

PRINTED CIRCUIT

February 1999

Newsletter of the Joplin Amateur Radio Club

Vol. 9 Issue No. 2

RF INTERFERENCE A PROBLEM TRANSMIT AND RECEIVE

BY JOHN TUDENHAM WØJRP

You have read many articles about RF Interference and might think that interference always originates from the transmitting end. However, most cases of severe RF interference come on the receive end.

The most common problem is power line noise radiated over a wide frequency range on the ham bands. Another source, mostly on our lower hf bands, is radiation from harmonics of the horizontal oscillator of 15.75kHz from nearby TV sets. This is heard as rough sounding carriers that appear about every 15kHz across the bands. This also causes severe QRM on the standard broadcast band. The color burst oscillator from nearby TV sets can be heard at 3579.5kHz and cause QRM on our 80 meter band, and even the 14th harmonic of these oscillators can be heard on around 50.113 MHz on our six meter band which is near the DX calling frequency, and has QRMed DX stations. Another problem occurring on our two meter band is radiation from nearby scanners that have a 10.7MHz IF. This will be heard on your receiver as a series of beeps until the scanner locks onto that frequency and then a solid carrier. The oscillator will be heard 10.7MHz below the incoming signal. If the scanner is set at 154.9MHz, the oscillator will be at 144.2MHz right on the two meter SSB call frequency. These have been known to radiate up to half of a mile. Another that appears on 160 meters is a nearby AM broadcast receiver with a 455 kHz IF. The oscillator transmits a signal 455kHz above

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FCC COMES A CALLIN' IN THE CAROLINAS

FCC engineering and legal staff conducted unannounced Amateur Radio station inspections January 21 and 22 in North and South Carolina, reports FCC amateur enforcement honcho Riley Hollingsworth, K4ZDH.

"Commission personnel inspected the stations of John A. Abernethy, K4OKA, an Extra Class licensee in Hickory, North Carolina, and Richard Whiten, WB2OTK, a General Class licensee in Easley, South Carolina," Hollingsworth said.

In both visits, FCC officials were accompanied by local law enforcement personnel. Hollingsworth said both amateurs cooperated with the inspections, which lasted approximately two hours apiece. FCC officials said that both operators "were the subjects of many complaints about their operations on the 75 and 20 meter Amateur bands." The officials said the results of the inspections were "under review," and declined further comment.

Earlier this month, the FCC issued a stern warning to an Indian River County, Florida ham who, the FCC said, had been using the amateur airwaves to transmit information on, among other things, the credit reports, criminal records, and mortgage foreclosures of other hams and their families. "You have apparently made these disclosures and broadcasts for the purpose of deliberately and maliciously

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LEAGUE SEEKS ULS CHANGES

The ARRL has asked the FCC to make some minor alterations to its impending Universal Licensing System rules. The ULS, being phased in by the FCC throughout 1999, will consolidate application forms and procedures for several FCC services. Among other things, it will replace the venerable FCC Form 610 series with a new Form 605 and will provide for electronic filing, modification, and renewal for amateurs.

The ULS Report and Order was issued last October by the FCC, which also took the occasion to amend the rules to make it easier for foreign hams to operate temporarily in the US.

In a petition for partial reconsideration, the League said it wants the FCC to continue to issue paper license documents; to come up with a way for applicants not having a Taxpayer Identification Number--typically a Social Security Number--to meet ULS requirements to provide one; and to include on Form 605 a section for Volunteer Examiners to certify that an

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Spaghetti!
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SOLAR UPDATE

Solar sage Tad Cook, K7VVV, Seattle, Washington, reports: Solar activity was down slightly this week when compared to last. Average sunspot values were 35 points, lower, but solar flux was off by less than 6 points. Average solar flux for the previous 90 days was 140.1, and daily solar flux values were below this level on the last three days of the reporting week. Expect solar flux to continue lower at 112, 110 and 110 for January 29-31. Planetary A index for the same three days is projected

Solar Flux is expected to rise next week...

to be 8, 5 and 8, which is not too bad for the CQ WW 160-Meter contest.

The projected solar flux for January 30-31 of 110 is quite low, all of 30 points lower than the average for the 90 days previous to the reporting week. Flux values also dipped down to this level on January 10, but prior to that had not been this low since late October. Solar flux is expected to rise next week, to above 130 around February 8, above 140 three days later, and around 155 by mid-month. Look for unsettled geomagnetic conditions around February 9-11 and February 19.

During the same week last year average sunspot numbers were 17 points lower, and average solar flux was about 55 points lower.

Sunspot numbers for January 21 through 27 were 134, 141, 117, 107, 81, 47, and 64, with a mean of 98.7. The 10.7-cm flux was 175.3, 177.9, 165.9, 161.8, 138.1, 133.2, and 125.4, with a mean of 153.9. The estimated planetary A indices were 5, 10, 16, 13, 9, 4 and 9, with a mean of 9.4.

PUBLISHED WITH PERMISSION FROM THE AMERICAN RADIO RELAY LEAGUE.
- THE ARRL LETTER, VOL. 18, NO. 5, JANUARY 29, 1999.

QRP FOR THE RADIO AMATEUR

BY JOHN TUDENHAM WØJRP

A lot has been said about QRP, JARC members will have a chance to learn first hand the art of QRP operation. During the 2nd meeting in March we have scheduled a QRP program presented by Kelly Ellison (former JARC member) who now lives in Aurora MO, and others from the Springfield area.

Here at WØJRP we now have completed my QRP work all states from all bands 80-10, now I am trying to do it on one band which is more difficult. Hawaii and Alaska probably will be difficult to work with five watts on 40 and 80 meters. I already have them on 20, 15, and 10. Some of the close in states are difficult on the higher bands.

One secret to QRP operation besides getting most of the RF into the Antenna, is riding the skip zone and watching the K and A index given by WWV, 18 minutes past the hour. The lower the K and A index, the less absorption and the stronger the signals. Also on the higher bands, 20 on up, working a station right on the edge of the skip zone will produce the strongest signals. If you're hearing the distant station well, he probably can receive your low power. On an accurate S-

meter, a 100 watt signal reading S9 + 20 dB, will still be S9 + 7 dB running five watts. If you reduce your power to ½ watt, the signal should still be over S8! This applies only to an accurate S-meter where 6 dB represents one S-unit. The main problem with QRP voice operation is that you may get QRMed out by a higher power station. Another advantage to CW with a good selective filter in your receiver it is usually possible to separate two stations less than 1KHZ away even if one is much stronger.

Homebrewing rigs can be a lot of fun for QRP. There are many low price kits available to build solid state rigs, also a simple tube type rig can be constructed from a few JRP's (junk radio parts). Low priced transmitting crystals may be purchased from CW Crystals, located at 1714 N. Ash St. in Nevada, MO 64772. John Morris took over the business which was located in Marshfield, MO for many years.

I can supply you with a variety of tubes, free of charge, for anyone interested in building a QRP CW transmitter of five watts or less.

73 for now.

(Continued from page 1)

applicant has met the requirements for a new or upgraded ham ticket. In addition, the League plans to ask the FCC to restore wording in Section 97.15(e) that references the limited federal preemption, PRB-1. The section was inadvertently deleted during the Commission's redrafting of the rules to accommodate the ULS changes.

The ARRL already has expressed concerns over FCC suggestions that the agency might do away with paper license documents altogether and rely instead on the "license grant"--the virtual document that resides within the FCC's computerized amateur database. In its

latest filing, January 12, the League said that in some states that regulate possession of scanning receivers but exempt amateurs, inability to produce a license document could result in "arrest and criminal prosecution as well as seizure of equipment by local law enforcement." The League said hams operating overseas also often must produce a paper document. The ARRL noted that the CEPT agreement requires US hams traveling in CEPT countries to possess a US government-issued license document and that ITU regulations "appear to require" a government-issued license document.

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GUEST EDITORIAL

JACK PURDUM KGØVR

I am growing increasingly weary of all this talk about CW being obsolete. I know that CW is not currently used by the military and some commercial use has ceased, but ham radio is not part of either of these groups.

I believe CW is simply being "jawboned" into extinction on ham radio in a misguided effort to attract more people into the hobby. Most of these new hams would never know about the traditions and customs CW has provided to many generations of amateur radio operators.

Maybe we should include amplitude modulated (AM) phone mode in the obsolete category. However, don't tell the thousands of hams who greatly enjoy rag chewing on those so called "old obsolete tube rigs". AM phone has always been part of amateur radio and should continue to be.

Let's look outside amateur radio. Are horses, black powder marksmanship, or archery obsolete? Of course they are, if you only consider military or commercial interests, (horse racing excepted). However, to the millions of people involved in those hobbies, these activities are right up front.

Proposals have already been put forward to reduce the CW spectrum space and make those spaces available for more SSB. What comes after reduction, eventual elimination? What then, AM phone? What then, amateur radio itself? Once the chipping starts, where would it end?

The next time you hear someone mention that CW is obsolete, ask them what group they are talking about, military, commercial, or amateur radio. CW has always been a strong part of amateur radio traditions and customs. It should continue to hold that strong place in our hobby. ¶

CLUB HAPPENINGS

SPAGHETTI DINNER PLANNED

The JARC is having a **free** (that's right, we're supplying everything) spaghetti party, at 6:30pm February 23rd. This event will preempt the regular second monthly meeting, and would be an excellent time to invite anyone who might be interested in amateur radio, or wants to be introduced to the club. There will be games, a door prize and lots of spaghetti to eat. Plan to come.

If you have any questions, call Betty Miller KBØTKX 624-4903, Mary Ann Phillips 624-3353, or Cherylann Dannelley 781-6739.

QRP PROGRAM SCHEDULED IN MARCH

March 23rd, the JARC will be privileged to have Kelly Ellison, WBØWQS, and some QRP friends, provide an introductory tutorial of all aspects of QRP. Topics will include operation, antennas, equipment construction, and purchase. A question and answer session will follow.

Kelly, originally from Denver, was first licensed when he was 13. He presently manages KSWM radio in Aurora, and is a member of the ARCI QRP Organization.

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interfering with licensed Amateurs operating on those bands, and for harassment or perceived retaliation," said the letter, signed by Hollingsworth.

"We view this matter as extremely serious," he told the ARRL. Hollingsworth called the alleged operation "contrary to the purpose of Amateur Radio" and said that it "endangers the entire Amateur Radio frequency allocation internationally."

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THE WORLD OF VHF/UHF

BY JOHN TUDENHAM WØJRP

Not much VHF news to report. The winter six meter E-skip season has been slow with just a few scattered openings. We hope that during the January VHF contest, conditions will improve.

Here is a list of VHF calling frequencies for SSB, FM, and CW.

6 METERS

50.110 MHz - DX calling frequency (US stations use only to contact DX stations)
50.125 MHz - Domestic calling frequency
52.525 MHz - FM calling frequency (also ragchew frequency).

2 METERS

144.200 MHz - Calling frequency (keep contacts short on this frequency or move off for rag chews)
146.520 MHz - FM calling frequency (keep contacts short)

1-¼ METERS

222.100 MHz - Calling frequency (ok to ragchew but keep QSOs short)
223.500 MHz - FM calling frequency (also used for ragchews)

¾ METERS

432.100 MHz - Calling frequency (ok to ragchew but keep QSOs short)

Listed below are some area nets and their meeting times.

2 METERS

147.210 MHz - ARES Weekly Net. Meets every Monday night 6:30pm.
147.210 MHz - JARC Monday Night Net. Meets every Monday night 7:30pm.
144.250 MHz - Eastern Oklahoma SWOT net. Meets each Monday 9pm. Net control - WD5GVP

6 METERS

52.520 (52.525) MHz - Joplin Area Six Meter FM Net. Meets every Thursday at 9pm. Called by WTØY or KBØMSB.

Submit your totals of states and grids worked to John, WØJRP, and I will list them.

73 for now.

SAREX WORKING GROUP CHAIRMAN CALLS FOR COMMON SENSE AND COOPERATION

The Chairman of the Space Amateur Radio EXperiment Working Group, Roy Neal, K6DUE, has lashed out at those he says have "sought to destroy" the Amateur Radio International Space Station (ARISS) program. SAREX, an ARISS partner, coordinates the Amateur Radio efforts of AMSAT, ARRL, and NASA for manned space flights.

"I have been distressed by the recent actions taken by some individuals," he

"...NASA does not want or need problems with Amateur Radio"

said. "They are waging a war on our international cooperation." Neal's remarks, issued January 18 as a "White Paper to ARISS" focus on ARISS' concerns about the direction of the independent so-called MAREX-NA project headed by Miles Mann, WF1F. Neal does not mention Mann or his program by name, however.

"NASA and its partners have enough problems putting together an international space station. NASA does not want or need problems with Amateur Radio," Neal said. "These individuals have written messages saying they plan to create such problems if they don't get their way."

With cooperation from some Russian space officials, Mann and his colleagues recently deployed an amateur slow-scan TV system aboard the Mir space station. The system has been operating on Mir's normal 2-meter packet and FM voice frequency, however, instead of on the 70-cm frequency coordinated for the SSTV system.

10 METER BEACONS OFFER GOOD CODE PRACTICE

If you have listened to the ten meter band recently during the daylight hours, you will hear many CW signals between 28.2MHz and 28.3MHz sending the same thing over and over. These are known as "Propagation Beacons". They are located all over the world, and there are hundreds of them. Most run low power and use automatic keying. They give a variety of information including call letters, QTH or grid locator, Email address, mailing address, and sometimes, a brief summary of what they are running, such as power, antenna, etc.

These stations provide good code practice as they repeat their message over and over. This morning in just ten minutes of listening, I identified the following of many heard:

LA5TN NORWAY 28,110 KHZ
KW7M WA 28,224
PY3ARL BRAZIL 28,229
VE1CBZ NB CANADA 28.234
N1ME ME 28,243

These stations will be heard almost daily during the daylight hours, Europe during the morning hours and to the west better in the afternoon. Give it a try.

73, John Tudenham WØJRP

"Unfortunately, they apparently have little appreciation for the complexity, level of detail, and effort required to ensure a permanent Amateur Radio presence in space," Neal said. "These people have demonstrated their willingness to flout the coordination program by announcing that the SSTV system will continue to operate on 145.985 MHz instead of the 70-cm frequency coordinated for that purpose."

Saying the time has come "to turn off the nonsense and turn on the common sense,"

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ARES UPDATE RED CROSS CLASSES SCHEDULED

The first Thursday evening meeting of the Jasper County ARES was held January 7th, 1999. This meeting was held in the dining room of the Joplin City Hall, with 9 amateurs present. The speaker was Carol Kerr of the Joplin Red Cross.

Carol had called earlier both asking for help, and offering needed disaster education courses. As she explained it to us, the courses begin with a 3 hour introduction to disaster training, followed by a 3 hour course of damage assessment. She indicated that restrictions require a minimum of 10 and a maximum of 20 participants. Carol then excused herself from the ARES meeting, to let our group discuss her offer.

I think everyone was impressed. At the time of this writing, we have 13-yes's, 1-maybe, and Carthage may have 3 or 4 additional participants.

Later I contacted Carol, gave her the numbers, and she agreed to set a date for the courses, and scheduled February 13th since the Red Cross needs time to arrange for their instructor to come from out of town.

The Red Cross Training session will be held Saturday, Feb. 13th beginning at 9:00 AM. The first course will be Red Cross Disaster Introduction. It will last for three hours, then break for one hour lunch. At 1:00 PM the Damage Assessment class will begin, and run until 4:00 PM.

If you are interested in participating in these classes please contact me, as we don't have many seats left.

For further information contact:

**Andy Gabbert KAØTUD
Jasper County EC
(417) 673-8371**

(Continued from page 4)

Neal said he does not plan to engage in a contest of words "which no one can win." At the same time, he said, the door is open to consideration of all viable Amateur Radio projects for the International Space Station.

"The ARISS team welcomes participation by all," he said, in an apparent reference to claims by Mann that ARISS was turning away outside projects.

ARISS partners met last weekend in Houston, Texas, to discuss project status as well as plans for the initial, interim, and permanent deployment of Amateur Radio equipment aboard the ISS.

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the frequency where the radio is tuned. If the Radio is tuned to local WMBH at 1450kHz, the signal will appear at 1895 kHz in our 160 meter band.

These are just a few of interference devices, we also get QRM from light dimmers, touch lamps, computers, cable TV leakage, and other modern electronic gadgets. ¶

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The League also called on the FCC to devise a means for those not holding a TIN--such as foreigners who hold US ham tickets--to comply with the ULS rules which require an applicant to provide one. "One possibility for these persons would be for the Commission to issue them some substitute TIN or some other type of registration number," the League proposed.

Finally, the ARRL pointed out to the FCC that neither the main Form 605 nor the Amateur Radio Schedule D contains a section for VE certifications and called on the Commission to modify the form to include the section as it now appears on Form 610.

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HAMFEST CALENDAR

Note: Listings are updated as information becomes available.
Courtesy of Lonnie Allen NØTBO

February 6, 1999 West Memphis, AR
Dixie AR Group
Contact Kellye Farris, KB5RCE
432 Ross Ave., West Memphis, AR 72301
870-732-8724

E-mail: dixiefest@media-two.com

February 6, 1999 Mound City, Kansas
Mine Creek ARC
Contact Bill VanKirk, WØPT
P.O. Box 83, Mound City, KS 66056
913-795-2080 E-mail: bvkirk@kanza.net

February 7, 1999 Crane, Missouri 65633
12:30 P. M. to 4:00 P. M.
Location: Stone County Senior Citizens
on Main Street Talk-in freq: 145.330 -
Tables \$5.00 - first come first serve basis.
E-mail n0tbo@gte.net

February 20, 1999 Russellville, AR
Arkansas River Valley AR Foundation
Contact Margaret Alexander, KC5MCS
1511 North Jackson,
Russellville, AR 72801 501-968-7270
E-mail: ealexand@cswnet.com

March 13, 1999 Kansas City, MO
Ararat AR Shrine Club
Steve Dowdy, WJØI
12411 Olive St., Kansas City, MO 64146
816-941-3392 E-mail: sdowdy@qni.com

March 13, 1999 Fort Smith, Arkansas
Hamfest - Fort Smith Civic Center
For information: Kelsey Mikel - KK5KU
8604 Urban View Dr.
Fort Smith, AR. 72903
501-651-7003 E-mail: kk5ku@amsat.org

March 14, 1999 Crane, Missouri 65633
12:30 P. M. to 4:00 P. M.
Location: Stone County Senior Citizens
on Main Street Talk-in freq: 145.330 -
Tables \$5.00 - first come first serve basis.
E-mail n0tbo@gte.net

March 14, 1999 Tulsa, OK
Oklahoma State Convention - Tulsa, OK
Green Country Hamfest Association

Buy/Sell Trade

Wanted - Communications Receivers and Transmitters (Esp. Hallicrafters)

Military Gear, AM Transmitters,
Components and Junk.
Lloyd D. Williams, KAØZCX

1/99

**For Sale - Realistic 202, 2m FM
Handheld** w/battery and charger
\$60.

Frank Guodace, NØLEG (417) 781-7933
1/99

**For Sale - ICOM 290-A 2m All Mode
Transceiver** fine shape
\$275 OBO.

Ralph Orahood, KBØZHC (417) 358-7540
11/98

**For Sale - Heath HW-24T Handheld
VHF/UHF**, Needs charger.

Ask \$200
Eric Gilbert (417) 623-2584

10/98

**For Sale - 2 CushCraft DX-120 2m
collinear beams.** Each array 20 elements.
Total 40 elements. Includes phasing
harness.

Ask \$100
Jim Scott, WBØIYC (417) 781-2211

10/98

Merlin Griffin, WB5OSM
P.O. Box 470132, Tulsa, OK 74147-0132
Phone 918-622-2277
E-mail: info@GreenCountryHamfest.org

April 4, 1999 Crane, Missouri 65633
12:30 P. M. to 4:00 P. M.
Location: Stone County Senior Citizens
on Main Street Talk-in freq: 145.330 -
Tables \$5.00 - first come first serve basis.
E-mail n0tbo@gte.net

April 17, 1999 Joplin, Missouri
The Joplin ARC presents HAMFEST '99
John Q. Hammons Trade Center,
3615 Range Line, Exit 8B from I-44
8am-3pm, Tickets \$5, tables \$10,
commercial \$20. VEC exams 9:30am
Hourly drawings, Grand Prize at 2pm.
Talk-in frequency 147.210+.
For tickets or tables, contact Jim
Johannes, NØZSQ, 417-782-9087
E-mail jjohannes@janics.com

FEBRUARY 1999

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 19:30 JARC MonNITE NET 147.21 MHz WØIN REPEATER	2	3	4 17:30 THURSDAY NITE OUT-	5	6 09:00 BREAKFAST-
7 14:30 -15:30 JARC SLOW SCAN NET	8 19:30 JARC MonNITE NET 147.21 MHz WØIN REPEATER	9 19:30 JARC BUSINESS MEETING	10	11 17:30 THURSDAY NITE OUT-	12	13 09:00 BREAKFAST-
14 14:30 -15:30 JARC SLOW SCAN NET	15 19:30 JARC MonNITE NET 147.21 MHz WØIN REPEATER	16	17	18 17:30 THURSDAY NITE OUT-	19	20 09:00 BREAKFAST-
21 14:30 -15:30 JARC SLOW SCAN NET	22 19:30 JARC MonNITE NET 147.21 MHz WØIN REPEATER	23 19:30 JARC PROGRAM MEETING	24	25 17:30 THURSDAY NITE OUT-	26	27 09:00 BREAKFAST-
28 14:30 -15:30 JARC SLOW SCAN NET	<p>Don't Forget! Meetings are at City Hall.</p>					

Meeting Times, Testing, Events, 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.

Club members often meet weekday mornings in Joplin for coffee at the Target Store (3151 East 7th St.)

around 8:30 a.m. Members also meet for breakfast on Saturday morning around 8:30 AM in the restaurant at Smitty's (18th and Maiden Lane) in Joplin.

1999 CLUB OFFICERS:

President: Ray	KBØSTN
Vice-Pres. Jackson	KBØWFE
Treasurer, Jim	NØZSQ
Secretary, Betty	KBØTKX

Amateur Radio VE Testing

License testing by volunteer examiners takes place on the 3rd Thursday of each month (except July & August) at 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 provides 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: jimscott@janics.com

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. '73 and Thanks. **Jim WBØIYC ¶**

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P.O. Box 2983
Joplin, Missouri 64803-2983