Nixa Amateur Radio Club, Inc.

Open Mic

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April Fools 2011

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March Meeting Wrap-Up

The meeting was called to order by Jeff Kerr, KC0VGC, filling in for the Club President who was away with his family on one of the annual club vacation cruises.

Jeff Morrissey, KB0WVT, read the treasurer's report as seen later in the newsletter and Terry Zembsch, KC0SQE, filled us in on the latest VE testing session. Thankfully, the weather was good as we had 123 people test today at the outdoor test session, 104 passed, congratulations to them all! The club's

Kent Doucey, N0IRM, gave the update on the technical committee's latest project, and also sought reports for the new 160-meter beacon the club installed at the club ranch south of Highlandville. We have been receiving multiple reports from stations worldwide, but have not received any locally. He is afraid the old dishwasher that he is loading up on 160-meters is way too efficient, so we may have to look for a less efficient antenna to get the local, stateside coverage we are seeking.

In other business, the club will be applying for the Exon-Valdez annual grant to fund our next project, which includes travel expenses for those volunteering in manning communications stations for the New York City marathon. We are only looking for about 200 more volunteers for the event which requires 500 amateurs total. Kent Doucey, N0IRM, is the point of contact , so e-mail him at n0irm@nixahams.net if you would like to participate in this all expense paid trip to New York for this event.

The meeting was then turned over to Jim Adkins, KC0IYI, for a demonstration on how to solder on PL-259 connectors while under water. 73,

The latest J-Pole antenna project

By: James Adkins, KB0NHX

Hard to believe it, but I think Spring is finally here. And with Spring, comes the latest, greatest antenna projects, too!

This month, we are focusing on a heavy duty, multi-band J-Pole. The theory is quite simple and well known. Everyone knows that the larger a conductor is in diameter, the broader the bandwidth. So, in an attempt to make a J-Pole that would cover 6-meters through 900 MHz, I constructed a test J-Pole using the whistle in my ditch that goes under my driveway. These

Area Nets of Interest

Daily Nets:

146.835 -	7:00 a.m.	Little Switzerland ARC Net
3.963 LSB	5:45 p.m.	Missouri Phone Traffic Net
146.625 -	7:00 p.m.	Douglas County Check-in Net (110.9 Hz)
3.585 CW	6:30 p.m.	Missouri Section CW Net
3.585 CW	9:45 p.m.	Missouri Section CW Net
3.803 LSB	10.00 p.m.	Roundtable SSB Net

Mondays:

146.970 -	7:30 p.m.	Lawrence County ARES Net
145.270-	8:00 p.m.	Missouri VoIP Net (162.2 Hz)
147.195 +	9:00 p.m.	Taney County ARES Net

Tuesdays:

145.490 -	7:00 p.m.	Sky Warn Check-in Net (136.5 Hz)
145.230 -	7:30 p.m.	Christian County ARES Net (162.2 Hz)
146.805 -	7:30 p.m.	Newton County ARES Net (127.3 Hz)
145.270 -	8:00 p.m.	Bible Belt Christian Fellowship Net (162.2 Hz) *

Wednesdays:

146.820 -	7:30 p.m.	EARS Club Check-In Net
145.210 -	8:00 p.m.	Barry County ARES Net (162.2 Hz)
147.150 +	9:00 p.m.	Combined KARC - TLARC Net

Thursdays:

3.963 LSB	7:00 p.m.	Region D ARES HF Net (SW MO area)
145.270 -	7:30 p.m.	Nixa ARC Check-in Net (162.2 Hz)*
147.225 +	8:00 p.m.	Greene County ARES Net
145.350 -	8:00 p.m.	Four-State ARC Net (103.5 Hz)
52.525	9:00 p.m.	Joplin 6-Meter FM Simplex Net

Fridays:

146.910 -	8:00 p.m.	SMARC Friday Night Net (100.0 Hz)

Sundays:

146.775 -	8:00 p.m.	SWMO D-Star Net (w/ wide area links)
147.345 +	9:00 p.m.	Stone County ARES Net (162.2 Hz)

The latest J-Pole antenna project (continued)

items are pretty expensive, so, having a nice lead on some Teflon sheets, I purchased those and slid them around the whistle to isolate it from ground. The next problem I had to overcome was what would I use for the other section? So, I decided to build my wife a nice "metal" pole that would go over the driveway. This will allow for some nice vines as well to be planted at the end of the drive, so she was immediately interested. With the help of my brother and his portable, solar powered welder, we found some scrap whistle and made the metal section for the antenna. The open end is supported by yet another piece of metal whistle, but with plastic insulators so the sections to not touch. By ordering one of the pieces with the black Teflon covering, it is able to mate flawlessly up with the driven element, plus it allows for a nice, robust look. It was really hard to come up with a matching method, All that stripped coax just wasn't going to work. So, after speaking with a local engineer, I decided to use a quadruple gamma match array made out of 1/2" copper pipe. I was able to sweat a 1/2" heliax cable connector on the end of it, which mates up with my LMR-900 feedline. Well, the results are in. The antenna registers a 1.1 to 1 on all bands, and the power handling capacity is the legal limit easily! Drop by and check it out next time you are in the area, you won't be disappointed!

The KAB302 Series 5 Hydragon Thyratron HF Amplifier
By: Thad Huff, KC0AQG

Several years ago, after the debut of the Umac 606 power phantasatron, I became interested in "not so legal limit" amps for the shack. I spent quite some time prototyping ultra high power tube amplifiers that could be used in the home ham shack. My goal was to have the ability to produce at least 100 times legal limit. At this point you may already be asking why you would want to operate an amp that could produce much more power than legal limit. The answer is simple really, real hams like real power, and bragging rights. Nothing says I'm on top of the game by announcing that you are operating an amplifier based on the KAB302 Series 5 Hydrogen Thyratron or "K5" for short.

Fortunately, most homes now have 200 amp electric service, this allows for just enough energy to power one of these unusual amps in your shack, providing that all other circuits in the house are turned off. Even the most conservatively designed, efficient K5 based amplifiers will tax your main utility feed so extreme caution must be taken. The power supply will have to be completely customized for split phase 220, unless you have a real hams dream, 3-phase power to your home. After studying the electric supply of the Hydrocombobulator I decided the best approach would be to have a custom supply unit manufactured with multiple babinski type windings formed of pre-famulated tetranucleotides all surmounted by malleable algorithmic shielding. The quadroseptic rectifiers would then be doped in yttrium Y90 ibritumomab tiuxetan to provide a level of efficiency never before achieved. Keep in mind throughout the proc-

KAB302 Series 5 Hydragon Thyratron HF Amplifier upon completion

ess that we only have around 40,000 AC Watts to play with here, in the average home so efficiency is of absolute importance.

Unlike the Umac 606, the KAB302 Series 5 Hydrogen Thyratron is much more home friendly. The 606 utilized a triple distilled, single isotope, urinated tungsten filament and thus required near impossible air cooling requirements. This resulted in the 606 running hot causing a most inappropriate odor. Although the 606 could withstand hours of use in an excessive temperature state due to its self-flushing design, the user could not. The filament has been completely redesigned in the K5 allowing for twice the electron emission at less than half the current. One caveat however, is that it is prone to adductor spasmodic dysphonia which leads to crippling elastic collisions, rendering the tube useless. To prevent this a magnetic phaser probe is used to focus a modulated high energy electron beam through a small drift tube was incorporated to prevent the back flow of midichlorian radiation.

The K5 structure is computer machined from a single piece of pyrolytic graphite. Considering the nature of the pyrolytic graphite and the precise manufacturing process using the latest transmyocardial laser revascularization technology, we will see increased temperature tolerance of 2,500 C. This means the tube can withstand continuous use with minimal cooling, therefore reducing cost of operation and noise in the shack.

The grid structure is produced by feeding acaricide into a low-pressure chamber containing a centripetal force extractor. This unique design is what allows for such high efficiency and the process is now known widely in the field

Continued on Page 5

Protecting your antennas from Ice Buildup

By: Kent Doucey, N0IRM

Anyone that has any amount of aluminum in the air has ice in the back of their heads. The last few years have produced some storms that were not kind to outside antennas. With this in mind I have always thought if I could find a remedy for this problem that could be my contribution to the ham community. I thought of sprays that would repel water before it froze among other things but I kept coming around to one thing, heat. One cold day I walked through the comfortable house and into the extra warm laundry room. Ah Ha, heat, now just to get it up the tower.

After some browsing the local hardware super stores and the web I had idea. Immediately out of the back of the dryer I use a y type or sweep T PVC fitting with a gate valve. I'm not sure the original use of this valve. You can cut a short piece of flexible dryer house to join this with the dryer. You will, of course, reconnect one side with your original exhaust hose. Connections are made with pressure type fittings. The other side of the sweep T began routing your sections of flexible dryer hose. These can be joined together with 6 inch pieces of 4 inch PVC pipe, making a "male to male" connector. Routing this can be difficult. In my installation, this runs through the cabinets above the dryer, through the sheetrock ceiling, across the attic then out the exterior wall to the tower. From the base of the tower I run the same flexible dryer hose to the top of the tower. Now it's time for the second half of this project.

At the top of the tower, this project became more complicated. I wanted to distribute the heated air over a couple of antennas, one being my larger tribander. I began

Hose in attic of Kent Doucey, N0IRM, routing warm air from dryer valve to antennas on tower.

with reducing my 6 inch dryer hose to 2 inch size with 2 adapters, first a 6 inch to 4 inch, then with a 4 inch to 2 inch. Once I got the hose down to 2 inch I built a manifold with 2 inch T fittings. I built my manifold to have 5 outlets for my tribander (one for each element) and one outlet for my VHF/UHF antenna. From these fittings I used 2 inch plastic flexible hose. This is the hose used for pool filters, you can find it at some hardware stores or pool supply stores. I painted this silver so in blends in with the tower and antennas for a better look. I used zip ties to fasten this hose to the boom of the tribander, then putting a T fitting at each boom to element clamp. These T's are made for the pool filter hose and most likely will have to be found at the pool supply. Lastly I routed one side of the manifold to the top of the tower and dead ended the flexible hose at the base of the VHF/UHF vertical. All fittings were glued with PVC type cement and then a pressure or hose type clamp installed. All hose was zip tied to the tower and antennas with high-quality UV resistant zip ties. Don't forget to include a rotor loop! I zip tied the flexible tubing right to the feed line in the loop.

Now for the test. I switched the sweep T at the dryer over to the tower position and fired up the dryer on high. The hot air traveled up the hose and where the hose reduces from 6 to 2 inch pressure in dramatically increased. Once the air reaches the 2 inch manifold it is distributed out to the antennas. Of course toward the end of the manifold pressure is decreased but on my installation still produced enough hot air to warm the antenna. The air reaches the ends of the hose and warms the elements which in turn radiates to the end! The elements are not glowing but are above air temp. I hope this helps out the next time mother nature is rough on us. I have not had a chance to use the invention (THANK GOODNESS!) but it does work great for tower climbing on cool days. I'm thinking of added T fittings with shut offs along the 6 inch main hose so warm different areas of the tower while climbing. Enjoy!

Schedule of Events

- **April 9 2011:** VE Testing session—4:30 p.m.—The Tower Club—902 St. Louis St, Springfield, MO
- **April 9, 2011:** Nixa ARC Club Meeting—6:00 p.m.—The Tower Club—901 St. Louis St, Springfield, MO—Presentation by Bobby Flay on proper preparation of ham via infrared radiation

April 2011

Sun	Mon	Tue	Wed	Thu	Fri	Sat
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

KAB302 Series 5 Hydrogen Thyratron HF Amplifier (Cont'd)

as centripetal acceleration banking. Once the extractor was incorporated, engineers in a laboratory were able to produce 125% rated power at maximum ventricular currents.

The anode portion of the tube consists of a apically mounted transresonance cavity which will, under specific conditions, increase the ban zhi lian phenonom, again, increasing efficiency and power output ability. The posterior of the cavity is coated in a blackbody ternary acid compound, this eliminates the need for energy wasting filtering. The transresonce cavity also combats diamagnetism, which can lead to shorter tube life. Immediately to the left of the transresonance cavity one will find the vector tube nebulizer. This component was a bit of an afterthought. After several years of failed tuning components as a result of strong field ligand, engineers ultimately decided to implement them on all version 12.00.3 tubes and later. This device basically starts an internal hybridization process to direct strong field ligand energy to the blackbody ternary acid plate, a process known as indirect immunofluorescence . Without this us hams would have never been able to create ham rigs from these as output tuning networks would have been immediately destroyed by the extreme voltage pulses emitted from the extreme nature of amplification found in the K5.

I have had much success operating this rig. Aside from very high material costs and astronomically high energy costs, I think any ham would enjoy a KAB302 Series 5 Hydrogen Thyratron based amplifier in the shack.

Technical Committee Update

This month, the club's technical committee finished up our latest project, the building of our latest Amateur Radio Satellite. With so many club members active on 6-meters, we decided to make this satellite operate on 6-meters. Using a circularly polarized, internally mounted squalo type antenna, the downlink to users is on 51.3725 MHz using the latest MotoTRBO DMR method, down converted from UHF to 6-meters via the latest transverter released by Down East Microwave. The satellite's uplink is on 901.33875, which uses another ultra-narrowband MotoTRBO 900 MHz repeater for continuous duty cycle. Plans are to have the unit launched with the last shuttle launch later this year. With specially formulated solar cells, and an on-board asteroid collision

The latest Club Satellite Project

avoidance system, we hope the unit will last upwards of 20 years. Technical committee member James Adkins said that "this is just a testament to what a bunch of guys can do when given unlimited funds and too much time." Since Jeff Morrissey, KB0WVT, has a relative that works in the satellite business, we were able to procure parts for this satellite that would normally not have been possible.

We encourage everyone to get involved with this project. If you don't have radios for these bands and the MotoTRBO mode yet, don't fret. Other club engineers are working out those issues as you read this newsletter.

That's all for this month, check back next month for more details.

Nixa ARC Repeaters

6-Meters: (Republic)

53.270 / 51.570 PL 162.2 Hz

2-Meters: (Nixa)

145.270 / 144.670 PL 162.2 Hz

1.25-Meters: (Springfield)

224.280 / 222.680 PL 162.2 Hz

70-Centimeters (Springfield)

442.275 / 447.275 PL 162.2 Hz

33-Centimeters (Springfield)

927.5375 / 902.5375 PL 162.2 Hz

March 2011 Treasury Report

Beginning Balance: $218.34

Debits	*Credits*	
$ 0.00	*$120,000.00*	*Membership dues*
	$ 5,000,000.00	*McKesson Board of Directors grant Behalf of Jeff Kerr, KC0VGC*
	$ 1,000..5	*Dividend*
$0 Total Debits	*$5,121,000.58*	*Total Credits*

Ending Balance: $5,121,731.50

My Homemade Weather Station

By: Jim Adkins, KC0IYI

The other day, I was mulling around the house feeling quite blue because it was cold and rainy and I couldn't play golf. Since I was so fixated on the poor weather, and there was absolutely no one on the radio to talk with, I designed a homemade weather station. The only thing I had out in the garage I could use was a log on a chain. It had been given to me as a white elephant gift at last years Millwood retirees security Christmas banquet. I had been trying to figure out what to do with this, now I finally had a plan! I wanted something that could give me an indication of precipitation, and wanted to see where the wind was coming from and how cold it was outside. The idea was now coming into my mind. So, I found a galvanized lag bolt and used it to hang the chain to the ceiling on my front porch. After using some formulas I found on the Weather Channel website, I determined the proper angle of vector wind shear vs barometric humidification resonance. In a nutshell, this is how it works:

If it's rainin' outside, the log is wet. If it's windy outside, the log's swingin', and if there's ice on it, it's cold outside.

I call it the "Redneck Weather Station"

We're on Yahoo!

Nixahams@yahoogroups.com

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NIXA AMATEUR RADIO CLUB, INC.

Those who think this newsletter is true, has no blasted earthly clue!.

We're on the Web!
www.nixahams.net

The Nixa Amateur Radio Club, Inc., call KC0LUN, was founded in April 2002.

The club assists in providing communications for many different public service events. We work with Greene and Christian County ARES and the National Weather Service by providing communications for Sky Warn spotting. We also work with Greene County ARES and other organizations in providing communications for the MS-150, and American Diabetes Association fundraiser bike rides. We hold special event stations for local hams to participate in, such as the annual Sucker Days celebration and the annual ARRL Field Day drill for emergency preparedness. We encourage our members to not only participate in our club events, but to also be members of their local ARES and RACE's groups, and the Christian County CERT team.

The club provides 5 repeaters that are open for all hams to use. These repeaters are part of a sophisticated linked system which allows all repeaters and VoIP nodes to be linked together simultaneously for nets or emergency events and announcements. We also provide VoIP modes, such as EchoLink and IRLP for our members to explore. Currently, we are working on a club HF station to be installed at the Nixa Fire Department General HQ Emergency Operations Center.

The club holds "The 6-meter Net" on the 53.270 repeater weekly on Mondays at 8:00 p.m., which covers all radio bands 6-meters and below. We also have a weekly check-in net on the 145.270 repeater on Thursdays at 7:30 p.m. The net is simulcast on all 5 Nixa ARC repeaters, IRLP and EchoLink. Feel free to check in on any band! The 145.270 repeater also hosts the "Bible Belt Christian Fellowship Net" held on Tuesdays at 8:00 p.m.

Visit www.nixahams.net for more exciting information!

Nixa Amateur Radio Club Elected Officers

President: James Adkins, KB0NHX

- James started serving the club as Secretary when the club was founded, and then moved into the Vice-President position. James and his wife, Kim, KCØGKP, have two children, Sierra and Kolton. James works as a technical field engineer and repairs two-way radio and repeater equipment daily. In the past, James delivered pizza while attending college. James' primary interests in ham radio include maintaining the club repeaters and promoting amateur radio. He enjoys operating HF through 1200 MHz from his home station.
- *E-mail: kbØnhx@nixahams.net*

Vice-President: Kent Doucey, N0IRM

- Kent was appointed to Vice-President by the board after the resignation of Chris Cochran, KB0WZC, as President in October 2010. Kent and his wife Wendy have 3 children: Richard, KD0HGY, Britney, and Katie. Kent has been a law enforcement dispatcher and deputy sheriff in the past and currently serves on the Stone County 911 board. Kent enjoys HF SSB and digital operations and building HF antennas. He writes the "Below 50 MHz" article for the newsletter and volunteers on the club's technical committee.
- *E-mail: nØirm@nixahams.net*

Treasurer: Jeff Morrissey, KBØWVT

- Jeff is a charter member of the Nixa Amateur Radio Club and took over the treasury job almost 2 years ago. Jeff has a daughter, Brooke, KCØYVF, and son, Garrett. Jeff works in management and has a background in computer networking. Before ham radio, Jeff was an Internet guru and ran a BBS from his house. Jeff's primary interests are SkyWarn spotting, being active with Christian County CERT, and other emergency communications support.
- *E-mail: kbØwvt@nixahams.net*

Secretary: Jeff Kerr, KCØVGC

- Jeff obtained his license in 2005 and began to immediately make an impact with the club and was elected as secretary shortly thereafter. Jeff and his wife Dee have two daughters, Emily, KCØYOO, Stephanie, and a son Brandon. Jeff works in PC Networking and considered computers his hobby before amateur radio. Jeff's primary interests include 6-meters and HF SSB as well as 900 MHz FM.
- *E-mail: kcØvgc@nixahams.net*