St Clair Amateur Newsletter

July 2018

PO Box 94, Belleville, IL 62222

www.scarc.net

Club Repeaters: 147.120+ / 224.120- / 444.625+(pl 127.3) / 442.275+ (pl 127.3)

Club Officers

President – Randy Bastian KC9MZ (618) 235-1444 Cell (618) 973-6379 <u>kc9mz@arrl.net</u>

Vice Pres – Michael Petz KA9HNT (618) 688-2050 ka9hnt@gmail.com

Secretary –Tip Klamberg N9MVX (618) 670-1502 <u>n9mvx@yahoo.com</u>

Treasurer - Bob Thurgood WA9TUG (618) 239-9847 wa9tug@arrl.net

Sgt at Arms - Dan Campos KD9ADB (618) 236-1509 daniel.campos@charter.net

Activity Mgr- Jim Morgan KD9BLA <u>highonharmony@gmail.com</u>

VE Test Coordinator Randy Bastian, KC9MZ

Repeater Committee Gary Valentine, N8GIL, Randy Bastian, KC9MZ, John Sundstrom, WA0LIS emeritus

Emergency Comm Committee Curtis Williams, W5DTR

ARES/RACES net is a Directed Net and is normally conducted by Gene Kramer, WA9TZL (Tuesdays following the Club "onthe-air" meeting.)

Field Day 2018

We had a very successful FD with 30 visitors and participants! Thanks go out to our cook, Al, KC9TPD. And the antenna crew, Michael, KA9HNT, Tip, N9MVX, Dan, KD9ADB, and Jim, KD9FQC. Thanks to Rich, K7DZE, for the use of his great comm trailer.



Dean, K9JDW, readies his home brew satellite antenna for one of the FM birds. KC9MZ photo

K9GXU Field Report

Bonus Points:			CW	Digital	Phone	
100% Emergency pwer	· 300	QSOs	28	74	240	
Media Publicity	100	Points	56	148	240	Total 888
Public Location	100					
PIO Table	100					
Natural pwer QSOs	100					
Web Submission	50					
Educational activity	100					
Social Media	100					
Safety Officer	100					
Total	1,050	Total s	core	1,938		

Meeting Date, Time and Location: This month's meeting will be on July 26th at the Belleville Fire House #4. The meeting starts at 8:00PM. Many start to gather at 7:30PM. There will not be testing this month.

New Members: New applications should be submitted to the Sgt. at Arms. Applications will be vetted by the Sgt. at Arms and will be brought forward for a vote at the next monthly meeting after being submitted. We look forward to meeting/greeting any new member because to grow our club, we must find people that love to talk (should not be too hard) and that would love to be on the radio. So putting the two together can make a dedicated enthusiast for HAM Radio. We welcome all new members and prospective members and thank them for their interest in Ham Radio.

Thank You to Harry Church, WOKXP, for his very generous donation to the K9GXU repeater fund.



K9GXU Repeater visit: L-R Larry, K9LWW; Wayne, KC9ZYQ; Mark, KA9SXP; Gary, N8GIL; Michael, KA9HNT;Darla, KD9JOY; Rich, K7DZE; Harley, WB7PMZ; Dean, K9JDW; Curtis, W5DTRKC9MZ Photo

ILQP PORTABLE ANTENNA by John Sundstrom WA0LIS

An antenna design was sought that would be ideal for use at portable station locations, especially county lines and corners. Several of these antennas could be assembled and would be made available to operators that could then be recruited to operate on high scoring county lines and corners. A review of the available antenna books revealed one antenna that is close to ideal for this purpose. Look up the article in footnote 1 for more details.

Performance parameters considered were as follows:

- 1. Bands of interest include HF bands from 160m through 10m as well as 2 meter fm. The portable antenna design discussed further below covers 80m, 40m, 20m, and 10m. The feed point impedance is too high to match on 15m but it will match on 10m. It is assumed that the operator will provide a separate antenna for 2m and 2m will not be discussed further here. The big gun contesters probably will argue 15m is useful. It is, but most QSO's are made on 80, 40, and 20. That is three bands to clean out in just 8 hours. WARC bands are not used.
- 2. Good signal performance is required. This means a near full length dipole or inverted vee. Horizontal polarization is preferred due to less noise and higher takeoff angles. There is emphasis on good coverage of Illinois. Illinois is a maximum of about 425 miles from the northeast corner to Ohio river. This means an antenna close to the Near Vertical Incident Signal design is better than a low angle radiator like a vertical.
- 3. SWR is a problem. It is very desirable to have an antenna that is broadbanded enough to allow operation without the use of an external tuner. Most current rigs have an internal tuner these days, but these are only able to tune out about 3:1 SWR. The antenna should be able to keep the SWR down to this level. This is a tall order as 80m-75m is a very wide band.
- 4. Of course the antenna has to be simple, rugged, waterproof and easy to put up, light weight, and capable of handling at least 100 watts.
- 5. And last, but certainly not least, the antenna must not cost more than \$100.

The chosen design is an off center fed dipole. The base dipole is an 80 meter full length fed at the point where 1/3 of the antenna is on one side of the feed point and the remaining 2/3 of the length is on the other side. This means wires of 45 feet and 90 feet in length. As built, the short wire was 45 feet two inches, and the long wire was 91 feet seven inches. This will allow us to tune it a little without having to solder on more wire. Feed point impedance is about 200 ohms, so a four-to-one balun is used to couple the antenna to a 50 ohm coax. The coax is rg-8x. A choke made of 7 turns of the coax with a 7 inch ID is used to further reduce rf currents on the outside of the coax. As built, there is about 67 feet of free coax to get to the rig. The 4:1 balun is made from a T200-2 powdered iron toroid with 17 bifilar turns of #16 enameled wire. Ratings for the balun are about 300 watts matched and less if mismatched. The balun is enclosed in a junction box made of gray plastic normally used outdoors with gray PVC conduit. The box will be waterproofed before use outside. The wire used for the elements is #14 tin plated copper in PVC insulation.

Recommendations include having the feed point at a height of 30 feet or near that level, especially for the 80 meter band. The 90 foot wire should drop to about 10 feet at the insulator end. The angle between the wires should be 120 degrees or slightly more. Because Illinois is much farther from north to south than from east to west, the wire should be oriented from east to west. Following these recommendations should provide best results, however, one must do what is necessary to get the antenna up. The antenna can be hung from a tree or from a pole. It should be kept away from large metal objects.

A prototype antenna was built based on the description above. The first try had the coax choke at the antenna end of the coax cable. The antenna did not like this for some reason. When the antenna was tried with the coax choke at the transceiver end of the cable, it worked fine. The antenna analyzer indicated the resonances were low in frequency, so 10 inches of wire was removed from the short side and 18 inches of wire were removed from the long side. The analyzer now indicated the antenna was working as hoped. On July 8 with the sun shining and a temperature in the 80's, the antenna was actually tried with a real rig attached. The antenna was up 25 feet at the top and just under 10 feet at the ends with the wires running east-west. The rig was a Kenwood TS-570s with an internal tuner and swr meter.

SWR results exceeded my expectations and are shown in the table below. Note that 30 meters and 15 meters were tried too and no match was found on these bands:

FREQUENCY	SWR WITH	SWR WITHOUT
IN MHZ	TUNER	TUNER
28.050	<1.1	<1.1
28.450	<1.1	<1.1
14.050	<1.1	<1,1
14.330	<1.1	1.2
7.050	<1.1	1.3
7.280	<1.1	2.7
3.540	<1.1	2.7
3.990	<1.1	<1.1

Azimuth patterns should be very similar to the patterns for center fed half wave dipoles on 80 and 20 meters. These patterns are bilobal like a figure 8 with the wire passing horizontally through the pattern minimum. On 40 meters, the pattern has six lobes with three on each side of the wire. These lobes and nulls are reduced by the drooping of the wire ends. The patterns should be fine with the exception of the direction parallel to the wire elements.

Final comments: Cost for new parts would be about \$65 depending what is paid for the parts.

This antenna weighs more than expected and may stress the support pole.

1. John Belrose VE2CV and Peter Bouliane VE3KLO "The Off Center-fed Dipole Revisited: a Broadband Multiband Antenna," More Wire Antenna Classics Volume, ARRL Publications, 2 fourth printing 2007 pp 2-1 to 2-7



Bob, WA9TUG, showing off his 2 meter beam he build from the "Club Project Yagi" plans by WA5VJB that I talked about a fewmeeting ago. Bob said it was easy to build and the plans are also in the 2016 ARRL Handbook.KC9MZ Photo

Here are some short thoughts:

Don't forget to check in to Larry's, K9LWW, "Good Morning" drive time (7 – 8 am) net on our 2 meter repeater. Stop in and say HI!

The Western Illinois Amateur Radio Club (ILQP) has announced "The Illinois Bicentennial Challenge". This special event will start August 26th and end December 3rd. Here is a link if you are interested: <u>http://www.w9awe.org/Challenge.html</u>

I've attached a page to this SCAN that has some ideas on what is needed (or thought we need) in a backup repeater. Check it out and share your thoughts with us.

Hope to see you at the meeting or on the air.

Remember to send anything you might have for SCAN to <u>kc9mz@arrl.net</u> Thanks to John, WA0LIS, and Bob, WA9TUG, for providing us material this month.

73 es gud dx,

Randy, KC9MZ

P.S. What do you get when you cross a centipede with a parakeet?

After the Zeros Beater's Hamfest some of us came up with a few ideas in what was needed in new repeater. (Larry, K9LWW; Michael, KA9HNT; Dean, K9JDW; Randy, KC9MZ)

All agreed the first priority is to backup the current 2 meter repeater that is used for ARES, SKYWARN, On the Air Club Meeting, and general use.

1. Backup or replace the current 147.12 MHz machine – analog FM.

- A. Full backup;
 New Site
 New repeater
 New controller
 New rack
 New power supply and backup battery
 New duplexers
 New tower
 New antenna
 Some hardware to detect primary system failure and then make the backup system the primary.
 B. Hot backup;
 - New repeater New controller Some hardware to detect primary system failure and then switch the duplexers and antenna to the backup
- C. Cold backup;

New repeater New controller Manual switch over

2. Do we want an analog and digital machine like the Yaesu? Or should we put up a separate digital repeater on 440 MHz?

3. How to handle the 444.265 link input.



July 24, 2018

Your Illinois Section News is located at http://www.arrl.org/Groups/view/illinois

Update on Logbook of the World and CQ Awards (4/18)

ARRL and CQ Magazine Announce Launch of CQ's WAZ Award Support on ARRL's Logbook of the World

Newington, CT and Hicksville, NY – April 2, 2018 Officials from CQ magazine and ARRL, The national association for Amateur Radio®, are excited to announce the launch of support for CQ magazine's Worked All Zones (WAZ) award program on ARRL's Logbook of the World (LoTW) system, effective Monday, April 2, at 10:00 a.m. EDT (14:00 UTC).

The goal of the project was to create the proper technical support system to enable amateur radio operators to submit LoTW confirmations for WAZ credit and that has been accomplished, say CQ and ARRL officials.

"We are very pleased that participants in CQ's WAZ award program will now be able to use their LoTW confirmations for award credit," said CQ Editor Rich Moseson, W2VU. "CQ WPX Award participants have found it very helpful and we are sure it will be equally helpful for those pursuing WAZ and its many variations."

ARRL First Vice President Greg Widin, K0GW, concurred. "Users of LoTW have been telling us for some time that they would like to use QSLs from LoTW to apply for the WAZ award. They will now be able to select confirmations to be used for WAZ credit."

Beta testing for bringing CQ magazine's WAZ award program into ARRL's LoTW system had been underway since mid-December. Any problems in the implementation discovered by testers were corrected by the technical support team. Also, the documentation has been improved by feedback from the testers. At the same time, each LoTW user was given an additional WAZ account. Standard LoTW credit fees and separate CQ award fees will apply.

Logbook of the World is ARRL's electronic confirmation system for amateur radio contacts. It

provides a confirmation when both stations in a contact submit their logs to the system and a match between the logs is confirmed. LoTW has supported the CQ WPX Award program since 2012.

"The cross-over between Amateur Radio operators and pilots, aviation enthusiasts, and air show attendees has a strong correlation," said ARRL Central Division Director Kermit Carlson, W9XA, who is part of the volunteer team organizing the ham radio exhibit at AirVenture. "Attendees include many licensed and prospective Amateur Radio operators."

ARRL's exhibit will promote Amateur Radio to newcomers and inform all attendees of the similarly diverse technology and innovation enjoyed by both hams and pilots.

"Ham pilots are doing all sorts of things from the sky, including long-distance HF communications, aircraft tracking using APRS beacons, and search and rescue," Carlson said. "Developing the capability to communicate from your aircraft to a ham on the ground is also fun!"

ARRL has posted a <u>short survey</u> that invites pilots who are radio amateurs to share their ideas for exhibiting at EAA AirVenture 2018. The ARRL display will build upon existing ham radio demonstrations at the show, including EAA Amateur Radio Special Event station W9ZL, organized annually by the Fox Cities Amateur Radio Club in Appleton, Wisconsin, and set up at the Pioneer Airport airstrip in Oshkosh. W9ZL will be on the air throughout the week of the Oshkosh air show.

Amateur Radio Month in Illinois

Toward the end of May, Governor Rauner will be issuing a proclamation designating June as Amateur Radio Month in Illinois. I will be sending you a PDF of the document as soon as it is sent to me.

From a Public Information standpoint, the proclamation is a great news "hook" that you can use to reach out to media and community organizations in your area to tell them about your club's Field Day plans and about your club and members.

You may have been among those who received an e-mail from me in January (directed primarily club Public Information Officers or Publicity chairs) that sought specific ideas/experiences that helped promote club activities.

Below are some of the ideas ARRL-affiliated clubs across Illinois shared to help all of us be more effective in telling the public about amateur radio.

For Field Day:

If you're trying to draw the public to Field Day, make sure you send an announcement to that effect to your local newspapers, television & radio stations and on-line community calendars (including public libraries and area colleges and universities). Some publications and stations prefer an e-mail, others a press release or phone call. Check in advance. Ask their preferences *and* deadlines for providing information.

A quick flyer can be sent to libraries, schools, and community/supermarket bulletin boards for posting Field Day and Club event announcements.

Field Day can offer some excellent television and newspaper photo ops. Be sure to contact the assignment editors and the photo editors at least 10 days in advance and include a brief description of what you will be doing that would make a good visual (putting up a big antenna, talking on the radio, etc.).

Create a "Fact Sheet" and make it available to the reporter or photographer when they show up. Make sure it that explains Field Day and how, what, when, where, and why your club members are participating in this nationwide emergency communications exercise.

If there is a local radio or television morning talk show in your area, contact the guest coordinator or host by mail, e-mail, or phone to see if they would like to interview you or someone from your club to talk about Field Day. Give yourself time to arrange this. Guests are often booked weeks in advance. Be sure to send the booker/host your Fact Sheet.

For Field Day and in the weeks leading up to it, look for possible human interest stories that might spark a newspaper story or television interview to tie into Field Day.

In this category might be:

- the youngest licensed ham who will be getting on the air.
- the oldest licensed ham who will be getting on the air.
- Scouts working toward their amateur radio merit badge.
- How your club uses what they do on Field Day to interact with the community in emergencies.
- · Club members who have traveled to other areas to help with emergency communications.
- School ham clubs who are participating with your club.

Promoting what you do as an organization doesn't stop with the media.

June could be a great time to have representatives of your club speak (and show a powerpoint) about what you do on Field Day and throughout the year in presentations to community organizations like civic groups, service groups, scouts, business groups, libraries, and religious organizations.

If you have a shopping mall nearby, ask permission to set up a working display that promotes Field Day, your club, and ham radio. Flyers, ARRL booklets, even photo display boards may bring in new members and a greater awareness of your club. You may want to partner with other community organizations such as the Red Cross, local hospitals or the National Weather Service.

You might also ask your local officials to also proclaim Amateur Radio Month in your community, a great photo op!

These are just some of the ideas that have come my way. As we head into June, I'd like to share your ideas with other public information officers, publicity chairs and officers in the Section. Please feel free to drop me an e-mail at <u>KD9BAU@gmail.com</u>.

Vicky Whitaker, KD9BAU. ARRL Illinois Section Public Information Coordinator

Pearl Technology STEM Camp, June 18-22, 2018

The STEM Academy is sponsored and put on by Pearl Technology, with the assistance of the University of Illinois Extension, Richwoods Township, Goodwill Industries of Central Illinois, Peoria Area Amateur Radio Club, Peoria Heights High School, volunteer Caterpillar engineers, and ISS Above Software.

Twenty-five middle school students will spend June 18-22 attending the STEM Academy held at Goodwill Commons, where they will learn about space and radio communications. The students will build Raspberry Pi computers that stream live video from the ISS. Students will also participate in a high-altitude balloon launch by building the payload with student experiments and then, use radio telemetry to track the balloon to near-space. The highlight of the academy will be when students communicate directly with astronauts on the International Space Station. The ISS contact itself will be open to students of all ages in the local area. Stay tuned for additional information in the coming weeks.

Fritz Bock WD9FMB

The Western IL ARC invites all amateurs to a special event to celebrate 2018 as the Bicentennial for the State of Illinois.

To showcase Illinois amateurs during 2018, WIARC, in addition to the ILQP, proposes:

http://www.w9awe.org/Challenge.html

WIARC will coordinate with other IL stations as "Activators" to put all 102 counties on the air multiple times during the period August 26, 2018 through December 3, 2018 (including October 21, the day of the ILQP).

Both during ILQP and during the rest of this period, activations will be coordinated through the ILQP Reflector <u>http://www.w9awe.org/ILQP%20Reflector.html</u>. "Activators" are encouraged to post plans on the reflector, and a weekly update of "Planned Operations" will be maintained on the WIARC page (link to follow).

"Activators" will upload Cabrillo or Excel log files (with the required QSO information: template available at <u>http://www.w9awe.org/ILQP.html</u>. Check the "Sample Log" tab at the bottom of the page.) Outside of the ILQP period, "Activators" are encouraged to append their calls with "/IL200" to indicate they will be uploading their logs for the event.

"Chasers" will attempt to contact all 102 counties during this period and will submit contact information on either the Excel template or .txt template provided on the ILQP website (link to follow). Both "Activator" and "Chaser" logs should be sent as attachments to <u>n9jf@arrl.net</u> no later than December 10, 2018.

Chasers who successfully contact all 102 counties will receive a special Bicentennial Challenge certificate.

Reach out to your membership to see who would be willing, during the period August 26, 2018 through December 3, 2018, to be "Activator Stations" for the Bicentennial Challenge detailed in the above link.

While home station activations are welcomed, we are going to need operators willing to do portable or mobile activations in order to make less-populated counties available multiple times. Activations at various times of the day and week and on various bands and modes will be needed.

Only by involving a large number of amateurs from around the state can we make it reasonably possible for stations to achieve working all 102 counties! Contacts during the 2018 ILQP (Oct 21) will automatically be registered from submitted logs. If you have questions or comments, please contact the club through <u>n9jf@arrl.net</u>.

See <u>https://illinois200.com/events/the-illinois-bicentennial-challange-award</u>.

73, Jim N9JF

<u>Affiliated Club Registration and Renewal</u> - Noah Sevcik K9BZY has set up a link to allow one place for clubs to get registered. There is a link <u>here</u> to do the paperwork.

<u>2016 Illinois Interoperability Field Operations Guide</u> - This manual is updated every two years and is available for download in the files section of the Section News.

Cabinet Members

SM/AD--Ron Morgan AD9I ASM--Mike Nowack NA9Q ASM--Scott DeSantis KB9VRW ASM/STM Roy R Eades KA9MZJ ASM--Sean Travis W9STR SEC--Fritz Bock WD9FMB OOC/AD--Tim Childers K9CQ PIC -- Vicky Whitaker KD9BAU SGL -- Charlie Richey K9DUE ACC -- Noah Sevcik, K9BZY TC--John Dinnella WA9IL ASEC--Robert Littler W9DSR ASEC--Danny Pease NG9R ASEC--Garret Robinson KC9FVK ASEC--Pat Ryan KC6VVT ASEC Pat Stowell, N9PN ASEC--Curtis Williams W5DTR

District Emergency Coordinators:

District 2--<u>Lloyd Sherman KB9APW</u>, District 3--<u>Debby Gray, WX9VOR</u> (including District 4 Lake & Dupage Counties) District 4--<u>Robert (Bob) Langsfeld WB9TZC</u> ADEC for Cook County District 6--District 7--<u>Josh Kittle, N9WEW</u>, District 8--<u>Curtis Williams W5DTR, ADEC Chris Pixton KC9EIZ</u> District 9--<u>Jim Hudson WB9QPM</u>, District 11--<u>Bruce Talley WA9APQ</u>

Newsletter Topics

- ==> Section Manager Report
- ==> Net Reports
- ==> Illiniois Club Websites
- ==> Club Presentations

==> Section Manager Report

Illinois Sideband Net webpage

Illinois Nets This is a link to the open Amateur Nets

==> Club Presentations

Impedance Matching by Ward Silver



Nothing new posted as of July 24, 2018

APRIL 2018

MISSOURI SECTION NEWS

Cecil Higgins, AC0HA

Hello All

I would like to announce that Dale Bagley K0KY, will be stepping down as the editor of our section news. His presence will be sorely missed by all and certainly be me. Not only do I have great respect for Dale I consider him my friend and mentor. Dale will have a spot any time he wants one. We wish you all the best and good health Dale.

I just got back from the Ozarkscon QRP Conference held in Branson MO at the Stone Castle Hotel and Conference Center. I must say it continues to grow and get better with each passing year. The four corners group are the organizers of the convention and do one of the best jobs I've seen. There were forums put on by several speakers including Bob Heil with his presentation on the Pine Board Project and more. Classes to build several different kinds of kits and kit radios were put on throughout the 2 day conference. The atmosphere was fun and a lot of new projects will, without a doubt, be on the air all around the U.S. A big hand to all those that worked so hard to make the conference happen.

I hope everyone is enjoying the somewhat warmer weather and ask that we keep an eye to the sky. Severe weather season is on us.

APRIL HAMFESTS

The Ararat Shrine Hambash 2018 will be held April 21st at the Ararat Shrine Event Center 5100 Ararat Drive in Kansas City, MO 64101 For the latest information about the Hambash 2018, visit the Website: <u>http://www.hambash.com</u>. The Hambash 2018 contact person is Chester Hallberg, KØTCB 4830 West 78th Street Prairie Village, KS 66208. His Phone: 208-598-0094 and Email: <u>chesterh4830@sbcglobal.net</u>. The Talk-In will be on 145.130 (no PL tone)

AFFILIATED CLUB NEWS KEITH HAYE, WEOG, ACC

The Platte County Amateur Radio Group will be holding their annual cookout for for members and others in the Platte County and surrounding areas. The cookout is potluck, with the hamburgers, hotdogs, and buns provided by the PCARG. They will meet at the Northland Regional Ambulance District (NRAD) office located at 1000 Platte Falls Rd, Platte City, MO. The cookout is Saturday April 28th 11:00-3:00. We are offering an ARRL test session that morning before the cookout from 9:30-10:45. Testing for Technician, and General or Extra class upgrades available. We ask that you RSVP for testing to kc0ysy@gmail.com.

The Macon County Amateur Club President, Larry Ballew, AB0HP, has announced an extensive program of activities and projects for 2018. The MCARC will be refurbishing the Clubs Emergency Tower Trailer that is used extensively throughout the year during Field Day, The Lester Dent Special Event and several other operating opportunities. The MCARC, holds a Winter and Fall Club Operating Contest-QSO Party to encourage members to get on the air and have some fun.

Tom Hendrix, WA0E, <u>wa0e@arrl.net</u>, announced that the Booneville Radio Club will be hosting a Free Tailgate swap for all Ham radio enthusiasts Saturday, April 14 at 8 AM - 12 PM CDT. Hams are welcome to bring your old or new gear to sell or trade. Or just come by and see what equipment you might want to purchase. We will be monitoring our repeater 147.360 + W0BRC, if you need directions. This is our first swap meet and, hopefully, it will continue each year. The location of the swap meet is Brady Show Grounds Boonville, Missouri 65233 and this is the same location as Steam Engine show which is held each year, and is at Exit 111 off of I-70 west of Columbia.

SECTION ARES REPORT FOR FEBRUARY 2018

JEFF YOUNG, KB3HF, SEC.

- Total # ARES Members 1307
- Number of Drills, Testing, Etc. 256
- Number of Ham Hours 2,593.59
- Number of Public Service Events 16
- Number of Public Service Hours 381

Number of Emergency Operations	9
Number of Ham hours Emer. Op.	42
Number of Skywarn Ops this month	n 20
Number of Skywarn Hours	110
Total ARES Operations this month	301
Total Ham Hours	3130.59

9 out of 9 districts reporting

SECTION TRAFFIC REPORTS MARCH 2018

LARRY WILSON, KORWL, STM

MO SECTION Net (MON), 30/177/44, net mngr K9ZTV

M0 TRAFFIC NET, 31 /1586/162 /, net mngr K0RWL

MESN,4/218/1, net mngr KD0CNC

LEBANON ARES, 4/51/1, net mngr KF4MXF

CALLAWAY (CARL) CO, 4/73/0/, net mngr KC0LYA

BOONE (CMRA) CO, 4/68/0, net mngr KC0HSB

JACKSON CO, 4 /84/0, net mngr K0UAA

MACON CO, 4/52/0, net mngr K0KY

ROLLA (RRARS), 31/350/3, net mngr KE0ARR

TEXAS CO, 31/525/24, net mngr N0TPE

BENTON CO, 4/50/3, net mngr KD0CNC

MID-MO, 4/73/0, net mngr WW0G

K. C. ARES DIGITAL, 4/44/12 net mngr K0KEX

FRANKLIN CO, 6/57/6, n et mngr KN0NWG

NORTHLAND ARES VOICE, 4/96/1, net mngr K0KEX

TRI-COUNTY, 4/51/6, net mngr N0AUY

DISTRICT E, 9/52/1, net mngr NORIC

HANNIBAL ARES, 5/120/3 net mngr KD0HHN

JACKSON CO ARES DIG. 4/30/4 net mngr N0AJI

KD0HHN-LIAISON, 1/1/212, net mngr KD0HHN

HOWARD CO, 4/31/0, net mngr WD6BGN

WARRCI, 4/153/1, net mngr KB0HV

MONTGOMERY TRAINING, 4/26/1, net mngrK2HT

KC NORTH ARES DMR, 4/45/0, net mngr KA0SXY

FSQcall-MO 5/64/5, net mngr KA0OTL

CASS CO, 3/15/0, net mngr KD0RSX

ST.LOUIS METRO, 8/88/6, net mngr KB0H

TOTALS 224/4210/496