

PRINTED CIRCUIT

FEBRUARY 2003

Newsletter of the Joplin Amateur Radio Club

Vol. 13 Issue No. 2

KØETC'S EXPERIENCE WITH THE OZARK 80 TRANSCEIVER

About a month ago Doug KI6DS, a honcho in NorCal, the huge world-wide QRP group based in California, sent all members of the Four State QRP group a free 80 meter transceiver



circuit has been around for a while known as the Pixie. To see the schematic, do a net search for "Pixie" or "Pixie2". It was renamed the Ozark 80 by our local group (<http://www.w0ch.com/fsqrp/>).

The transceiver is a demonstration of how a very few parts can be made into a functioning rig. The complete transceiver contains only 2 transistors and an audio IC and a few other small parts. No one would expect it to perform like a multi-thousand dollar rig and of course it doesn't. But it is amazing that you can actually hear and work stations with it.

The transmitter is crystal controlled and consists of an oscillator and a final amp running about 400 milliwatts output depending on the voltage of the power supply.

The transmitter oscillator stage runs all the time because it is also the L.O. (local oscillator) for the direct conversion receiver. The final amp transistor does

double duty as the receiver mixer when in receive mode. The audio from this mixer is then sent through a LM386 audio IC.

Just add antenna, power, key, and headphones and you are on the air.

Simple direct conversion receivers like this one have some problems. Since there is no way to filter out the opposite sideband, stations on BOTH sides of the L.O. will be heard at the same time. Another problem is that the L.O. radiates in the receive mode. This radiation can be picked up by nearby AC power supplies, modulated by the diode rectifiers, and re-radiated to be picked up by the receiver as hum. I had to run the rig on a battery and turn off my Astron power supply that was 5 feet away to stop a hum problem.

The major shortcoming is the inability to tune around in frequency. This seriously limits operating convenience and one must wait until a station is heard in the

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FROM THE PRESIDENT'S SHACK

I am excited about being your newly elected President of the JARC. I will work hard to foster a team effort to help our club grow. Ham radio activities will spark interest in our hobby and encourage more people to become active. Here I will present a few examples for the club to consider.

First, let's have organized meetings. I will prepare an agenda beforehand to keep us on track. If you have something to present, please let me know ahead of time in writing, and the club officers will recognize you at the meeting. Discussions will be thoughtful and relevant. Meetings will be organized, and all comments welcome. My goal is to make every meeting productive, and that members will be proud of the club and amateur radio.

Second, poor operating procedure needs to be addressed. I want to foster elmering and education within our hobby so that our operating skills are the best possible. This will build respect for ham radio. Would you like to see amateur radio regain the respect that it enjoyed in the past?

Third and building on the previous point, are you pleased with the current status of amateur radio? Are you proud of amateur radio today compared to a few years back? Lack of communication and working together are two issues we must consider. Would the club want to see more technical, operating, or some other activities? Surely all members won't agree completely on all issues, but we do need to work together on common goals. Let's forget about frivolous disagreements in the past

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VHF/UHF Report

With little or no VHF openings to report this month, I will take this time to describe band plans, equipment and expected propagation on our six meter band.

Six meters, the *magic band*, is one band you will enjoy operating as it is full of surprises. Although one will tune the band and hear nothing many times, a good station on SSB or CW can always make contacts up to 150 miles.

So what is a good station? What we call a good station probably will operate at a minimum of 150 watts and have a 3 element Yagi at least 30 feet in the air. When conditions are right, this type of a station can work the world. You will find SSB, CW and some AM activity in the first 500 kHz of the band between 50.0 and 50.5 MHz, however the first 100 kHz is restricted to *only* CW operation.

According to the ARRL band plan, 50.100 to 50.125 MHz should be used only for making DX contacts outside of US and Canada. This keeps this part of the band clear so that you will be able to hear weaker DX stations. 50.125 MHz is the domestic calling frequency and long rag chews stateside are discouraged here. You should move up the band after establishing contact. You will find that 50.400 MHz is generally used for AM operation but very little is heard on 6 nowadays. Above 50.5 MHz is mostly used for digital modes and FM, I will discuss that later.

The main type of propagation used on the 50 MHz band is sporadic E-skip, and F2 layer skip during the peak years of the 11 year solar cycle. To show an example what has happened in the last year, we had almost daily openings to Europe last winter when we were on the peak of the 11 year cycle. This year however, almost none is heard except a few days from the east coast. The solar flux is averaging 50 points lower than at the same time last year, and it will continue to decline in the

(Continued on page 5)

HAMFEST

During January, a lot has been accomplished in terms of advertising. First, David Hill, Jim Scott, Dale Bagley, and Wayne Graham have distributed hamfest flyers to various hamfests and other ham gatherings. This complements the commercial vendors doing the same. Second, Jim Scott produced an excellent ad for the March and April issues of QST; he will be working on one for the April issue of CQ Magazine. Third, we will listed in the free QST and CQ magazines in the hamfest section. Furthermore, we will have a banner listing on CQ's website.

On January 18, a group of club members and families helped label over 3500 flyers; this was done in about five hours. The volunteers even folded some flyers when they ran out tri-folded copies! This was excellent team work. A special thank you goes to Ray and Brigid Brown, Dave Ferguson, Bill Johnson, Mark Mitchelson, Jim Scott, and John Tudenham. The effort to reduce duplicate labels and target appropriate zip codes lies with Jim Johannes. I worked with Jim on this, and he helped reduce the amount time everyone worked. Thank you Jim.

I'd like to remind club members to continue spreading the word. April 4-5 is right around the corner. Please volunteer your time; any amount you can give is appreciated. Team leaders are listed in a previous edition of the Printed Circuit, but feel free to call me (206-2339) or email me at westham62@hotmail.com if you would like to volunteer.

In closing, Jim Johannes informed me as of Saturday, 18 January, we have our *first* registration. I am looking forward to a great hamfest.

73
J C Alexander
K5DMI
2003 JARC Hamfest Chairman

ARES NEWS AND EVENT SCHEDULE

This month there has been no real activity within the Local ARES organization. December was a different story, with a late fall storm plowing through the Jasper and Barton county areas, leaving a path of destruction with several homes destroyed. Although the hams were there for the initial storm spotting, later at about 3:30 AM, the Red Cross called for communication. There was an emergency Red Cross shelter being set up at Memorial Hall in Lamar MO.

Several were called out to assist in the aftermath, after the call came in from the Red Cross. K5DMI and NØZSQ went to the Red Cross Chapter in Joplin to set up a station and antenna to use as voice command center and a simplex talk around frequency. KCØBUP was sent to a Red Cross shelter that was being set up at the Memorial hall in Lamar.

A mode used for the first time within the Jasper County ARES was "slow scan tv." With it, we were able to send pictures of the front line damage back to the chapter. By daybreak, KGØVR, and KIØPP were on the scene taking pictures then relaying them via SSTV, while NØKMP did voice relay. This enabled chapter to determine how to deploy the disaster response teams. Additional help was supplied by WØJRP, WD6FIC, and NØZPD.

The Red Cross disaster director, Louis Mc Reynolds, & Nancy Brown both reported that they were extremely impressed, and that the images would be used in a SEMA report. This disaster demonstrated that slow scan tv can be used for this purpose.

I want to let those who participated in this emergency know how much your services are appreciated.

In other news, we wish to welcome Don Moore as the new SEC. Don will be replacing the past SEC, Patrick Boyle. I will meet Dan in person, at the Communication Conference at Tan-Tar-A,

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Six Meters Open to Florida?

Here is a story that I would like to share with you which took place in Amarillo around 1963.

Kris K5IBS, a local ham in Amarillo, TX had retired and moved to Florida. He had a problem in selling his house so he had to make a quick trip back to Amarillo. He had a Six meter Mobile rig in his car and was coming in from the SE on highway 287. About 35 miles out he contacted a local ham in Amarillo, WA5DHF. He told him he was headed for Amarillo and told WA5DHF to call his friend K5FVH and tell him the band was open for skip to Florida, and to turn the beam Southeast.

Bert, K5FVH, contacted K5IBS and said that he was surprised to hear him because no *other* skip signals were coming through. Of course, K5IBS being mobile and over 30 miles out, had a lot of fade on his signal and sounded like a real skip signal. As K5FVH continued the contact with K5IBS, the signal kept getting stronger. Thinking the band conditions were getting better, Bert announced to Kris "Now your over S9!"

Finally, when the signal from K5IBS hit +60dB over 9, K5FVH thought something was wrong because his skip signal couldn't be that strong. He asked K5IBS "Kris, where are you located?"

K5IBS, laughing, said "I just pulled in front of your house. I am real DX!"

All three of these hams were good friends of mine when I lived in Amarillo, TX. Both K5IBS and K5FVH are now silent keys. WA5DHF is now WAØSLM, retired and now living near Nashville, TN. We all belonged to the **Panhandle VHF Pioneers**, a VHF club of mostly 6 meter hams.

73 John WØJRP

JOHN TÜDENHAM, WØJRP, IS A REGULAR CONTRIBUTOR TO THE PRINTED CIRCUIT, AND HE OFTEN CAN BE FOUND TELLING A STORY SUCH AS THIS ONE, AT THE MEETINGS AND AT BREAKFASTS. ED.

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and foster group participation.

Fourth, we cannot expect one person to "do everything." We need members willing to help the club carry out various functions, such as Field Day, program presentations, and the like. There are plenty of jobs for everyone to participate.

In closing, what are your thoughts about our hobby? What are you willing to do strengthen the club and our hobby? I represent you, the membership, and am open to your comments. I hope to see you at the next meeting.

73 de NØKMP

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in February. This Conference will be attended by Public Service personnel as well as Emergency Management Personnel from all over the State. Emergency Coordinators & District EC's from all through the state will be attending. After this conference I will present a report to the JARC at the last meeting in February.

Andy Gabbert, KAØTUD
Jasper County/Tri-State ARES EC

The link to the conference agenda:
www.sema.state.mo.us/CrisisCommConf2003.htm

The next State-wide Tornado Drill is scheduled for March 12th, 2003.

The Jasper County/Tri-States ARES participates in drills regularly with other area agencies in order to supply a coordinated communications backbone in case of an emergency. All area hams are encouraged to join ARES and become familiar with procedures.

Regular ARES announcements are made weekly at 19:30 on the JARC Monday night net, and at regular JARC meetings. Andy can be reached at 417-673-8371, on the air, or email at ka0tud@arri.net

Be sure to visit the new ARES website at:
<http://www.qsl.net/jcmares/index.html>

THE ZERO METER BEAM

The other evening I was looking through an old 73 magazine and ran across an article about constructing a Zero meter beam. In fact, I found out that all hams, regardless of class, were allowed to operate Zero meters.

This band has lots of advantages. They say there is no QRM problem. To construct the beam I found it very simple as the elements and boom were all the same length. To convert a rig for Zero meters, it is an easy job, just remove the coils. I understand to grind a crystal for the zero band is impossible. I learned that a beam antenna was very cheap to construct due to the wavelength. The author of the article commented that he asked if any tubes or transistors would operate at that frequency, but no one seemed to know. He was also told that the band may be shared with CBers, but know one knew if it actually had been since they had never heard a signal.

They did say that this was a good band for an apartment dweller or one with restricted antenna laws since no one could ever see your antenna. They also said you would be wasting your money to buy expensive coax, because feed line was not needed, not even a rotor to turn your beam. Finally, they said you would not have to worry about RFI on that frequency.

This all sounds good, but now I wonder if anyone has made a contact on that band, and is there any commercial equipment available.

John WØJRP

COAX AVAILABLE AT COST TO CLUB MEMBERS

RG8X - \$0.31/ft.
LMR400 - \$0.71/ft.

Contact Jim NØZSQ at the meetings.

WHAT THE AMATEUR RADIO "Q-SIGNALS" MEAN

The use of "Q-Signals" started with telegraphers and has been around for over a century. The signals are used to **abbreviate** a detailed question or answer. The code, as agreed upon by the International Telecommunication Union, is used worldwide on **radiotelegraph**, and is prescribed for use on **all types** of communications, military and non-military.

The meanings assigned to the Q-code abbreviations may be amplified or completed by the addition of other groups, call signs, place names, figures, numbers, etc. Q-code abbreviations are given the form of a question when followed by a question mark. When an abbreviation is used as a question and is followed by additional or complementary information, the question mark should follow this information.

Shown here is the list supplied by ARRL Headquarters for use by the amateur radio community. This list is a subset of codes that are contained in Appendix 9 to the Radio Regulations Annex to the International Telecommunications Convention (Atlantic City) 1947, for blocks QRA to QUZ inclusive, and in ICAO publications Dec 6100-COM/504/1 for blocks QAA to QNZ inclusive.

QNA	Answer in prearranged order.	QRT	Shall I stop sending?
QNC	All net stations copy.	QRU	Have you anything for me?
QND	Net is directed.	QRV	Are you ready?
QNE	Entire net stand by.	QRX	When will you call me again?
QNF	Net is free.	QRY	What is my turn?
QNG	Take over as net control station.	QRZ	Who is calling me?
QNI	Net stations report in.	QSA	What is the strength of my signals?
QNM	You are QRMing the net.	QSB	Are my signals fading?
QNN	Net control station is [call sign].	QSD	Is my keying defective?
QNO	Station is leaving the net.	QSG	Shall I send messages?
QNP	Unable to copy you.	QSK	Can you hear between your signals?
QNS	Following stations are in the net.	QSL	Can you acknowledge receipt?
QNT	I request permission to leave the net.	QSM	Shall I repeat the last message?
QNU	The net has traffic for you.	QSN	Did you hear me?
QNX	You are excused from the net	QSO	Can you communicate with me?
QNY	Shift to another frequency.	QSP	Will you relay?
QNZ	Zero beat your signal with mine.	QST	General call preceding a message.
QRG	Will you tell me my exact frequency?	QSU	Shall I send or reply on this frequency?
QRH	Does my frequency vary?	QSW	Will you send on this frequency?
QRJ	Are you receiving me badly?	QSX	Will you listen?
QRK	What is the intelligibility of my signals?	QSY	Shall I change frequency?
QRL	Are you busy?	QSZ	Shall I send each word more than once?
QRM	Is my transmission being interfered with?	QTA	Shall I cancel message?
QRN	Are you troubled by static?	QTB	Do you agree with my counting of words?
QRO	Shall I increase power?	QTC	How many messages have you to send?
QRP	Shall I decrease power?	QTH	What is your location?
QRQ	Shall I send faster?	QTR	What is the correct time?
QRS	Shall I send more slowly?		

COURTESY ARRL

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passband calling CQ or finishing a QSO before an attempt can be made to work someone. Calling CQ usually isn't a good option because without RIT or receiver offset, zero beat replies won't be heard.

In my opinion, when transmitting with QRP power, a very good antenna should be

used. We are already giving up a lot of dB of signal strength with the very low power-- giving up MORE dB using a poor efficiency antenna will drastically reduce the chance for success. In all my QRP operations, I use a dipole that is resonant on the operating frequency (NO ANTENNA TUNER).

After all that is said and done, I must report that I have had FUN with the little guy!! I modified it to work on 20 meters and worked a W7 in Washington state. Then I modified it to work on 40 meters and have worked several stations, the best

dx being Ohio. I have emailed pictures of the rig to some of the people I worked and EACH of them emailed me back saying that they were amazed that they could work such a tiny, simple transceiver.

In conclusion, very low power in the hundreds of milliwatts range with patience and a good antenna can do wonders. Many simple D.C. receivers with a few added features do a super job---but this one set out to prove how a very very simple rig can communicate over great distances.

Jay Rugar KØETC Joplin MO.

CLUB COAX AT COST TO CLUB MEMBERS

RG8X - \$0.31/ft. LMR400 - \$0.71/ft.
Contact Jim NØZSQ at the meetings.

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years to come as the cycle bottoms out. Don't let that discourage you from working 6 meters however, as we always have sporadic E-skip which provides stateside QSOs from the Midwest, something that F2 skip does not do because that skip lands out in the ocean. The month of June is the best month for E-skip. The best months are MAY-AUG and a winter season DEC-JAN, although not as good. Actually E-skip can occur at any date or time the year around. The usual range of one hop E-skip is 500-1300 miles, and sometimes a one watt QRP station can produce S9 signals 1000 miles away. Multi-hop skip can produce some real DX, though the signals are much weaker.

As far as an antenna is concerned, 10 watts and a simple vertical can give you good E-skip results when conditions are good. Don't worry about cross polarization because with skip it makes little difference. Only on ground wave and tropo propagation can cross polarization cost you about 20dB. This effect from cross polarization will make your one hundred watt signal sound like a one watt transmitter. Fortunately, this is not a problem with skip.

Many commercial 10 watt all mode rigs are available to get started on six meters. Later should you decide that you want to increase power, there are many 150 watt solid state amps available. These amps draw about 20 amps of current when operating, so you will need a larger regulated power supply. Some operators, like our club member Jay, KØETC, use converted HF amps to run as much as 600 watts. This sure pays off when the conditions are marginal.

If you have any questions about six meters, you may contact myself, Jay KØETC, or Dan WØVD for more information. I have been on 6 meters over 50 years, and would be happy to answer any questions.

73 es CU on 6
John, WØJRP
Grid EM27RB

BUY - SELL - TRADE

NOTE: INDIVIDUAL LISTINGS ARE FREE TO THE AMATEUR COMMUNITY, AND SPACE IS ALLOCATED ON A FIRST COME BASIS. COMMERCIAL AD

For Sale - Kenwood TS-520 HF Transceiver
This was my personal 5 band 80-10m rig that I used for many years. Very Good Rcvr, modest 160W transmitter (6146 Finals). Operates on 120VAC/12VDC. Includes manual. Ask \$275 (417) 781-2211, email wb0iyc@arrl.net
12/2002

For Sale - 12V 4.5AH Sealed Batteries - NOS
Rechargeable Sealed Lead Acid batteries for use in alarm and lighting systems. Meas. 3-1/2"x2-5/8"x4", perfect for portable use. Warehouse fire stock, good undamaged batteries with at least 80% of their life left. \$6.00/ea. (417) 781-2211, email wb0iyc@arrl.net
11/2002

For Sale - SIGNAL 1404-S 4 BAY DIPOLE
Heavy Duty 21ft phased array. 140-160 MHz. Former club repeater antenna. Serious offers only. Contact: Martin WD6FIC (417) 623-6618 email wd6fic@arrl.net
10/2002

For Sale - Kenwood TS-660 All Mode four band transceiver. Cover 15, 12, 10, & 6 meters. 12VDC mobile 10W transmitter. Very good shape, complete w/orig. carton, OP & Service manuals. Asking \$450. Ray KBØSTN (417) 781-4967, email kb0stn@arrl.net
10/2002

For Sale - ALINCO DR-570 2/440 FM 12VDC mobile rig w/20 memories. Good shape w/orig OP manual, mt. bracket, and mic. Asking \$150. Ray KBØSTN (417) 781-4967 email kb0stn@arrl.net
10/2002

For Sale - ALINCO DRM-06H 6m 20W FM rig w/100 memories. Will receive 40-60MHz Very good shape w/orig OP manual, and mic. Asking \$150. Ray KBØSTN (417) 781-4967 email kb0stn@arrl.net
10/2002

For Sale - TEN-TEC 1209 2m-6m Transverter. 10W in 10W out, 12VDC. Good Shape. Kit assembled and tested. Operates okay w/kit manual (incl schematics). Asking \$100. Ray KBØSTN (417) 781-4967 email kb0stn@arrl.net
10/2002

For Sale - KLM 2000A 2m All Mode Rig. Dual power 120VAC/12VDC, 5W transmitter. Collector's Item, (my second radio). Good shape w/orig. manual and hand mic. Asking \$200. Ray KBØSTN (417) 781-4967 email kb0stn@arrl.net
10/2002

AREA HAMFEST

NOTE: LISTINGS ARE PROVIDED FROM THE ARRL.ORG SITE AS THEY BECOME AVAILABLE. TO SUBMIT AN ENTRY, SEE BACK PAGE.

1 Feb 2003 - La Cygne, KS Mine Creek ARC presents the Mine Creek Hamfest. KS Community Bldg. on Broadway. 9:00 a.m. to 1 p.m. Free Adm., Tables - \$10, Hourly drawings. Contact: Ron Cowan, KBØDTI, PO Box 36, La Cygne, KS 66040, Phone: 913-757-4455 Email: kb0dti@arrl.net

8 Mar - Harrison, AR Harrison Hamfest 2003 Sponsored by North Arkansas ARS 8:00 a.m. to 2 p.m., North West Arkansas District Fairgrounds. Adm. \$5 (16 and under-free). Indoor Tables \$10, Outdoor Tailgating (requires admission ticket). Contact: Bill Carlton, KD5HBM, 7221 Hwy 62 East, Harrison, AR 72601, Ph: 870-743-6211 Email: kd5hbm@alltel.net <http://vistaeng.homeip.net/naars/hamfest/index.html>

14-15 Mar-Tulsa OK Green Country Hamfest 2003 ARRL Oklahoma Section Convention! This is the largest hamfest in Oklahoma! Talk-in on 147.090+ or 444.350+ no PL tones Claremore Expo Center, 400 Veterans Parkway Claremore, OK, 74017 Free Parking, and low Cost ON-SITE RV Parking! Terrific Prizes!

4-5 April - Joplin, MO Joplin Hamfest 2003 *Don't miss this one!* John Q. Hammons Convention Center, Exit 8B & I-44 Fri. April 4th 6-9 pm., Sat. 8 a.m. - 3 pm. Have breakfast at 7 a.m. with Midwest Director Wade Walstrom, WØEJ. Keynote luncheon with ARRL Int'l Affairs VP Rod Stafford, W6ROD. Hourly forums and drawings, ARRL/VEC testing, XYL events, Grand Prize - a complete HF Station. Adm. \$5 adv., \$6 at the door. Tables \$10/\$20, see website for more information or contact J C Alexander K5DMI, 417-206-2339.

19 April - Warrensburg, MO Ararat Shrine ARC Contact: Ray Pautz, NØRP, 13 SE 125th Road, Warrensburg, MO 64093 Phone:660-747-5002 Email: rpautz@charter.net <http://www.homestead.com/dowdy/hambash2000.html>

2-3 May 2003 - Lebanon MO ARRL Midwest Convention and Hamfest with guest Riley Hollingsworth K4ZDH Presented by the Lebanon Amateur Radio Club

A LITTLE MORE DIFFICULT HAM PUZZLE

Finally, I think that I have devised a puzzle that will keep you busy for a while!

The object here is to determine the word from the clue provided, then to locate and circle it within the block at the right. To make it even more interesting, words may be placed either vertical, horizontal, or diagonally, and may be right or left reading. They are technical in nature, and usually relate to HAM radio. The solution will be printed next month, so you have about 28 days to do it!

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S Y I F F I P W A V E L E N G T H U R G
P S I F Q H I D F F E W S W M P Y U Y U
G K E E T H U G R I X T Q B N O V I C E
B P F L B H U E Q S A J H X X W I C H J
A R R L T H Q M W T P J B P N L Y A Q P
C L T E K U E N I P E N O T E N R U S B
H C V A E Z R O B R Q X L U N M A E B G
S M X N H K N E A E D G M E S Y N V C L
U I C D W C Z V N S K A T R A F F I C N
O Y N L T A J B N O S O G R A C S O S B
U B H R R H G W E N H A M F E S T U Y A
N L N P F S E J T A G R O T O R X Y V N
I M C N O I S E N N H D N E P V W B Z D
T C H G O X Y D A C G E F I W L Z E R W
N T A R A D I O Y E U Y P F D R T P Z I
O C I B M O H R T Z A T F O H I G V B D
C G P D K P N A D K L E T H H T P P A T
H P I J S R E T E M T T A W Z H V P L H
J B P M R H E R E H P S O N O I Z A U L
P C J B A N D P A S S W G B X F I D N I
    
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|---|--|
| <ol style="list-style-type: none"> 1) Orbiting Satellite Carrying Amateur Radio. 2) Award for working 100 Countries. 3) Our official league and lobbyists. 4) The region of the upper atmosphere where certain radio waves are bounced back to earth. 5) Balanced to unbalanced-line transformer. 6) Term which implies "passage" of only a certain "band" or range of frequencies. 7) Frequency range of a filter or tuned circuit specified by its -3dB points. 8) Device used to aim directional antennas. 9) Found from $c \div f$ and usually expressed in meters. 10) Name usually given to a ham's other home or hideout. 11) General name for a directed gain antenna. 12) Point at which an antenna appears as a "non-reactive" load to the transmitter and gives optimal performance. 13) First word in abbreviation CW. 14) The basis for QRN or QRM. | <ol style="list-style-type: none"> 15) Wireless telegraphy or telephony. 16) EIA COLOR CODE representing the digit "9" and found on most resistors. 17) Instrument to provide measurement of station output. 18) Antenna design that is denoted by its diamond shape. 19) Device optimized for radiation or reception of RF energy and commonly found near areas of high lightning activity. 20) _____ Morse was the father of this code. 21) Rate at which a periodic waveform repeats. 23) Intent of a sender transmitting: dit-dit-dit-dit dit-dit. 23) Meaning of "T" in RST. 24) Name given to a former "entry class" of amateur license. 25) Term referring to the messages originated, relayed, or received by an amateur radio station 26) The name representing a ham's collection of equipment from which he or she operates on the air. 27) A place where hams tend to congregate to buy and sell their equipment and parts. |
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FEBRUARY 2003

Joplin Amateur Radio Club Meetings and Events

<i>Sun</i>	<i>Mon</i>	<i>Tue</i>	<i>Wed</i>	<i>Thu</i>	<i>Fri</i>	<i>Sat</i>
						1 09:00 BREAKFAST -
2 <i>GROUNDHOG DAY</i> 14:30 -16:00 JARC SLOW SCAN NET	3 19:30 JARC MON NITE NET NET CONTROL - WØJRP	4	5	6 17:30 THURSDAY NITE OUT -	7	8 09:00 BREAKFAST -
9 14:30 -16:00 JARC SLOW SCAN NET	10 19:30 JARC MON NITE NET NET CONTROL - NØZPD	11 19:30 JARC BUSINESS MEETING	12	13 17:30 THURSDAY NITE OUT -	14 <i>Valentines</i>	15 09:00 BREAKFAST -
16 14:30 -16:00 JARC SLOW SCAN NET	17 18:30 VE TESTING@ ST. PAULS METHODIST CHURCH 19:30 JARC MON NITE NET NET CONTROL - WØKMP	18	19	20 17:30 THURSDAY NITE OUT -	21	22 09:00 BREAKFAST -
23 14:30 -16:00 JARC SLOW SCAN NET	24 19:30 JARC MON NITE NET NET CONTROL - WØ6FC	25 19:30 JARC PROGRAM MEETING "ARES CRISIS COMM CONF." ANDY GABBERT	26	27 17:30 THURSDAY NITE OUT -	28	

Meeting Times, Testing, and other Club Information

The **Joplin Amateur Radio Club, Inc.**, a Missouri *not-for-profit* organization, meets on the second and fourth Tuesdays of each month at the Joplin Municipal Building, on the lower level, in the Civil Defense dining room at 7:30 PM. The facility is accessible to the handicapped.

The club supports and promotes annual operating events, assists area agencies with communications when requested, and offers training classes for advancement in amateur radio. It also sponsors the JARC Hamfest each year in April, and maintains a wide area coverage OPEN 2m repeater on 147.21 MHz (+).

Some club members can be found weekday mornings around 8:30 a.m. meeting for coffee at the Ramada Inn at 34th and Rangeline Road. On Saturday mornings, area Hams also

gather for breakfast around 9:00 a.m. at the restaurant next to Smitty's Grocery located at 1820 Maiden Lane in west Joplin.

For details contact Dave, NØKMP on 147.21+, or land line at 417.781.3154.

2003 CLUB OFFICERS:

President: Dave Ferguson	NØKMP
V. P. JC Alexander	K5DMI
Treasurer: Jim Johannes	NØZSQ
Secretary: Mark Mitchelson	NØZPD

Amateur Radio VE Testing

License testing by volunteer examiners takes place on the 3rd Monday of each month at the St. Paul's Methodist Church located at 2423 West 26th St. in Joplin. Sign up at 6:30 PM, testing begins promptly at 7 PM.

ABOUT THE NEWSLETTER

This club newsletter offers an open forum for the Four-State area amateur radio community, and **your** comments and contributions are always invited. Items for publication, including classified ads and amateur radio related articles, may be sent to the **JARC Printed Circuit**, P.O. Box 2983, Joplin, MO 64803-2983, or send email to: **wb0iyc@arrl.net**

Deadline for submissions is the 20th of the month preceding the month of publication. Non-Commercial Classified ads are free and will be run on a space available basis whenever requested. Submissions may be typed, handwritten, ASCII text files attached with email, or on disks formatted for IBM. *All items* are subject to editing for spelling, content, and space limitations as required.

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