PRINTED CIRCUIT

MARCH 2008 Newsletter of the Joplin Amateur Radio Club Vol. 18 Issue No. 3

Advice for New Generals

Many hams are upgrading to General now days but seem a little confused when it comes to HF operation. What bands should I operate, kind of antenna to use, etc.

We are now about as low in the solar cycle as we can get, and many hams wonder why they hear nothing but noise most of the time when listening after sunset on 20 meters and above. There is quite a bit of activity on 80 and 160 at night, but little during the day until the sun gets lower the skip comes in. You will find that 40 meters is a great band during the day, working up to 500 miles, and then a worldwide DX band at night. The only real problem with 40 meters is that the band is loaded with foreign short-wave broadcast stations. You can work between them however, and even CW next to them.

For those that like to rag chew, both 75 and 160 meters are excellent bands at night, and will easily work up to 400 miles. If you want a little CW practice 80, 40, and 30 meters are great CW bands. The Extra class CW portion of the 80 and 40 meter bands lie in the lower 25 kHz, and seem to have most of the high speed activity, but you can find slower speed ops just above in the general part of the band.

As for an antenna, a simple horizontal dipole *cut for the band of operation* will do well. If placed low it works at shorter distances, at a height of about ¼ wavelength, it can provide good DX. A vertical antenna provides a lower angle of radiation and great for Foreign DX but tends to pick up more man made noise than a horizontal antenna. A multi-band

(Continued on page 2)

Weather Symposium Scheduled

Spring is just around the corner, and many hams in our area will find this event right down their *tornado* alley.

On May 4th, 2003 an outbreak of tornadoes swept across the middlewest killing dozens and injuring thousands. The fifth annual Crawford County Severe Weather Symposium will reflect back on the events of that May 4th, and look at the progress that has been made since that day.

There will be several speakers giving presentations throughout the day on how you can protect yourself during severe weather. Although the agenda is not finalized, several exhibits are scheduled, including:

- **Tornado Generator**
- **Storm Chase Videos**
- **Storm Chase Vehicles**
- **InterWARN & StormLab**
- **Skywarn Network Information- Sherry Weir**
- **Collaborative Rain, Hail & Snow Network**
- **Safe Room/Storm Shelter**
- **NOAA Weather Radio Demonstration**
- **Severe Weather Safety**
- **Wizard of Oz Display**
- **Face Painting & Gift Sales of Collectibles**

Since 1950, Jasper County leads the state with 39 tornado strikes, while Newton County ranks third, with 33. According to Ron Hayes NØVKJ, "It's not a matter of 'if', it's a matter of 'when'."

The Symposium will be held from 1-6 pm, Sunday May 4th, 2008, at the Franklin Community Center, 701 South Broadway in Franklin, Kansas. The event is free.

For additional information, contact Phyllis Bitner, 620.249.9333, or visit the website, ***www.may4thsymposium.org***

6 Meter Weekly Net Operating In Area

Joplin area Ham operators have been invited to participate in a new 6 meter net originating from Nixa just south of Springfield. Operating on the 53.270 repeater, the net started November 19th, and meets every Monday night at 8:00 pm. The repeater input is -1.7 MHz, or 51.570 with a PL Tone 162.2 Hz. The official website for the net is **http://6meter.net**.

The net is open to *anyone,* and the focus is on 6-meters and below, all modes. Lots of Hams can access the 53.270 mobile from the Joplin area, so feel free to stop in and say hello.

James is also looking for 6-meter simplex net control operators in and around the Joplin area. If you are interested, send your name, e-mail address or phone number, so he can contact you. The contact information is given at the end of this article.

With so many HF+6m rigs out there now, this would be a good chance for everyone to try 6-meters and learn more about the band. Try out this repeater on Monday evenings, even if you are not able to make contact, perhaps you will be able to listen in.

James Adkins, KBØNHX
Vice-President & Repeater Trustee
Nixa Amateur Radio Club, Inc.

District 1 Technical Field Engineer
Troop A-Lee's Summit; Troop H-St. Joseph
Missouri State Highway Patrol
504 SE Blue Parkway
Lee's Summit, MO 64063
-622-0707 ext. 235, 417-840-5261 (Cell)

inside...

Ralph Orahood KBOZHC Silent Key

Ralph passed away at his home Tuesday, Feb. 26, 2008, he was 79 years old.

Licensed as a Technician for many years, he operated mostly 2 meter FM and later SSB. About a year ago, he succeeded in passing the General class license exam, and found great pleasure operating on HF.

Ralph was always ready to help local hams, and had no fear of heights, climbing towers well into his 70's. His crusty character endeared him to all of us in the Ham community.
He will be missed.

(Continued from page 1)

antenna like a G5RV is a compromise antenna, that works fair on all bands.

To make a simple dipole, copperweld antenna wire works best as it is an alloy of copper over steel, and you can use fairly light weight wire. To experiment, just about any copper wire will work, although if long, it may sag. To determine the length, use the formula 468/frequency in MHz to find the half wave length at the desired frequency band. Measure it, then cut in half for a quarter wave each side. Smaller coax works fine for the HF bands. You can use a light weight coax like RG8X or RG58, and it will have minimum losses (under 1.5 dB @ 10 MHz). A dipole is a center fed antenna, and you will need 3 insulators, one in middle at feed point, and one at each end, and enough coax to reach from the center of the antenna to your rig. A 40 meter dipole can also be used on 15 meters with good results. Operation on this 3rd harmonic will have some lobes, but will match nicely.

In the ARRL DX test a few weeks ago, I worked about 30 countries on 15 meters, including Africa, just running 100 Watts. This happened in spite of being on the very low end of the eleven year solar cycle. In a few years, 15 and 10 meters will be the best bands for daytime world wide DX.

If you have any questions about antenna construction, feel free to email or call me at 417.624.8058, or **w0jrp@earthlink.net**

'73 DE John WØJRP

Central States VHF Society 2008 Conference in Wichita

The Central States VHF Society (CSVHFS) will be holding their 42nd Annual VHF Conference, at the Hilton Wichita Airport Executive Conference Center, July 24 through 27, 2008, in Wichita, KS. All Hams are invited to attend this event. Hotel information is on the website, and fill up fast. The schedule for the three days is still being updated, but here is a basic list.

Thursday, 24 July 2008 Surplus tour, Thursday Night Social, Hospitality room, BoD meeting.

Friday, 25 July 2008 Antenna Range, Rover/Dish display, Several technical presentations, including testing of active devices (noise figure) and passive devices. Flea Market, SNOTTS meeting.

Saturday, 26 July 2008 Technical Presentations including tests of active devices (noise figure) and passive devices. Business meeting. Banquet with keynote speaker.

What is Central States VHF Society?

The CSVHFS is a Not-For-Profit organization chartered in the state of Missouri. It began in the mid-1960s to foster amateur radio operation on the bands above 50 MHz. The organization is national in scope, with a membership of about 300, although the majority are from midwest states. Canada along with several other foreign countries are represented.

The CSVHFS hosts an annual Technical Conference. The goal of the conference is to raise the technical level of amateurs by providing a forum for presenting technical papers relating to VHF, UHF, and Microwave, to provide a focal point for the discussion on operating practices and proceedures, on exploration of modes such as EME, MS, FAI, E-skip, etc. and other topics that promote operation on Amateur bands above 50MHz.

Proceedings from these conferences are published by the ARRL and can be purchased from the League.

For more information about this conference, hotel information, and more, go to this website:
http://www.csvhfs.org/

ARRL Continuing Education Course Registration Information

Registration will remain open through Sunday, February 24, 2008 for these online course sessions beginning on Friday, March 7, 2008:

Technician License Course (EC-010)
Amateur Radio Emergency Communications Level 1 (EC-001)
Radio Frequency Interference (EC-006)
Antenna Design and Construction (EC-009)
Analog Electronics (EC-012)

Each online course has been developed in segments - learning units with objectives, informative text, student activities, and quizzes. Courses are interactive, and some include direct communications with a Mentor/Instructor.

Students register for a particular session that may be 8, 12, or 16 weeks (depending on the course), and they may access the course at any time of day during the course period, completing lessons and activities at times convenient for their personal schedule. Mentors assist students by answering questions, reviewing assignments and activities, as well as providing helpful feedback.

Interaction with mentors is conducted through e-mail; there is no appointed time the student must be present - allowing complete flexibility for the student to work when and where it is convenient.

To learn more, visit the CCE Course Listing page at:
http://www.arrl.org/cce/courses.html or contact the Continuing Education Program Coordinator by email at: ***cce@arrl.org***

Join ARRL through the JARC!

ARRL Affiliated Clubs receive a commission for every new ARRL membership and renewal they submit to ARRL Headquarters.

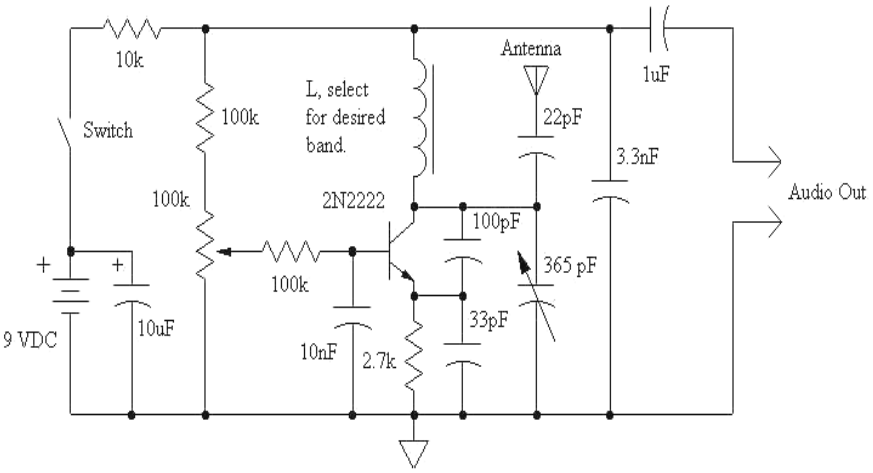
Under the ARRL Club Commission Membership Recruitment Program, clubs retain $15 for each NEW membership and $2 for each renewal submitted (regular and senior memberships only).

Build this Simple Regenerative HAM & Short Wave Receiver

Regenerative receivers provide a surprising level of performance with only a handful of components. They excel at receiving all types of radio signals including AM, FM, SSB, and even CW, from below the AM broadcast band through the higher short-wave bands to VHF, above which the superregenerative detector becomes the better choice - remember the CB toy Walkie-Talkie! Because of their simplicity, many designs for regenerative receivers exist, and most will do a fine job with one or two transistors, often providing enough gain to drive a speaker. I have built two transistor regenerative receivers which provided enough volume to drive a small speaker when tuned to local AM radio stations - without an antenna!

The regen is basically an oscillator circuit with a gain control that allows the user to adjust the RF *feedback* to a point just below oscillation or, quite often, just above the critical level such that a small oscillation is present. The typical regen uses a tapped coil or additional windings to connect into the tuning tank and the tuning capacitor provides the total tank capacitance. The advantage to this approach is that the tuning range is maximized since there are no fixed capacitors contributing to the tank. The disadvantage is that special, hand-made coils are required. The regenerative receiver circuit shown below uses a capacitive taps to achieve the required feedback and, as would be expected, the tuning range is restricted to about two to one. For example, the AM broadcast band would require two inductors to tune, perhaps from 500kHz to 1MHz and 900kHz MHz to 1.8MHz. This disadvantage really isn't all that important when one considers the advantage of being able to use factory-made molded inductors! If a multi-band receiver is constructed, there will be a couple more band switch positions. Actually, the lower tuning range makes fine-tuning a little easier which is critical for achieving the maximum performance, especially handy for shortwave and amateur applications, where the band segments are small.

The basic receiver is shown here. The components are not critical and the values were pretty much the first ones found on the bench that were near the "right" value so don't hesitate to experiment. The transistor can be just about any small-signal NPN silicon device such as the 2N4401, 2N3904, 2N2222, or other general purpose device. The inductor **L** will have to be found experimentally, but some starting point values are given below. To find where in the HF spectrum you are with this receiver, use another receiver nearby, it will howl as the Regen tunes to the same frequency.



This radio's audio output is fairly weak, and unless you have hi-Z (2000Ω) headphones, you will need an amplifier to drive them or a speaker. You can roll your own, or buy one at the local Radio Shack store. Next month I will introduce simple audio amplifier you can build from scratch which uses the common 8-pin LM386.

The inductor can be hand wound, and for experimentation, could be plugged into a tiny socket. This inductor could be selected with a double-pole multi-position switch for a multi-band receiver. A 220uH will tune the lower part of the AM band from about 570kHz to 1.2Mhz, a 5.6uH coil will tune from about 3.5MHz to 7.5MHz, and a 2.2uH will tune from about 5.6MHz to near 11.6MHz. Always use magnet wire to make RF coils, a T50-2 (RED) toroid wound with 34T #24 AWG yields 5.6µH, while 2.2µH = 21T #22 AWG. Alternately if winding an air coil on a 7/8" O.D. plastic pill bottle, 15T #22 AWG will build a 5.6µH inductor. For calculating inductors, the effective tuning capacitance is from about 85pF to 370pF.

When the regen control is set *too high*, there will be a lot of squealing and whistling as the radio is tuned. When it is set too low, there will be no sensitivity. There is no substitute for experience! After a desired station is found, the regen control can be *carefully* advanced along with careful fine tuning to get the best results. The regen is actually oscillating in this mode but it is synchronized to the signal. In fact, with careful adjustment, a sinewave may be extracted from the collector of the oscillator transistor which is locked to the radio transmitter's frequency. The author was able to get about 0.1ppm stability from WWV and from local radio stations! When this poor man's frequency standard loses lock, the speaker squeals out a warning!

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Doctor Ray Dio Is QRV!

Dear Dr. Ray, My neighbors have not spoken to me for *over two years*, and I often notice that when I operate my linear in the evenings, they often flash their bedroom and living room lights ON and OFF. Do you think they are trying to distract me from the enjoyment of my hobby? Sincerely, Jim S.

Dear Jimbo, I bet you really have them pi#%ed off! Hopefully you aren't some pervert, peeking through their windows!
I would bet that your transmitter is causing their *Touch Lights* to flash, also you are probably coming in on their phones, and maybe the TV and Microwave oven too!

Put a low pass filter on your transmitter and tune it properly. Then go make amends with your neighbors. Take some capacitors with you so you look like a tech. Perhaps you can fix the problem with the phone too! Otherwise, watch out, I would expect them to cut *your coax* next!

'73

Annual QRP Conference Scheduled

Make plans to attend this year's OzarkCon QRP conference on April 25 & 26, 2008 at the La Quinta Inn - 3320 Range Line, Joplin, Missouri. This is the same location as the former Ramada Inn.

Come join scores of QRP'ers from around the world for the biggest and best QRP convention in mid-America.

Pre-registration opens February 1st, and must be received by 4SQRP no later than April 15, 2008. Registrations received after April 15 won't receive the custom made ID badge.

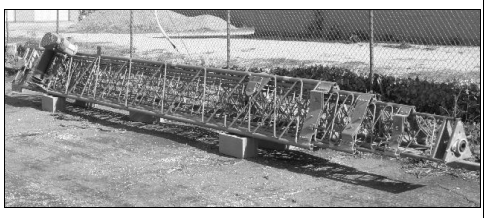
To guarantee your room, please make your motel registrations ASAP. Go to our URL for more information on speakers:
http://ozarkcon.com/ozarkcon.htm
Sponsored by the 4SQRP GROUP

02/2008

HAM EQUIPMENT FLEA MARKET

NOTE: INDIVIDUAL LISTINGS ARE $1 PER MONTH, FREE FOR JARC MEMBERS. FS / WTB SPACE IS ALLOCATED BY DATE RECEIVED. COMMERCIAL AD SPACE IS AVAILABLE FOR A NOMINAL CHARGE.

For Sale - 72 ft. Motorized Crank-up Tower



Mfg. by US Tower Corporation, this model includes tilt over capability. Rated for over 30 ft² wind load to handle large antenna arrays. Weight 1800 lbs. FOB Joplin. $4000 O.B.O.
John Stucka, N3JM, 609-653-3021
jstucka0@yahoo.com

02/2008

For Sale - iCom 551 6m All Mode XCVR
Nice little 6 meter rig with Passband Tuning Unit, VOX, and FM modules (all are installed). Whopping 10W output, and I will include a cut dipole with enough coax to get you started on the Magic Band. Table top unit 120VAC / 12VDC Clean & good shape w/manuals. Asking $350
Jim Scott 417-781-2211, email wb0iyc@arrl.net

02/2008

For Sale - 1/4W 5% Hobbiest Resistor Paks
Carbon Film Resistor Assortments consisting of 10 each of the twelve values within one decade totaling 120 resistors. Value range in package: **1.0, 1.5, 2.2, 2.7, 3.3, 3.9, 4.7, 5.6 6.8 7.5, 8.2, 9.1**
Five ranges of kits available, and each pak is **$2** 10-91Ω, 100-910Ω, 1.0K-9.1KΩ, 10K-91KΩ, 100K-910KΩ Buy all five and postage is free!
Jim Scott 417-781-2211, email wb0iyc@arrl.net

02/2008

For Sale - LEXMARK Printer Model 515
In good shape, USB port printer. It may need printer cartridge. Asking $25 OBO.
John Tudenham WØJRP, 417-624-8058
email: w0jrp@earthlink.net

01/2008

WTB - High Power Dummy Load - Must be rated for use up to 1kW. Intermittent service is okay, continuous preferred. Can-Tenna or any brand, if reasonable price.
Contact Rob George WØTTM, 417-671-9420
email: rob.george@scottelectronic.com

01/2008

Did You Know?
Club members can list items to buy and sell for free! See information in the Classified Ad section.

Area HAMFESTS and EVENTS

NOTE: LISTINGS ARE PROVIDED AS THEY BECOME AVAILABLE AND ARE NOT VERIFIED FOR CORRECTNESS. SEE BACK PAGE FOR SUBMISSIONS.

1 Mar 2008 - Russellville, AR Arkansas River Valley Amateur Radio Foundation presents the Russellville Hamfest at the Hughes Community Center,1001 East Parkway Drive (Knoxville & Parkway). Admission. $5; Tables $10; Doors open at 8 AM, VE Testing starts at 9:30 AM; ARRL Sanctioned; Door Prizes; Forums; DXCC/VUCC/WAS card checking; Free Parking & Tailgating; Talk-in 146.82- (PL 131.8)
Margaret Alexander, KC5MCS 479-968-7270
email: ealexand@cswnet.com
http://www.arvarf.com

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13 Mar - Harrison, AR North Arkansas Amateur Radio Society Hamfest. 8am-1pm

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19-20 Mar 2008 - Claremore, OK
Oklahoma Section Convention sponsored by the Green Country Hamfest Committee
http://www.greencountryhamfest.org
Info: Merlin Griffin, WB5OSM 918-520-7668
PO Box 470132, Tulsa, OK 74147
Email: info@greencountryhamfest.org

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5 Apr 2008 - Fort Smith, AR
Hanging Judge Hamfest 2008, presented by the Fort Smith Area Amateur Radio Club
Columbus Acres, 10203 Columbus Acres Road Fort Smith, AR. 6,500 SqFt A/C Building w/free parking. Hourly, & Grand Prizes!
Adm: $8 (adv.), $10, (door); Tables $10; Kids Free! Forums & Programs; Snack Bar; Outdoor Tailgating Free with Registration
Talk-In: 146.94- ; 146.64 (PL 88.5); 444.500
Tables limited - Register Early to Reserve!
Setup: Friday 4-8 PM & Saturday 6-8 AM
Contact: Dennis R. Burton, N5DRB
7909 South 25th St., Fort Smith, AR 72908
Phone: 479-648-083, Email: n5drb@cox.net
http://www.hangingjudgehamfest.com

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12 Apr 2008 - Joplin, MO Joplin ARC Spring Tailgater, Ewert Part, 7th and Illinois Ave. 8 AM till Noon, Free, Bring your own table and chair. Always free coffee and donuts.

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19 Apr. 2008 - Kansas City, MO
HAMBASH 2008 presented by the Ararat Shrine Amateur Radio Club, Talk-In 145.30
http://www.hambash.com/
Dave Hinkley, KAØSOG, ka0sog@arrl.net

MARCH 2008

Joplin Amateur Radio Club Meetings and Events

Sun	*Mon*	*Tue*	*Wed*	*Thu*	*Fri*	*Sat*
						1 09:00 Breakfast - Steak & Shake
2	**3** 19:30 JARC Mon Nite Net 147.21 MHz WØIN Repeater Net Control - N9HGF	**4**	**5** 19:30 -20:30 JARC Slow Scan Net 147.21 MHz	**6** 17:30 Thursday Nite Out - Pizza Inn - S. Main, Joplin	**7**	**8** 09:00 Breakfast - Steak & Shake
9	**10** 19:30 JARC Mon Nite Net 147.21 MHz WØIN Repeater Net Control - N9HGF	**11** 19:30 JARC Business Meeting Red Cross @ 4th & Jackson	**12** 19:30 -20:30 JARC Slow Scan Net 147.21 MHz	**13** 17:30 Thursday Nite Out - Pizza Inn - S. Main, Joplin	**14**	**15** 09:00 Breakfast - Steak & Shake
16	**17** 19:30 JARC Mon Nite Net 147.21 MHz WØIN Repeater Net Control - N9HGF	**18**	**19** 19:30 -20:30 JARC Slow Scan Net 147.21 MHz	**20** 17:30 Thursday Nite Out - Pizza Inn - S. Main, Joplin	**21**	**22** 09:00 Breakfast - Steak & Shake
23	**24** 19:30 JARC Mon Nite Net 147.21 MHz WØIN Repeater Net Control - N9HGF	**25** 19:30 JARC Program Meeting TBA	**26** 19:30 -20:30 JARC Slow Scan Net 147.21 MHz	**27** 17:30 Thursday Nite Out - Pizza Inn - S. Main, Joplin	**28**	**29** 09:00 Breakfast - Steak & Shake
30	**31** 19:30 JARC Mon Nite Net 147.21 MHz WØIN Repeater Net Control - N9HGF					

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 Red Cross Building, in the North room at 7:30 PM. Enter from the West side of the facility. The building is handicap accessible.

The club organizes and participates in annual operating events, assists area agencies with communications, and offers testing and training classes for advancement in amateur radio. It also sponsors the JARC Hamfest each year in August.

The club maintains two 2m repeaters.
WØIN - 147.210+ MHz (open)
WØIN South - 145.390- MHz (91.5 Hz)

Point your browser to the club website for event information, photos of past events, and links to other ham sites.
http://www.joplin-arc.org

Hot topics are discussed at the Saturday morning breakfasts, where members gather about 9:00 a.m. at the Steak & Shake restaurant located on the north outer road at I-44 and Range Line Road, next to the Olive Garden restaurant.

2008 CLUB OFFICERS:

President:	Andy Gabbert	KAØTUD
Vice Pres.	Bill Reynolds	N6HXI
Treasurer:	Jim Johannes	NØZSQ
Secretary:	Jim Scott	WBØIYC

VE Testing Schedule

Volunteer Examiner testing is held on the first Monday of each month except holidays at St. Paul's United Methodist Church, 2423 W. 26th St. in Joplin, MO. Sign up starts at 6:30 p.m. testing begins promptly at 7:00 p.m.

For additional details, or special accommodations contact Martin, WD6FIC (918-919-0188).

ABOUT THE NEWSLETTER

This club newsletter offers an open forum for the amateur radio community in the four-state area. *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 *ascii text* email to: **wb0iyc@arrl.net**

Deadline for submissions is the 15th of the month preceding the month of publication. Non-Commercial Classified ads are run free for JARC members, $1 each, otherwise. Classified ad space is available at $12/pg/month, pro-rated for fractional parts to 1/6pg.
All submissions accepted, *email ASCII text is preferred*. All items will be edited for spelling, content, and space limitations as required.

PRINTED CIRCUIT

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Joplin, Missouri 64803-2983