon on September 7th 2007 at 8:00 PM.

Well here it is September already and that means the kids will be back in school (most) and caution is urged to watch out for those big yellow school buses. Leave plenty of room for their turns and of course be sure to stop when they are loading & unloading. September also means we must begin to prepare for the upcoming Massillon Amateur Radio Club **Auction Fest 2007** !! Yes we must begin to form committees for security, communication, the auction, and of course the Club main table. For this year to be a success we are going to need all the help we can get. So please clear your calendar and plan to devote this weekend to the Club ! The date is October 28th with set up on the morning of October 27th. Tables & chairs have to be set up and electric cords need to be run. More on this at the meeting. See you there !!!

## MARC CONGRATULA- TIONS

MARC wishes to congratulate Skip Westrich WB8OWM on his forty years writing the "Short Skip" column for Feedback. Speaking for all members of MARC: THANKS SKIP !

Also MARC wishes to congratulate Igor Nikishin K8INN and Stephanie Green on their nuptials Saturday August 11th. The ceremony was held at the All Saints Church on Henry Ave in Canton. CONGRATULATIONS Igor and Stephanie!



## MARC MINUTES August 3rd, 2007

The Massillon Amateur Radio Club meeting was held at the Massillon Senior Center with 29 members and guests present. MARC President Ralph K8SHQ opened the meeting at 8:00 P.M. The Pledge of Allegiance was given and a round of introductions was made.

Byron KF8UN made a motion to accept the July Minutes as printed in the Feedback. Motion was seconded by Rich KA8ZQH and passed..

Ann N8GAF gave the treasurer report.

### **Old Business**

No one showed up for the Code Proficiency test session.

Jim headed a rotor and antenna party at the Senior Center. Everything is back up on the tower. However the antenna has a problem and needs to be looked at.

Hamshack Committee – The Hamshack Committee gave their report on what is needed for the Club's station. Some of the suggestions were.

For Physical – Exhaust Fan, QSL File, Left Desk for boat anchors, Center Desk for operating, and Right Desk for Auxiliary operating.

Electronics – Omni 7 160m – 6m transceiver, 15" LCD Monitor, Large Clock, Winlink System

Antenna – 2m/440 Vertical, 10m Vertical, another Wire, and antenna patch panel.

Safety Break Stats – 50 cases pop, 1200 cups coffee, 300 – 400 snacks, 100 donuts, 500 + homemade items

A shop manual for the Club's generator was purchased.

### **New Business**

ARRL is having a convention in Cleveland on September 22, 2007. [WWW.2007gldc.com](http://WWW.2007gldc.com) for more information.

Bruce Brown KC8RKS presented a plaque from Tour de Cure for the appreciation of our help with their Bike Race in Akron.

Motion made by Dan N8DZM and Seconded by Gene – The club not make any major purchases over \$500 until the Kenwood 940 is settled. Passed with hand count.

Joe WD8BGW made a motion up to \$150 to purchase the materials to build an antenna patch panel. Seconded by Mike KD8ENV and Passed by voice.

Mike KD8ENV may have a monitor for the Club's hamshack.

50/50 was won by Scott N8JJT for \$19.

**Minutes by Dan N8DZM**

## ... Stark Co ARES Website ...

The Stark County ARES website ([wd8aye.org](http://wd8aye.org)) has been in operation for about five years thanks to the generous contribution of Paul Burke, KB8VAS. About 3 weeks ago I discovered that I could no longer access the site for normal updates and maintenance. As I complete this column the site is now down with a note stating that the account has been suspended.

Despite my best efforts I have been unable to contact Paul. After some discussions with Area EC Dave Beltz, WD8AYE we have decided to look for a new domain to host the site. It may be necessary to obtain a new domain name as part of this effort. We have not yet fully decided on a course of action. The site was used to keep local ARES members and the local community informed of our daily ARES activities and provided a valuable community information service.

We hope to have this move completed in the next few weeks. I hope to keep everyone informed by providing updates via the various local nets and the MARC club website.

## .. Hall of Fame Festival ..

Thanks to the efforts of area radio operators, the 2007 Hall of Fame Festival was another great success. Over 150 volunteer hours were generated by 38 radio operators this year providing multiple communications responsibilities for both the Community Parade and the Timken Grand Parade. Once again parade organizers were quite pleased by the dedication and professionalism displayed by amateur radio operators during both events and continued to realize the important role we play in the success of the annual Hall of Fame Festival.

Community Parade Chairman Dave Bresson and Timken Grand Parade Chairman Ed Murray both wished to express their deepest appreciation for the service provided by our volunteers. As soon as the Stark Co ARES website is back up and operational, a complete summary of both parades will be posted.

## .. September Special Events ..

September will be a busy month for local radio operators. First up will be the annual ARRL Ohio Section Conference which will be held on Saturday, September 15th at the Ohio State Fire Academy in Reynoldsburg near Columbus. The conference will include annual reports from the Ohio Section Cabinet including Section Manager Joe Phillips, K8QOE and also reports from Ohio's Section Emergency Coordinator, Section Government Liaison, Official Observer Coordinator as well as others. I expect to attend this years conference and will provide a report on it at our next club meeting.

Ohio is also the site of this year's Great Lakes Division Convention held in conjunction with the Cleveland Hamfest the weekend of September 22 & 23. ARRL Conventions are a great way to learn more about what is happening in the world of Amateur Radio and also includes several informative seminars. This year's event will also include guest speakers Bob Heil, K9EID and Chip Margelli, K7JA also from Heil Sound. Also joining the speakers list will be Dennis Dura, K2DCD, the ARRL new Emergency Preparedness and Response Manager.

All these events will occur on Saturday with the hamfest on Sunday, Sept 23. A very informative website has been setup for the Convention and is located at [www.2007glc.org](http://www.2007glc.org).

## ... Stark Co Haz Waste Collection Day ...

The Stark County Solid Waste Management District provides a great way to easily dispose of household hazardous waste material including such items as hazardous paints and chemicals as well as old computer equipment & other electronics. I'll bet most hams have a few old computers taking up shack space that you would like to get rid of. While I have household waste pickup, my hauler will not take any computer related items, especially old computer monitors.

If it's time to clear out these items September 27 – 29 you can drop off these items at The Timken Company Dueber Avenue site from 8 AM to 4 PM. The drop off service is free to area residents. I took advantage of a previous drop off held in August at Stark State College to throughout numerous old paint and computer items. One word of warning – if you wait until Saturday to go prepare to wait in line a while. I was in line for about an hour and a half at Stark State College the line was about 200 cars in length !

Please do your part to reduce the amount of toxic materials that normally require landfill disposal and help the environment at the same time. Additional information can be found at their website at [www.timetorecycle.org](http://www.timetorecycle.org).

**73's for now, see you at the meeting..**  
**De Terry – N8ATZ**



## THE N8FEB 5 BAND DIPOLE

Want to try building a "relatively" simple dipole? Then try to build the 'FEB Spider with NO traps, or NO capacitors! Be sure to come to the meeting and check out the "finished" balun!

After moving out of state some 750 miles, and working for a few years then retiring, I had some time on my hands and said to myself "it's time to get back on the air from my new QTH". The cheapest and fastest way to do this was with a long wire antenna, thus it all started.

The only good bands at the time were the 40/75/ and 160 meter bands. After a few days of tuning and retuning when changing bands, even if I "marked" the tuner, it was just not getting it! Time for a change!

At first I tried using commercial built antennas, but I soon found out you still had to use a tuner. I was listening to some hams on the air talking about using V's, longwire, 4 square, loops, verticals and so on. In the end, wire antennas and horizontal won out. Reason being the small space I had to work with and I already had 750 feet of # 8 wire. To save money I wanted to use only one feed line. So to the drawing board and after a few nights, I came up with the design I call the "Spider".

First I needed a feed point. I took my idea from the commercial type baluns (the ones made from PVC, with a hook on top and eyebolts on either side). But I wanted more strength. I had the idea and I had the wire. So let's get building.

I started by stripping off the insulation jacket from the # 8 wire. I then cut two lengths to 130 feet each for the 160 meter; two 65 foot for the 75 meter; two 33 feet for the 40 meter; two 16.5 feet for the 20 meter; and two 8.5 foot for the 10 meter bands. Adding a foot to each to be safe. Thus the 5 band FEB was on it's way!

To adjust the antennas, I took a an 8 inch piece of RG8X, added a PL-259 to one end and striped the outer jacket and separated the braid and center conductor about 5 inches and fixed it to a 3x6x1/4 inch Plexiglas. I then hooked up each antenna one at a time and adjusted them one at a time to the center of it's band. This all done and completed, I set them aside to make my balun.

I took a 24 inch piece of 4 inch ID thin wall PVC type drain pipe and drilled 5 holes 4 inches apart from the center to accept the 1/4X1 1/2 inch eyebolts on each side. To mount them, I used a large washer on the outside and one on the inside of each of the five holes with an eyebolt and a nut. Do not tighten at this time. I then took a 5 foot piece of # 12 house wire and striped off the outer jacket. Take one piece of the inner wire and strip off about 34 inches of the jacket from the center out leaving the jacket on the rest. Find the middle of the wire and put a bend in it (about 45 degrees) and place it under the washer of the top eyebolt on the inside of the drainpipe and tighten the nut. Cross the wire and place it under the 2nd washer and tighten the nut.

Repeat this for all 5 eyebolts. Repeat this wiring on then other side of the drain pipe where you have the other 5 holes drilled and the eyebolts mounted. You now have a balun that can accept five antennas----all most!

Now take one of the endcaps and drill a 5/8 hole in the center for a SO-239. Place the SO-239 in place and mark where the four mounting holes are to be drilled and drill them with a hole whatever is the size of mounting hole, usually about 1/8 in depending on the make of the SO-239. On the other end cap drill a hole in the center for the eyebolt that will be used for a hanger.

Hook either side of the dipole to the center of the SO-239 and the other to one of the four mounting screws of the SO-239. When this is done, check all eyebolts from the center of the SO-239 to the eyebolts on the same side for continuity and to the other side to check for any shorts. Then do the same thing to the other side to check for any shorts and continuity. If none are found, all that is left is to apply PVC cement to the insides of each cap and cement them in place. Make sure the leads for the SO-239 do not short when putting them inside. Take the six sheet-metal screws and put three in each end cap from the side into the PVC pipe for added support. Now your balun is finished.

Now take two of the 1/2 inch plastic rods and cut to 33 inches. Use your # 7 drill bit and drill 5 holes 8 inches apart to separate the 5 different antennas. The 160 meter antenna will go through the top hole; the 80 meter antenna will go through the 2nd hole; 40 meter through the third; 20 meter through the 4th and the 10 meter antenna through the 5th hole. Now cut two rods at 25 inches and drill 4 holes 8 inches apart to spread the 160, 80, 40 and 20 meter antennas. Then cut two rods at 17 inches and drill 3 holes 8 inches apart and cut two rods at 9 inches with one hole at 8 inches. The ends of each antenna will terminate at the bottom of each spreader. The two egg insulators will of course be at the end of the 160 meter antenna which is the longest wire (130 ft. ). The other 4 antennas will hang from the 160 meter antenna to give it the spider web look. After all antennas are in place, trim off any excess wire and put an wire tie to keep it in place.

When this is done, secure the 160 meter antenna to the top two eyebolts and begin to adjust the antenna to the center frequency of 1900 KHz. ( ED note: the antenna can hang just a few feet off the ground to begin this preliminary adjustment ). Now add the 75 meter antenna to the second eyebolt and adjust it to the center of the band. You will have to readjust the 160 meter and the 75 meter ; going back and forth till they are both adjusted to the center of the bands. Now add the 40 meter and start all over again! Then add the 20 meter and readjust all antennas. Finally add the 10 meter antenna and readjust all antennas. With a little time and patience you can achieve matches of less that 1:1 to a match of 1:3 (max) db match on all 5 bands.

With this antenna I have worked all 50 States on the 160, 75, and 40 meter bands in less than 6 months with 33 contacts on 160, 57 on 75 meters and 59 on 40 meters. For DX I have heard HR/ CM/ KP4 on 160; C6/EI/KP4/CT/SP/ and XE and others on 75 meters.



I have worked XE/CU2/CO/J39/ZP/S57 on 40 and I have worked all over Europe and I have the cards to prove it! With the 10 meter band being dead, I have not played them so I cannot report on this band. All of this is with using just 100 watts from the rig and of course not using a tuner of any kind and of course just one lead in of RG8X coax. This was from late January until August 6th.

Compared to the commercial antenna I bought I have heard reports of 55 or better. Static is only about 3 to 4 db and my reports are a lot higher. So the time it takes to build and tune this antenna is well worth it !

**73's de Jack N8FEB**

**PARTS LIST**

24in x 4 in PVC thin wall drain pipe	\$ 1.00 /ft Lowes
2-4in end caps	\$ 2.35 ea Lowes WAL MART
11 1/4in x 1 1/2 eyebolts	\$1.25 pack 2
22 washers 1/4 in (large)	2.39 pack 30
6- 1in sheet metal screws	.89 pack /10
550 ft # 8 to # 16 wire ( your choice)	\$47.00 /500 ft roll at Lowes.
PVC cement	\$ 2.50 any hard ware
8 plastic spreaders, 1/2 in OD	\$ 1.00/ 4 ft length TSC
1 so-239	\$3.50 AES, hamfest etc.
4 # 6-32-1/2 Machine screws	\$ 2.35 pack 17 Wal Mart
2 egg insulators	\$ .79 ea AES
Total	\$ 82.41

Tool needed ; Drill bits # 7 - 1/4 & 5/8 in

7/16 in wrench  
screwdriver

( ED Note: Jack included some drawings of his antenna and balun with his report; however I tried to scan them and insert them into the newsletter but they did not turn out as the quality of the thin lines did not come out. You will need to see the complete finished balun (pic below) and his drawings at the meeting on September 7th )



**The 406Mhz Emergency Locator Transmitter**

**Propagation on the bands above 30 MHz is usually restricted to “line of sight.” reception range and signal strength will be greatly improved if you use an external outdoor antenna. Section 705 of the federal Communications Act prohibits divulging or using the contents of any message you hear not intended for the general public**

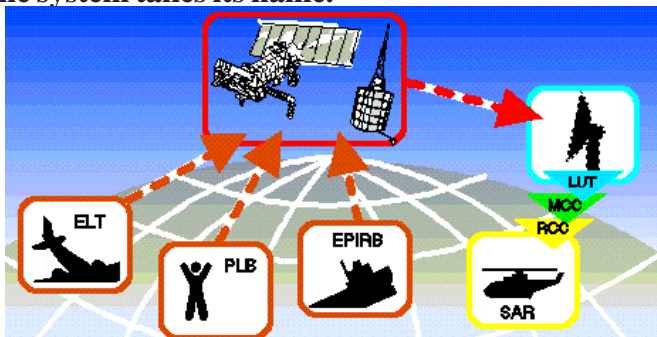
**In another article we covered the conventional Emergency Locator Transmitter (ELT), which transmits on the frequencies of 121.50Mhz and 243.00Mhz. We also discussed some of the problems associated with this ELT such as containing a transmitter that is prone to drift off frequency and a false alarm rate of 95.7% along with the whippy 100mW transmitter. We discussed how 121.50Mhz ELTs can only get their target aircraft with 450 square miles but a 406Mhz ELT can get the target aircraft within 12.5 square miles. Unless things change, new laws will require you to upgrade to the superior 406Mhz ELT by Feb 1, 2009.**



**Studies show that while the initial survivors of an aircraft crash have less than a 10% chance of survival is rescue is delayed beyond two days, the survival rate is over 60% if the rescue can be accomplished within eight hours. It's clear that the**

**406Mhz ELT is far superior to the older 121.50/ 243.00Mhz units. Before diving into the modern marvels of 406Mhz, let's discuss what brought ELTs into existence. The beginning of Sarsat dates back to 1970 when an aircraft carrying a couple of congressmen crashed in the remote regions of Alaska. A massive search was started but to this day, no trace of the congressmen or the aircraft have ever been found. Since congressmen often fly, they decided to come up with some laws to protect themselves and that was requiring an aircraft to carry an ELT. One of the requirements of the ELT is it must automatically activate and transmit a**

homing signal if the aircraft hits the ground somewhat harder than normal. At that time in history satellite technology was in its infancy, thus the frequency selected for ELT transmissions was 121.50Mhz. This frequency was set aside as the international aircraft distress frequency. Basically you flew along in the aircraft and monitored 121.50Mhz on your VHF com radio and tried to find the downed aircraft this way. This method was poor at best. You had to be flying in the area of the crash, and there was no way to verify where the signal originated. Even today, folks often use 121.50Mhz to chat on and believe me, that doesn't help the system any. After several years, the limitations of ELT's began to outweigh their benefits. At that time, a satellite-based system was conceived. It would operate on a frequency reserved only for emergency beacons (406Mhz), it would have a digital signal that uniquely identified each beacon and would provide world coverage. Once this system was up and running, operation and monitoring were turned over to the National Oceanic and Atmospheric Administration (NOAA). As this system grew, more emergency beacons found their way into the market. NOAA not only monitors 121.50Mhz but 406Mhz from aircraft, EPIRB's (boat stuff) and personal ELTS came into life. A similar system was created by Russia. Four nations, USA, Canada, France and the Soviet Union banded together in 1979 to form Cospas-Sarsat. In 1982, the first satellite was launched and by 1984 the system was declared fully operational. While Cospas-Sarsat satellites were primarily designed to for 406Mhz, they still have provisions to monitor 121.50Mhz. The original four member nations have now been joined by 25 other nations that operate 28 ground stations and 15 mission control centers worldwide or serve as search and rescue points of contact. The keystone of the Cospas-Sarsat System is the group of polar orbiting satellites from which the system takes its name.



These satellites provide the ability to detect and locate 406Mhz alerts worldwide and 121.50Mhz alerts for about sixty percent of the world. In addition to the polar orbiting satellites the system is currently evaluating the use of geo-stationary orbiting satellites. Search and Rescue will only get better as technology progresses and aircraft owners start updating to modern ELT equipment.

Just what is the difference between a 406Mhz and a 121.50Mhz ELT? It's much easier to explain what they have in common because there isn't much. Both transmit a signal in hopes you will be found should your flight come up short of the destination and that's where the similarities end. Unlike the 121.50Mhz ELT, which transmits a continuous 100mW signal, the 406Mhz ELT transmits a whopping five watts for every 50 seconds for one-half second. Because the system isn't always transmitting, battery life is fairly long. Transmitting in short bursts allows the satellite to track up to 90 ELTs at once. The 406Mhz ELT was designed specifically for satellite detection and Doppler location and provides the following.

- Improved Doppler location accuracy and ambiguity resolution
- Increased satellite system capacity
- Global coverage
- Unique identification of each beacon and possible lat/log fix
- Improved frequency stabilization

Frequency stabilization of the 406Mhz transmitter is paramount. 406 ELT transmitters have a much tighter tolerance than the older 121.50 ELT, thus Doppler location is far more accurate. Emergency 406 systems have the ability to transmit information for identification.

( Ed Note: Thanks to Rick K8RIC for sending us this article. )



During transmission, the 406 ELT will transmit digitally an encoded message which provides information such as country of origin, tail number of aircraft, aircraft type, emergency contact, serial number of the ELT and (with the proper options) position data derived from an internal or external navigation receiver. Many 406Mhz ELTs also employ a homing transmitter that transmits on 121.50Mhz, which can be received by just about any aircraft that has a VHF com installed. When you purchase a 406Mhz ELT, you mail in a form with all of the data and it is entered into the computer for later reference if it is ever needed. Due to the fact 406Mhz ELTs are not in the com radio band and they only transmit for one-half second, you can't hear them like the old 121.50Mhz system. But again, the 406 system is designed to work with satellites and most have a 121.50Mhz transmitter aboard thus you could hear the distress signal via the 121.50Mhz if you were close enough.

The 406Mhz sounds great but how do you test it on the ground? Unlike the 121.50 ELT, you can't just turn the switch on, and listen to the ELT over the radio. The FAA calls out for testing the 121.50Mhz system under FAR 91.207 but I couldn't find any requirement for testing the 406Mhz system. If you can find one please drop me a note. To ground test this system you would have to either send it to the manufacturer or find an avionics shop with the proper test equipment which may be difficult.

406 ELTs offer navigation interface. Companies such as Artex sell an interface box that goes between your GPS/Loran and the 406Mhz ELT. Its function is to receive continuous information position updates for the aircraft GPS/Loran and translate it into the

proper format for use by the ELT. Once you crash, the ELT then transmits digitally the lat/long of the last known position to the Cospas/Sarsat satellite system. It doesn't take a rocket scientist to know how helpful the lat/long could be if you were lying on frozen Tundra, wounded and a couple of bears in the neighborhood. With the lat/long position transmitted to the satellites, Search and Rescue can get your location down to 100 meters and doesn't have to wait for a Doppler fix. Most 406Mhz ELT navigation interface boxes want to see an ARINC 429 bus.



I'd recommend any GPS you purchase today have a 429 data buss output; a lot of future products will require it. Plan ahead with any avionics you are thinking of purchasing. The question is; if 406Mhz ELTs are so good, why aren't aircraft owners purchasing them like hot cakes on a cold winter morning? Well, there are several reasons. Most avionics shops don't push the products because they don't fully understand the advantages of this ELT system nor do they have the proper equipment to test the product after installation. Another reason is the sad fact that safety is hard to sell. I can sell a farmer cow manure but trying to sell Safety to an aircraft owner is very difficult, they just don't want to spend money on something that doesn't flash numbers at them or doesn't make the machine go any faster. No doubt cost is the biggest factor. A 121.5/243Mhz ELT sell for around \$200.00 but a 406Mhz system sells in the \$3,500-7,000 range, depending on the options. 406Mhz ELTs for boats sell in the \$900.00 range but they don't have a "G" switch that activates the ELT when the aircraft hits the ground nor are they "FAA Approved" I'm not going to thump you over the head and say go out and purchase one but give it some serious thought. A 406Mhz ELT could be money well spent.



## HOW NEW IS NEW ?

Integrated Circuit about one quarter inch square.  
 Microwave hazards.  
 Solid State Emergency Flasher to keep in the car in case of emergency.  
 Electronic Car Rattle Tracer using a phono cartridge and solid state amplifier.  
 Build an electronic computer.  
 Earphone Echo Chamber using acoustic delay.  
 Solid State Car Ignition.  
 Article on the 80 meter amateur radio band.  
 Radio controlled lawn mower.

These subjects and more from the January 1960 issue of Electronics Illustrated Magazine.

Other subjects illustrated:

Half wave dipole.  
 Long wire.  
 Folded Dipole.  
 Coax and ladder feed line.  
 Novice station.  
 Oscilloscopes.  
 Tape Recorders.  
 1916 spark transmitter using Leyden jars as series capacitors to reduce the effective length of antennas.

**73 DE WA8MKH**

## SEPTEMBER IS:

**LABOR DAY**



**SEPT 3rd**

**AUTUM BEGINS SEPTEMBER 23**



## ++ National Preparedness Month is September ++

The following message is reprinted from an ARRL PR List mailing by PR Director Allen Pitts, W1AGP: I just got the quote; tool kit & quote; for it and the ARRL is



registered as a participant. Now the tool kit is actually a Word.doc file and rather large — over 2 megs. That's too big to attach here. So I chopped it down as much as I dared and posted it in a special place on the Hello-Radio site.

It is NOT listed on the index there. It's not for the public — but for us PIOs. You can see it at <http://www.hello-radio.org/2007NPM.doc> Note that the NPM is in caps! (or will not work)

The DHS folks went overboard this year and there is a lot of good things in there for you to use, cut, paste and fill-in. I hope that you will use the materials in your home area as a team with other agencies. (End quote.)

My reason for distributing this is to encourage all clubs to participate in National Preparedness Month. Why? First, it is a good thing to do. All of us should prepare ourselves for the inevitable disasters that come along every now and then. Second, DHS is the primary emergency response organization in the country. To be quite honest, we should do everything legitimate and possible to impress them with the professionalism of Amateur Radio and ARES in preparing for and responding to emergency situations.

**Good luck.**

ARRL Great Lakes Division

Director: James Weaver, K8JE

[k8je@arrl.org](mailto:k8je@arrl.org)



# September 2007

## W8NP Monthly Planner

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday																																																																																																	
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<p style="color: #800080; font-size: 1.2em;">2</p>	<p style="color: #800080; font-size: 1.2em;">3</p> <p style="color: red;">Labor Day</p>	<p style="color: #800080; font-size: 1.2em;">4</p> <p>Stark County ARES Net on 147.12 at 7:00 PM</p> <p>VE Test Session, Cuyahoga Falls ARC, 1900, Ctc: Bruce Ferry, 330-929-2766, Stow-Monroe Falls Public Library, Stow</p>	<p style="color: #800080; font-size: 1.2em;">5</p>	<p style="color: #800080; font-size: 1.2em;">6</p>	<p style="color: #800080; font-size: 1.2em;">7</p> <p>Massillon ARC Meeting, Massillon Senior Center, 8:00pm</p>	<p style="color: #800080; font-size: 1.2em;">8</p> <p>VE Test Session, Silvervreek ARC, 0930, Ctc: Barry Youmans, 330-925-1706, Rittman Public Library</p>																																																																																																	
<p style="color: #800080; font-size: 1.2em;">9</p> <p>Findlay Hamfest, Ctc Dean Calvin, 419-423-3402, Hancock County Fairgrounds</p>	<p style="color: #800080; font-size: 1.2em;">10</p>	<p style="color: #800080; font-size: 1.2em;">11</p> <p>Stark County ARES Net on 147.12 at 7:00 PM</p>	<p style="color: #800080; font-size: 1.2em;">12</p>	<p style="color: #800080; font-size: 1.2em;">13</p>	<p style="color: #800080; font-size: 1.2em;">14</p> <p>BD WA8HHO West Stark Info Net - 147.180 at 2000</p>	<p style="color: #800080; font-size: 1.2em;">15</p>																																																																																																	
<p style="color: #800080; font-size: 1.2em;">16</p>	<p style="color: #800080; font-size: 1.2em;">17</p>	<p style="color: #800080; font-size: 1.2em;">18</p> <p>Stark County ARES Net on 147.12 at 7:00 PM</p>	<p style="color: #800080; font-size: 1.2em;">19</p>	<p style="color: #800080; font-size: 1.2em;">20</p>	<p style="color: #800080; font-size: 1.2em;">21</p> <p>Great Lakes Division Convention, Ctc 216-524-7711, Sheraton Hotel, Independence, OH  West Stark Info Net - 147.180 at 2000</p>	<p style="color: #800080; font-size: 1.2em;">22</p> <p>BD N3JJT Great Lakes Division Convention, Ctc 216-524-7711, Sheraton Hotel, Independence, OH</p>																																																																																																	
<p style="color: #800080; font-size: 1.2em;">23</p> <p style="color: red;">Autumn begins</p> <p>Cleveland Hamfest and Computer Show, Ctc. 800-CLE-FEST</p>	<p style="color: #800080; font-size: 1.2em;">24</p> <p>BD K8RIC</p>	<p style="color: #800080; font-size: 1.2em;">25</p> <p>Stark County ARES Net on 147.12 at 7:00 PM</p>	<p style="color: #800080; font-size: 1.2em;">26</p>	<p style="color: #800080; font-size: 1.2em;">27</p>	<p style="color: #800080; font-size: 1.2em;">28</p> <p>West Stark Info Net - 147.180 at 2000</p>	<p style="color: #800080; font-size: 1.2em;">29</p> <p>Akron Marathon</p>																																																																																																	
<p style="color: #800080; font-size: 1.2em;">30</p>	<p>Upcoming Events: October 14 - Western New York Section Convention (Buffalo Hamfest) October 28 - Massillon Amateur Radio Club Hamfest!</p>																																																																																																						