



WCARC News

October 2005

www.wcarc.com

ARES Report

This has thankfully been a more quiet month. Support for Rita continued in the early part of the month and that part was intense. There has been plenty of activity preparing for this year's Simulated Emergency Test (SET) and also with infrastructure build up.

Hurricane Rita Support

I reported last month that month that NQ5L, WB5VGJ and KI5DR all did Jasper area duty providing communications for the food transportation trucks that were delivering 20,000 plus meals a day. One of the difficulties with communications was having to rely on 40M. Often signals would just skip over the relatively local communications and require relaying the typically complex communications. Requiring HF mobile operators also greatly reduced the potential volunteer pool and it was tough getting enough operators. NQ5L returned convinced that establishing a local VHF repeater would greatly improve things.

Our Section Emergency Coordinator, KK5CA had come to the same conclusion and we set to work trying to organize a repeater there. This was no simple process as there was no initial information about any towers surviving and these were off on remote logging roads that were made impassible by the storm. With help from NA6M, we investigated locating an antenna on some commercial broadcast alternatives but this went no where. Finally, a Jasper communications team was able to find a workable tower in Buna and get a generator there – this tower had much needed county communications infrastructure and a spare VHF antenna / feedline up 200 feet. While all that was going on, we were scrambling here to find a repeater to transport. K5AB offered to take down his repeater in Mills County and that was the initial plan. This frequency was coordinated and looked favorable. Our editor, KE5ZW got permission from TxDOT to use one of their Motorola Quantar repeaters and this became the plan.

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Join Us For Breakfast

WCARC Breakfast - Saturdays at 6:45AM
Monument Café
1953 S. Austin Avenue
Georgetown Texas 78627

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WARC Meeting Minutes

Williamson County Amateur Radio Club
October 6, 2005

The WCARC meeting was called to order by President Mark Stennett, NA6M. There were 37 members and visitors who signed the attendance sheet. Jon and I counted about four more for a total of 41.

The minutes were approved as posted in the WCARC Newsletter. Treasurer's Report – Jon Boles, K5AEM

September, 2005

Beginning Balance	\$ 2,688.66
Receipts/Deposits	\$ 87.00
Expenditures	\$ 213.00
Ending Balance	\$ 2,562.66
ARES Funds Available	(\$ 167.09)
WCARC Funds Available	\$ 2,562.66

The September 2005 Treasurers report was approved as read.

ARES Report – Galen Helmkamp, WA0YVQ

Reference the WCARES Report.

The ARES meeting location may be moving from Round Rock Fire Station #1 to Round Rock Fire Station #6.

Repeater Report – Consensus

The repeater is working.

DX Report – John Warren, NT5C

The sun spot cycle is pretty bad these days. There was only one DXpedition to report on during the last month – K7C Kure Atoll. It had an interesting on-line, semi-real time log.

Contest Report – John Warren, NT5C

CQWW SSB is coming up the end of October. It's a good contest to work and also good to get new DX contacts. The exchange is 59-04 for our area. The CQWW DX contest will be the end of November with the exchange of 599-04.

Old Business

Fall Picnic – Jim Bittick, KC5BHF

The Fall picnic will be on Saturday, October 8, 2005 at the Arbors at San Gabriel Park (the usual location). It will start around 5pm and members are asked to bring a dessert. Jim will take care of everything else.

New Business

Program Announcements Prior to the Meetings

It was requested that the program for a given month's meeting be posted on the WCARC web site prior to the meetings. Dick Foster the club's hard working Vice President, W5TA, pre-announced the following programs:

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ARES Report

WCARC Minutes

Paul set the repeater up and he, NQ5L and KD5PUJ set out for Jasper to setup the machine. They arrived and were taken down the long, recently cleared logging road to the site and installed the machine. Unfortunately, the generator kept getting GFI faults. K5PFE (who lives in the area) said he would get a get the proper plug from Walmart in the morning to fix this problem and our team headed home that night making for a very long day indeed.

Well, when K5PFE got the power problem corrected, the good news was the repeater had great range. The bad news is that the audio was super weak. Probably all those power faults while the Quantar was booting up messed up the programming. Sigh! Within minutes of informing Paul of the problem, he committed to programming another one up for us and also promised a second smaller repeater as a spare to keep Murphy away. Within a couple of hours, he had the machines ready. NQ5L agreed to a third trip to Jasper and to drive the machines. He and I left the evening of the club meeting and managed to find rooms in Huntsville a bit after midnight – better than spending the night on a gym floor converted to a flop house. We were up and on the road at 6AM, got some breakfast and arrived in Jasper early that morning. It was very interesting getting to see the damage first hand after seeing via Winlink and from relay many HF messages. We went down the same logging road and delivered the repeater. That tower had a tree collapsed across one of the guy anchors – fortunately not a large tree. Two very large pine trees were leaning precariously towards another guy wire. If either of those trees had collapsed, that tower would have been destroyed. I'm pleased to say that this repeater worked fabulously and was responsible for ending the need for HF nets associated with Hurricane Rita. I would estimate that Williamson County conservatively provided 20% of the HF resources for the Jasper effort and was also responsible for getting this repeater going – I am immensely proud of this effort by our group – good job!

New Infrastructure added this month

Thanks to Jim NQ5L (our Digital Communications AEC) for hosting a third Packet workshop for our friends in Burnet and Llano counties. We also had some WC-ARES folks participate.

The big infrastructure effort this month has been getting antennas and radios installed at the new Round Rock EOC at Fire Station #6. Thanks to KB5TWO, WA0YVQ, KD4HNX and KD6ZJH for getting this work done. In addition to getting a permanent Paclink station going there, we also have a new Telpac node at this location. The KB5TWO-10 node is our 7th Telpac resource in the area. Great job!

Annual Simulated Emergency Test (SET)

A reminder that this year's Simulated Emergency Training (SET) moved to November 5th. This year, we are partnering with N5SSI and his Texas Severe Storms Intercept and Lone Star Storm Spotters Network teams to create a weather related drill that I hope will be both interesting and instructive. The fun will start around 8AM with a deployment to the EOCs soon afterwards and will run until around 11:30AM.

We have teams for all the EOCs plus the Georgetown Healthcare System plus the Sun City Fire station. ARES members from Burnet and Llano counties will also be participating. More participation is welcome – please contact me if you are interested.

After the SET, we will have a debrief session at my house around the pond. A BBQ lunch will be provided for participants – you must be part of the SET to attend the BBQ. Please RSVP to me. Directions for the BBQ

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- November – Free Logging Software
- December – Echo Link
- January – Software Defined Receiver

Outlaw 100 – Dallas Mellichamp, KD4HNX

Dallas needs two or three more SAG Wagon drivers and asked those interested to see him after the meeting or send him an e-mail. The plan would be to meet at Denny's for breakfast at 6am (optional), deploy for the race at 7am, and the race starts at 8am.

Officer Nomination Committee – Mark Stennett, NA6M

The club needs nominations for the various WCARC officer positions for the elections in December. Due to Mark's new position on the board of the Texas VHF FM Society, he will not be able to serve a second term as president. Dallas Mellichamp, KD4HNX, agreed to manage nominations for all positions.

November Refreshments

Dean Hamilton, K5FDH, agreed to provide refreshments for the November meeting.

WCARC Program

The program for September was a discussion of Texas Department of Transportation's use of HF by Paul Gilbert, KE5ZW.

Minutes submitted by the honorable club secretary, Greg Worthington, AG5W.

WA7BNM April Contest Calendar

Please see: <http://www.hornucopia.com/contestcal/contestcal.html>

WILLIAMSON COUNTY AMATEUR RADIO CLUB OWNED EQUIPMENT

Reviewed at 5 August 2005 WCARC Meeting

Tower Work

- 1 Gin Pole - KE5RS, John Benedict - 30-Aug-03
- 1 Tower Step - N5NMW, Jeff Schmidt - 7-Aug-03

Antenna measurement

- 1 MFJ Antenna Analyzer - K15YG, Steve Cowell - 3-Feb-05
- 1 MFJ Grid Dip Adapter - K5KVN, Stuart Rohre - 3-Feb-05

Antennas

- 1 Butternut HF Vertical 10M-80M - AF5Z, Bob Helms - 6-Feb-05
- 1 Cushcraft 6-ele 440MHz Beam - AF5Z, Bob Helms - 6-Feb-05
- 1 Cushcraft R7 HF Vertical - W5TA, Dick Foster - 3-Feb-05
- 1 Hygain triband antenna - W5TA, Dick Foster - 3-Feb-05
- 1 Mosley Triband Ant - K5AEM, Jon Boles - 3-Feb-05

Masts

- 2 Push Up Masts - AF5Z, Bob Helms - 6-Feb-05
- 1 Push Up Masts - KC5RPF, Ken Larsen - 3-Feb-05
- 2 Push Up Masts - KD5KQV, Virgil Buell - 4-Jul-03

Power Supplies

- 1 20 Amp Power Supply - N5TW, Tom Whiteside - 14-Jul-04

Miscellaneous

- 2 Heavy Duty Power Cords - K5HTK, Jim Hester - 3-Feb-05

Pending sale

- 1 DB Commercial Ant VHF 158MHz - AF5Z, Bob Helms - 6-Feb-05

ARES Report

Tom & Judy Whiteside
228 Wind Ridge Cove, Georgetown, TX 78628 512-863-6865

From Austin:
North on I-35, take exit #261 west (left) onto Hwy 29
West on Hwy 29 - go about 4.5 miles

Turn north (right) onto Cedar Hollow (marked with a green road sign)

Take 2nd right onto Way Cross
Take 1st left onto Lost River
Take 1st left again onto Wind Ridge
228 is about 1/4 mile down on the right
- numbers are not always in strict numerical order
- large 2-story red-brick
The name and number are on the mailbox

Weekly Packet net reminder:

A reminder that we have instituted a weekly Winlink check-in. Total check-ins are reported on the Sunday evening net. Winlink check-in is easy, just send a check-in note to nq51@winlink.org and cc: n5tw@winlink.org and tell us which node you used. You can check-in at your convenience anytime during the week – Jim asks that notes be posted before noon Sunday. We are encouraging folks to vary the node they use weekly to help exercise all the gear and keep you in practice – multiple check-ins via the different nodes are welcome.

The current nodes are:

KI5DR-5	145.73 (via ausrly-1)
NA6M-10	144.91
N5TW-12	145.03
N5TW-10	145.61
KD4HNX-10	145.01* (Georgetown Healthcare System)
W5LHC-10	145.01* (Cedar Park PD)
KB5TWO-10	145.01* (Round Rock Fire Station #6)

* = new frequency

Monthly meeting

The ARES meeting is the second Thursday of the month at the NEW Round Rock EOC at fire station #6 at 7PM. Fire station #6 is just west of the Dell Diamond off Highway 79. Go to the Dell Diamond and do a U-turn at the turn-around. Take the first right onto Joe DiMaggio Drive. The fire station will be your first left turn. The program will be a tour of the new EOC including our new station and a more detailed SET debrief. You don't want to miss it!

In conclusion

Hope to see lots of folks at the meeting. And please participate in our Sunday evening nets at 8PM. These are still on 146.64 (PL 162.2) while the 145.13 repeater is under the weather.

Tom Whiteside (N5TW)

ARES Emergency Coordinator for Williamson County

**Newsletter Deadline for Articles and Submissions
is the 25th of the Month prior to the month of
publication**

2005 Officers and Committees

President - Mark Stennett, NA6M

Vice President - Dick Foster, W5TA

Guest Speaker Committee

Vice President - Dick Foster, W5TA, Chairman
Tom Whiteside, Bob Redoutey, N5KF

Secretary - Greg Worthington, AG5W

Treasurer - Jon Boles K5AEM

Public Information Officer - Virgil G. Buell, KD5KQV

Newsletter Editor - Paul Gilbert, KE5ZW

Emergency Coordinator - Tom Whiteside, N5TW

Webmaster - Dallas Mellichamp, KD4HNX

QRM

.....by Mark Stennett, NA6M, President

Howdy folks,

It is November already which means officer elections are right around the corner. We will hold our annual officer elections at the December meeting so please let Dallas, KD4HNX know if you would like to nominate anyone, including yourself, for a club position. I raised my hand last year about this time and found it to be a lot of fun. Because of good folks like you, the WCARC is a great club to be a part of.

With the weather events we've had this year, I have been rethinking my personal station and have seen how important mobile HF can be. With this in mind, I have been looking at options and am seeing many choices for HF mobile antennas and radios. Perhaps a presentation by our members of their various HF mobile installations would make a nice program one month.

73, Mark

**WC-ARES NET... Sunday's
8 p.m. on 146.640, PL 162.2**

Some Experiments on a 40m NVIS Dipole Antenna.

Stuart Rohre, K5KVH

I have wanted to use my North South wooden privacy fence as a support for a 40m NVIS dipole to put up a version of the K5AXN, Super Gain 40m NVIS antenna from the web and "73" magazine. Jerry, K5AXN, is an old San Antonio ham buddy from our high school field days and hanging out at Radio TV Parts Co. ham dept. where Jerry worked. Jerry frequents 40m AM on Sunday afternoons, and has tried to get all of us old San Antone hams back on AM, or at least 40m.

The fence is the usual board fence approximately six feet high. The posts are a bit less than six feet, and thus I was going to use plastic electric fence standoff insulators that are about six inches long both as standoffs and end and center supports and insulators.

Due to an offset in the fence, one end location was pretty much dictated by that discontinuity, to have the wire clear of the posts and pickets.

Starting at that end point, I measured out 32 feet and that fell just past a post. However, I set a light plastic Radio Shack center insulator there, and looped the leg wire around the nearby standoff to keep it taut.

The other end had a post about one and a half feet past the 32 foot leg end point. In the interests of getting some quick measurements, I decided to leave that leg a bit longer, and get on with my goal of comparing a dipole alone, 5 feet 8 inches off the ground, with one aided by a reflector wire 5 per cent longer than the dipole and placed under it one foot off the ground.

My reasoning was that a low dipole is well known to have reduced center impedance compared to a free space dipole, and off center feed should raise the net impedance a bit in the favor of the coax feeder. The coax was to be strain relieved by the nearby standoff and then brought to the center insulator wire junctions along one leg, for a distance of six inches. Purists would question the balance of such a scheme, but by opting for coax feed, balance is a moot point.

A supply of ferrite beads is at hand to address RF on the outer shield problems if any. Putting up the slightly OCF (Off Center Fed) dipole, I used no. 24 gauge Teflon insulated hook up wire, which is silver plated. This is by no means necessary, but was in the junk box. The reflector was to be the same material. For quick testing it was resolved to staple the reflector to the base of each fence post, after first measuring the dipole without a reflector.

The low dipole was strung and the formula for dipole length used was the familiar free space, (but with end insulator effects), $468 \text{ over } f$ in MHz. Striving for emergency frequencies of 7285 and 7290, I cut the dipole 5 per cent long to give extra wire for folding back on the legs to adjust frequency exactly.

Using the nominal 32 foot leg on one side, and the 33 and one half foot leg on the other, my first MFJ antenna analyzer measurement showed resonance at 6.92 MHz, not the 7285 to 7290 desired. However, the SWR was a decent 1.2:1, and the Rs was 40 ohms with an inductive reactance of 4 ohms. Not bad!

How did I know the MFJ 269 was telling me inductive reactance? I simply moved the frequency higher, and the reactance term increased with no dips or reversals. Since $X_L \text{ equals } 2 \text{ Pi } f L$, an increase in f that increases X_L means the reactance term is inductive. (Capacitive reactance has a $1 \text{ over } f$ effect and decreases with frequency increase.)

I was curious about bandwidth, and moved up to as near 7285 as I could. At 7284 Rs is 56 ohms, but Xs is now 94 ohms. The SWR was up to 4:1. As expected, the small diameter wire does not have much bandwidth, even with the teflon insulation on it. It possibly is this teflon insulation that is affecting the frequency along with proximity to earth. The antenna is long compared to the space formula by 4 per cent or so, and insulation is known to make about a 2 per cent difference in an antenna wire length. Nearby house, trees, metal, plastic storage building, etc. all could be factors in changing resonance.

You should always allow more wire on your dipole lengths and consider the formulas to be a starting point. It is far

easier to shorten the leg by folding back wire on itself than to cut or splice.

This is left as an exercise for another day. On to the reflector addition and comparison!

Adding the reflector was more work than anticipated.

Stapling into treated fence posts takes a pointed staple, not ordinary ones. In addition, a persistent spider had an elaborate web right in the path along the fence. I missed it the first trip along the dipole layout, but inevitably forgot and backed into the web and put the spider to a lot of work. But, before I could finish the reflector, he had restored the web. I vowed to leave him alone, as I had no real objection to his scheme for dinner. However, I accidentally again knocked a bush that was one end of his masterpiece and he had to start over. When I was at the end of the daylight for my experiments, I found an hour after dark he had completed two replacement strands over a five foot plus chasm from the bush to some roll fencing! Now how do they do that? He was a most unusual speckled colored creature, with yellow on much of the body, and orange dots with legs compact to his body, not long like the usual garden spider.

Finally the reflector was attached one foot approximately, off ground. The same wire type was used, which is Belden 83003. SWR was now 1.8:1, and frequency shifted upward slightly to 6.964. Rs is now only 28 ohms, and Xs is again inductive at 5 ohms. This is in line with what a Yagi reflector does to a beam feed impedance, it lowers its impedance.

Moving up to 7285, however, SWR was now 5.6, with Rs of 38 and X_L of 88 ohms.

What I learned is that you will have to shorten your dipole when it is placed close to the ground, when made with this stealthy wire. The next chapter will show what going back to center feed does, and how much I have to shorten the dipole two legs to move up to 7285.

I had been considering using twin lead in a folded dipole configuration to take an expected 15 ohms center impedance up to 60 ohms, as an impedance transformer. In my particular installation, I am reconsidering this, given the measurements so far.

Incidentally, at this location, years ago I installed parallel attic dipoles for 20 to 10 meters. My later use of an MFJ analyzer on them, showed them to be lower in resonance than the low edge of the ham bands. They, too, had been cut by the 468 formula.

For inside the attic, I was not surprised at a variance, but maybe there is something about the dry and rocky soil under this house and location that detunes antennas?

Hopefully, my next day out will show that by shortening the overall dipole 4 percent, I can move the resonance to 7285 to 7290. My rigs will operate in up to 3:1 SWR, without a tuner, but the tuner is always a good option on these low bands if operating with stealth wires, of small diameter.

Although the antenna efficiency is not affected if the antenna is not resonant in the 40m band, somehow it tarnishes the tradition, to not at least get your antenna in the band. Along the way, maybe I can find a better constant for the antenna formula for this location, and my choice of small diameter antenna wire.

Incidentally, I fully expect the wires to stretch a bit. Another advantage to leaving extra wire on the ends is that you simply unwind the extra, pull the end taut, and rewind the excess. With 24 gauge, you can also tie a knot to further protect the teflon wire from slipping.