In This Issue

The Official Newsletter Of

Stoned Monkey VHF
Amateur Radio Club

N9UHF
www.stonedmonkey.org

WeLCARS

AMATEUR RADIO

W9WLC
www.welcars.org

"Holy crap! KC2UFO was right! No, wait... That's just a street light..."

Upcoming Events

WeLCARS Meetings and Events

General Meetings
Fridays 7PM
Fox Lake Community Center
23 South St., Fox Lake

VE Session
Friday October 9 - 7PM
Fox Lake Community Center

Hamfests

Milwaukee Repeater Club
Nov 14 - Milwaukee, WI
www.mrc91.org

38th Midwinter Swapfest
Jan 10 - Waukesha, WI
www.warac.org

On the Air

144 MHz SSB SWOT Net
Sundays 7PM
144.250 USB

Informal Net / Radio Tradio
Sundays 8PM
KB9I Repeater
145.41 (-) PL 107.2

Other Events

Lake Co RACES
Oct 5 - 7PM
Lake County EOC

MCWA Meeting
Oct 6 - 7:30PM
Nunda Township Hall

McHenry Co RACES Meeting
Oct 27 - 7PM
McHenry County EOC

Contest Calendar

Fall VHF Sprints
432 - Wed Oct 7 7PM-11PM
902+ - Sat Oct 17 6AM-12PM
50 - Sat Oct 24 6PM-10PM
www.svhfs.org

10-10 Sprint
Oct 9 7PM - Oct 10 7 PM
28 MHz Phone, CW, Digital
www.ten-ten.org

Arizona QSO Party
Oct 10 11AM - Oct 11 7PM
1.8-144 MHz Phone, CW, Dig.
www.azqsoparty.org

North Amer. RTTY Sprint
Oct 10 7PM - 11PM
3.5-14 MHz RTTY
www.ncjweb.com

Iowa QSO Party
Oct 17 9AM - 6PM
1.8+ MHz Phone, CW, Digital
www.wa0dx.org
[This is the first IA QSO Party in some time. - Ed.]

Illinois QSO Party
Oct 18 12PM - 8PM
1.8-144 MHz Phone, CW
www.w9awe.org

CQ WW SSB Contest
Oct 23 7PM - Oct 25 7PM
1.8-28 MHz   Phone
www.cqww.com

10-10 Fall Digital QSO Party
Oct 23 7PM - Oct 24 7 PM
28 MHz Digital
www.ten-ten.org

Mobile Antenna Mount Extravaganza
Chris Burke - N9YH, WeLCARS Secretary/Treasurer

Friday September 25 had the WeLCARS crew gathering at the friendly confines of the Worldwide Headquarters for a show with everything but Yul Brynner. Joe N9IFG passed out some more loop antennas and showed off the tripod mounting scheme on the back of the new Blues Rover. Tom K9TMS was also on hand to demonstrate the rover trailer he built using a Penninger tipper and his flatbed trailer.

While Tom's setup was a bit more sophisticated (read: expensive) Joe reported his setup worked well. Tom used a light duty rotor and had a 2m/432 log periodic at the top of the mast. Joe plans on using just the loop antennas with no rotors. While the loops do have some directivity to them, unlike a beam they do radiate in all directions making a rotor far less necessary.
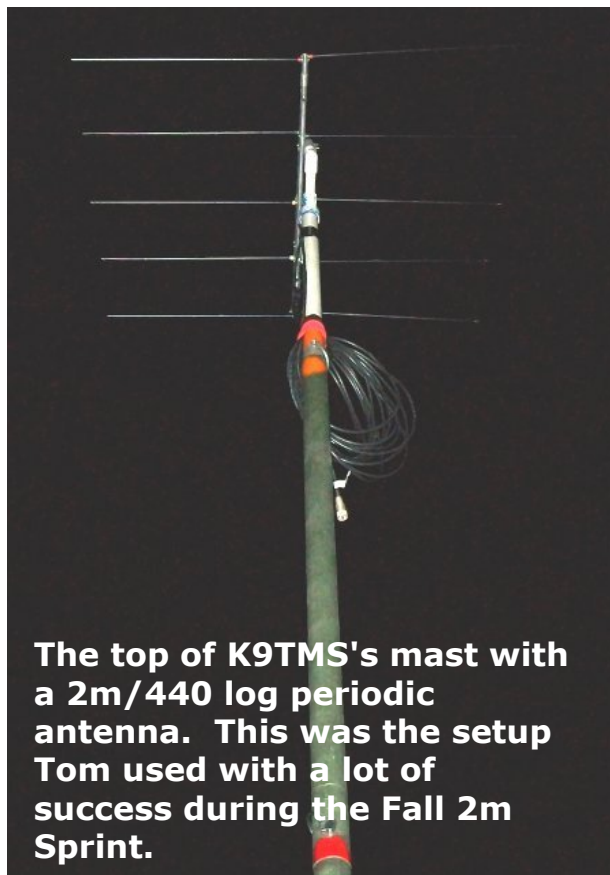

N9IFG's tripod mounted on a hitch platform. Joe hopes to get BDR529 for plates.

K9TMS's trailer mounted Penninger base with rotor

Is this the new Bluesmobile or what?

The top of K9TMS's mast with a 2m/440 log periodic antenna. This was the setup Tom used with a lot of success during the Fall 2m Sprint.

Ubuntu Linux Review

Chris Burke - N9YH, WeLCARS Secretary/Treasurer

Recently thanks to an unfortunate incident involving a certain 3-year-old little girl my Windows XP installation took a major crap. The file system on the C: drive was completely toasted, and working black magic using a Ubuntu Live CD to try and resuce the master boot record (MBR) didn't help. Because I feared the hard drive was on its way out, I was able to successfully lobby the Procurement Department for a new 750 GB drive. 750 GB left a lot of room for experimentation, so I thought I'd take a shot at a dual boot setup featuring Windows XP Service Pack 3 and Ubuntu Linux version 9.04. I also wanted to give it a look see because I absolutely hate Vista, which came preinstalled on Dawn's laptop. I think Vista is so bad that I honestly don't have much faith in Windows 7.

For a little background, I'm not a complete initiate when it comes to Unix/Linux. I cut my teeth back in the day before the World Wide Web on Unix servers in high school and college featured some nice HP Unix workstations in various engineering labs. I've used Linux on and off for a few years, though it had been more than 5 years since I had seriously given Linux any thought. At that time I was doing some computer crime investigations at the University of Illinois, and Linux offered a free alternative to software packages that were very expensive on Windows. The problem back then was many packages had to be compiled from source. Sometimes that worked, but just as often you would find you were missing some obscure prerequisite and it might take all day for the Linux neophyte such as myself to get it to work.

Meanwhile, back at the ranch, about that time Canonical was funding the development of a version of Linux that focused on usability. Ubuntu 4.10 was released on October 10, 2004, with updates about every 6 months thereafter. The current version, 9.04 Jaunty Jackalope, was released on April 23, 2009, and 9.10 Karmic Koala is scheduled for release on October 29. Ubuntu is the most popular Linux distribution in use, accounting for slightly more than 30% of all installed distributions as of a 2007 survey at DesktopLinux.com. The other major players are openSUSE at 19.6% and Debian, which Ubuntu is based on, at 11.7%. Gentoo at 7.2% and Fedora at 6% round out the top 5, with the others accounting for less than 3% each.

So, has five years of Linux development increased usability? Definitely. The first thing I noticed after installing both Windows and Linux is that while Windows still takes a lot of work installing Microsoft and third-party software, Ubuntu is ready to go. Windows doesn't come with software to read PDFs, no flash player, and no office suite. Those of us dissatisfied with Windows Media Player and Internet Explorer also find ourselves downloading alternatives like Firefox. Ubuntu comes with Firefox, a PDF reader, the GIMP (an open source Photoshop alternative), and the Open Office suite ready to go. The kicker is all these applications are installed with the OS, which takes no more time than installing Windows.

The Linux file system is also a high point. Where Windows ties your different partitions and drives to C:, D:, etc., Linux, and Unix in

general, integrates everything in to a unified file system. You might have your home space on a different drive, but you'll never know it in practice and you'll never have to worry about an errant program that looks for "My Documents" or "Program Files" on the C: drive if you've moved it to D: . (Yes, you can move "Program Files" from C: to D: , but I wouldn't recommend it because of the poorly written programs that will look for it on C: .)

The best part about Ubuntu, though, has to be the Synaptic Package Manager, a graphical front end for apt-get. Picture Windows Update on steroids and a central place to get new software. The days of having to compile software from source are gone for the most part. Simply adding the source for the program of your choice (For example, Scribus, the desktop publishing program used for the Journal, wasn't among the software installed with Ubuntu), click a box, and Ubuntu not only downloads and installs the software for you, but it will also check for updates.

Other plusses? Once you install a package that gets rid of the default baby poop brown motif for a more pleasant blue, Ubuntu looks great. The installer decided that I could move along at a whopping 1600 by 1200 on my desktop and it looks fabulous. Other interesting UI tweaks: I can move the mouse pointer to another window and scroll it with the scroll bar without changing focus. That's genius. Ubuntu also starts up quickly and doesn't seem to get bogged down as much as Windows XP did. Ubuntu also supports NTFS partitions, so you can easily access all the data from your Windows install. NTFS operations are noticably slower than in Windows if you have to move or copy a lot of data, but it's a fair trade off.

There are some interesting inconsistencies

between Windows and Ubuntu (specifically the Gnome window manager) that might throw you off at first. For example, in Windows the "OK" button in a dialog box is on the left and "Cancel" is on the right. In Ubuntu it's the other way around. This gave Emily no shortage of problems when trying to print a Polly Pocket picture. Even those of us old enough to read sometimes find ourselves clicking the wrong button.

It's all not sunshine and roses, though. Some bits of software still require some interaction with the command line for installation. Usually this is for security reasons: a growing trend in software is to digitally sign the distributions, so the end user can be sure the download hasn't been hijacked with all sorts of viruses, trojan horses, or other associated malware. In the Linux world, the GUI hasn't caught up with the security applications so obtaining the public keys for software has to be done using the command line. I wouldn't relish having to explain typing "gpg --keyserver wwwkeys.eu.pgp.net --recv-keys EEF818CF" followed by "gpg --armor --export EEF818CF | sudo apt-key add -" to grandma. Worse yet is not every developer uses the same key method. I followed the instructions to install the Code::Blocks development suite but was told that the software wasn't installed. A quick "apt-get install" command had me up and running, but for the computer impaired that's a big stumbling block.

The other major negative is still software availability. It's still a Windows dominated world, and amateur radio is no exception. Logging software programs for Windows are all over the place, Windows also has Ham Radio Deluxe. Linux has a few alternatives like fldigi for digital sound card modes and CW (think DM780) and RoverLog, but not nearly as many as Windows does. Many successful programs on Linux are ported to

Windows, such as all the ones named in this article (OpenOffice, Scribus, the GIMP, fldigi, and RoverLog), but that's not often the case the other way around. In the local software development crowd, K9TMS still refuses to embrace .NET so I think we'll see him writing cross platform Windows/Linux applications sometime after hell freezes over. There are sometimes ways to get around these limitations. Many Windows programs will run using Wine, an emulator that translates Windows system calls to the equivalent Linux/X Windows ones. Also Novell's Mono Project will let you run some .NET applications, even those coded with Windows Forms like the distance and bearing program I wrote earlier this year. Those aren't perfect, though - while the Windows compiled binary for my .NET program would run, some of the math routines gave interesting results...

The final verdict for this nerd is Ubuntu is definitely a keeper. I thought I would see myself dividing my time more or less equally between Windows and Ubuntu, but I've hardly booted into Windows at all. These days with "cloud" applications like Gmail instead of traditional e-mail clients the need to be tied to a specific operating system is really going by the wayside. Ubuntu is also very popular outside the United States, so you'll find the other apps you take for granted on Windows like Adobe Flash work equally well.

If you've ever thought about Linux, it might be time to give it a try. You might find yourself ditching Windows for good.

Recrystallizing Linksys WRTs
Steve Lampereur - KB9MWR

Some hams in Germany have been recrystaling Linksys WRTs to go outside of the Part 15 band: Arsene, LX1TB has modified the Linksys WRT54G(S) models to tune the frequencies below 2400 MHz for better fit with the hamradio bandplan. This German website has the details:

http://www.rlx.lu/~lx1tb/wrt54gs/ [Unless you speak German, paste the URL into http://translate.google.com or go to Steve's blog where he did the work or you at http://kb9mwr.blogspot.com/ - Ed.]

At the recent Ham-Com convention in Texas, Kipton, Moravec, AE5IB and Glenn Currie, KD5MFW made this chart with the data about the crystal change.
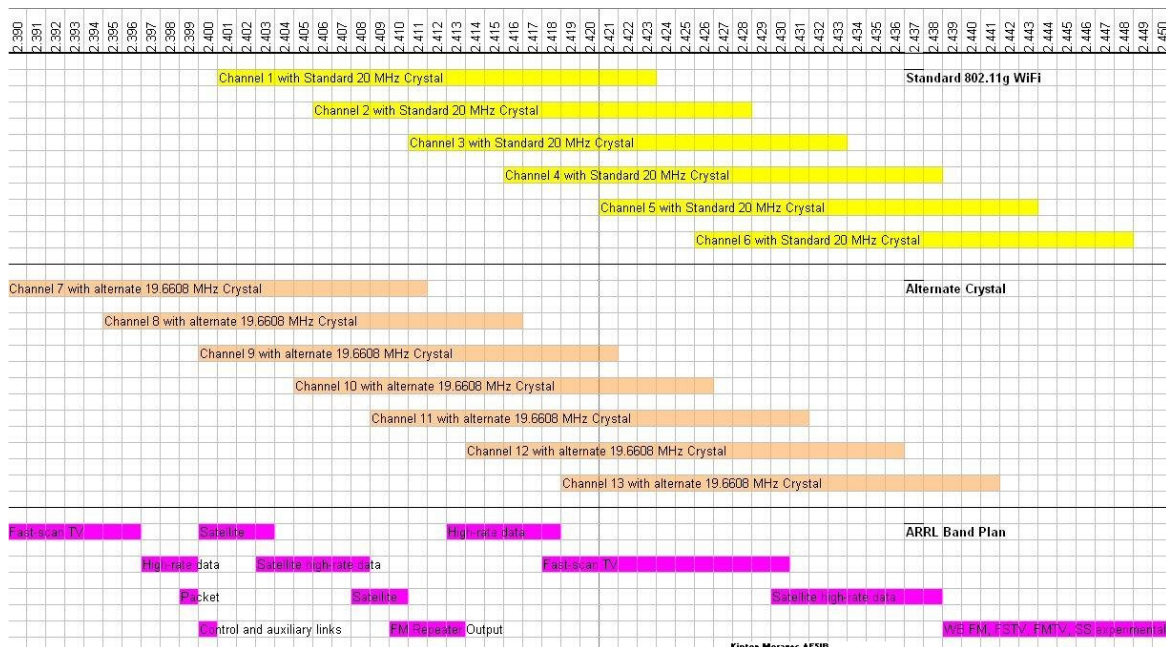
The whole screen is the amateur radio spectrum allocation in that frequency area. The top section is the standard off the shelf WiFi. You can see that Channels 1-6 fit into the spectrum. The second section is replacing the 20 MHz crystal on the transmitter with a 19.6608 MHz crystal (the next lowest that is readily available and costs under $1) With it we can use channels 7-11 in our band. Other countries allow the unit to have Part 15 channels 12-14. The third section is the ARRL Band plan. he notes, because we are spread spectrum, we look like background noise to the narrow band signals.

Kipton tends to think maybe with a software change we can add those channels also and with the crystal change still be in the Amateur Radio Spectrum. With the crystal changes, the units can not be detected by unmodified standard 802.11 devices, and impossible for them to connect.

The tests showed that by making a simple 59-cent crystal change the HSMM signals could be moved to between IEEE Channels 2-3. Also shown at the Ham-Com HSMM presentation is a spectrum analysis from Wi-SPY by MetaGeek. The yellow shaded area shows the official 802.11 Channel 2 center. The red shaded section shows the official 803.11 Channel 11.

The CPU clock and ethernet clocks are totally different from the radio crystal, so both units "think" they are on Channel 11. Only the crystal-modified "slide band" unit is somewhere between Channels 2 and 3 as shown by the green and blue accumulated readings. Both units were tested for about 3 hours for frequency stability, etc.

You can read more about this in the Summer 2009 CQ-VHF Magazine HSMM column by John K8OCL titled "New Amateur Digital Video (ADV) and Revolutionary HSMM-MESH at Ham-Com."
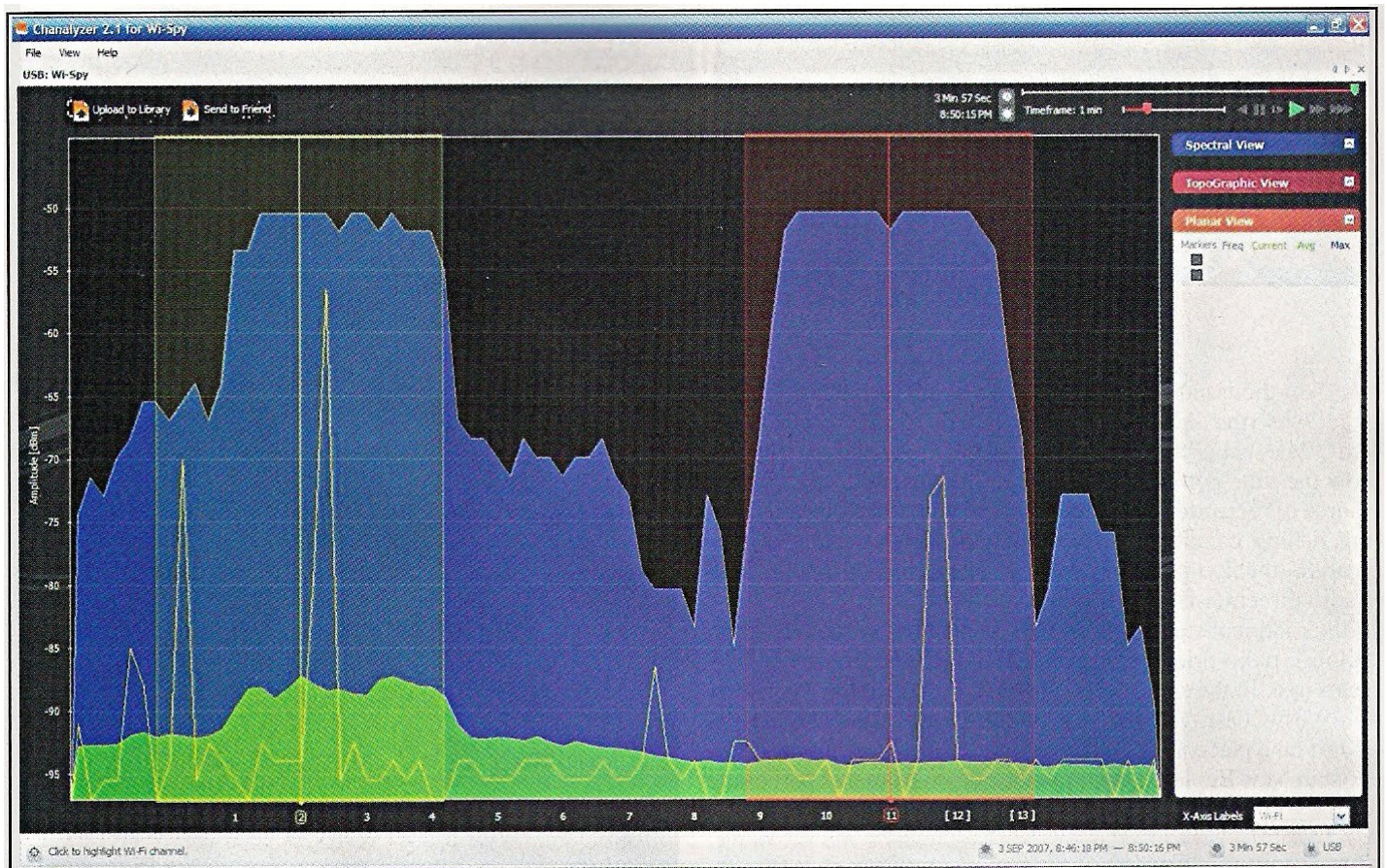
Quick and Dirty Mag Mount Ground Plane
Chris Burke - N9YH, WeLCARS Secretary/Treasurer

The 222 MHz Sprint was fast approaching, and I had a problem. I had a radio and a mag mount antenna, but a rove just wasn't in the cards for me that evening. Out in the hinterlands of Fox Lake midway between the grid convergences in Elk Grove and Milwaukee, I was sure to need some height if I was to have any chance of working the rovers who had planned to be out that evening. I had plenty of mast, but I was going to need some kind of ground plane for that mag mount if I was going to get anything to work. As I pondered my dilemma, I remembered seeing a story on the 'Net awhile back where the author had used a 222 MHz mag mount antenna for his base station. The name of the author and the location of the site have been lost among in the haze of my poor memory, but I remembered that he had used an electrical box to secure the antenna and to mount some radials. My plan was to use some 12 gauge solid wire for radials, screw them to the box, and use a short piece of conduit to slip the whole assembly into one of my fiberglass mast sections. That way I could get my antenna up about 25 feet with the hope of decent performance. Off to Home Depot!

With several big spools of wire at home, Emily and I only needed to buy a ceiling box, some ring terminal ends, a length of 1/2 inch EMT conduit, and a package of set screw connectors. Total cost: $7.50 exactly. Not bad for a guy on a meager allowance, especially considering that I have more than 9 feet of conduit and several connectors left over for future projects. Wire would add a little cost to your project, but you don't need much, just a few feet of something solid that will take solder or make a solid electrical connection. Gauge isn't that important, so chopping up a couple feet of 2-conductor 14 gauge Romex that you might have lying around after a rewiring project would also
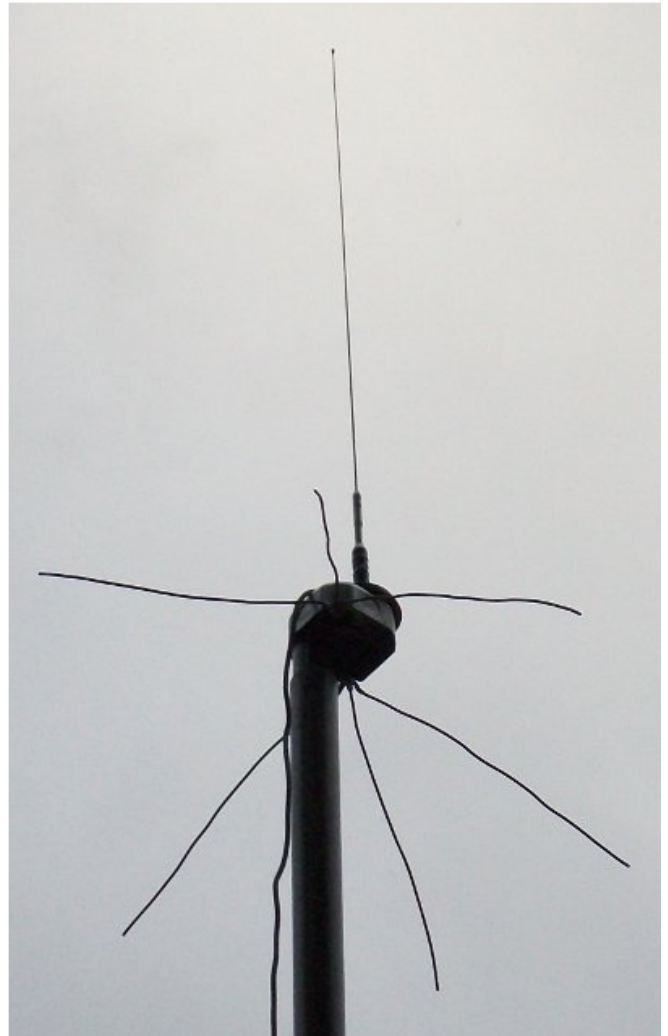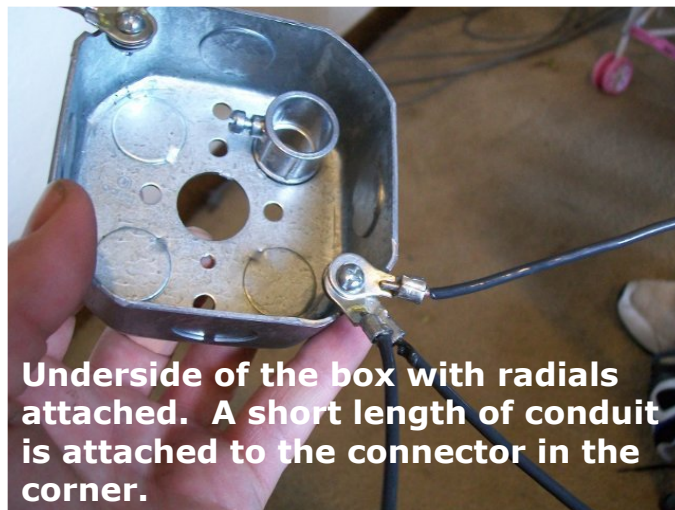
serve you well.

My initial plan was to connect a small length of conduit in the center of the box to go down the center of the fiberglass mast to stabalize the whole assembly. I forgot the connector for the conduit wasn't flush, so I ended up having to move the conduit to one of the corners. This ended up working to my advantage, as the wall of the fiberglass military mast fit snugly betweeh the conduit and the walls of the box.

The next part of my plan was to drill holes for 4 radials around what was now the top of the box. But I figured I could use the screws on the bottom normally used for mounting a cover or light fixtures. I used the formula

Project materials laid out

Underside of the box with radials attached. A short length of conduit is attached to the connector in the corner.

234 / frequency in MHz to arrive at a radial length of about 12 1/2 inches. I cut six radials to length then crimped and soldered a ring terminal on each. I screwed three to each screw, then fanned them out so they were roughly evenly spaced. I put the antenna on top, ran a short length of coax into the living room, and tested the whole works on a few repeaters. The signals from every repeater I tried were fantastic and a huge improvement over my former antenna setup, which consisted of the mag mount attached to a surplus computer case inside the Man Cave. Confident that I at least had a decent signal, I sat back and waited for the contest contacts to roll in.

Wow. This guy should be a hand model.

Unfortunately, that's where the story gets completely lame. I was able to barely hear some of the rover stations in the noise, but I wasn't able to make out anything intelligible. I was able to work N9UM a short distance away in Wauconda, but that was my only contact Q. Still, I think the project was a success - formerly marginal repeater signals were much improved and I stood no chance of having a nice ragchew with N9UM using my "hillbilly base," as Brett KB9YCO would call it, but with this setup he was easily S9. With pretty flat band conditions, I'm laying the blame for the contest flop at the feet of just not enough height.

So, despite the lackluster contest results, I think the added performance was well worth the $7.50 spent. The project was pretty simple to complete, the most time consuming part was measuring each of the radials, and everything was done in about an hour. The box can also be reused with other bands, simply attach radials of different lengths. In short, while not as good as a decent base station antenna, this was a cheap and effective way to have your mag mount perform double duty as a base or field antenna.

Odds and Ends

November Phone Sweepstates

...is coming up faster than you think. Current plans are to have 2 multi-op stations out of the WWHQ with amplifiers. Mark your calendars for November 21-22! Our hope is to be able to make a "clean sweep" of all 80 ARRL Sections this year. This is also a club competition, so you're encouraged to get on from home even if you come and work at the multi-op effort, you just can't work the club stations (W9WLC and N9UHF). Contest buffs: get on or give a listen to the CQ WW SSB contest and the CW Sweeps beforehand to get a handle on propagation to the various parts of the country to time our quest for sections.

W1GHZ Transverter Project

Mike AA9IL talked at the October 2 meeting about building some of Paul W1GHZ's transverters as a club project. The W1GHZ transverters are fairly low power, but at microwave frequencies high gain antennas are fairly easy to build so they're still very effective for line of sight microwave communication and experimentation. W1GHZ has plans for 902 MHz, 1.2 GHz, 2.3 GHz, 3.4 GHz, and 10 GHz. The transverters from 2.3 and up can be configured to use the same local oscillator, further reducing cost. The LO boards and each transverter module are about $80 (i.e. you'll need an $80 LO plus $80 transverter to get 1 band, additional bands are $80 for the transverter boards.). Surface mount soldering is required, but AA9IL promises a tutorial. Plans are to do this as a group before the June VHF contest.

Third Annual WeLCARS Holiday Party and Rythym and Blues Revue

...is also coming faster than you think. Anybody with award ideas send them to chris@n9yh.com - there have already been some great suggestions for this year. This is also the WeLCARS general election meeting. Positions up for grabs are El Presidente, Vice President, Secretary, and Treasurer (yes, Secretary and Treasurer and technically two positions. You people keep electing the same guy to both.). Send your nominations to joeserocki@gmail.com.

ARRL Divison Vice Director Elections

El Presidente Joe N9IFG would like to remind people to vote in the ARRL election for Vice Director of the Division. For those that aren't keeping score at home, like your humble servant, the Divison encompasses the Illinois, Wisconsin, and Indiana sections. Interestingly, the two cadidtates are from suburban Chicago: Kermit Carlson K9XA and Howard Huntington K9KM. In other news, we also learned that political posting on the ILClubs Yahoo group gets the fur flying.

Jetstream JT220M 50W 220 MHz FM Mobile

One of our intrepid field reporters just received the new Jetstream JT220M from Universal Radio. This radio marks the first non-Alinco 220 MHz radio in some time, and boasts an output power of 50W, a welcome 3 dB increase over the 25W typically offered in a 220 rig. While KC9NJZ hasn't been able to test the radio yet, he brought it to a recent club meeting and the construction seems very solid. The radio features 99 memories and an alphanumeric LCD. A $29.95 PC programming cable is optional. ($239.95 www.universal-radio.com)