

WCARC NEWS

November 2006

www.wcarc.com

Williamson County Amateur Radio Club

PO Box 1644
Georgetown, TX 78627

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WCARC Officers

President

Bob Thompson, W5VGJ

Vice-President

Bob Farmer, W9BF

Secretary

Tim Stevens, KD5WML

Treasurer

Jon Boles, K5AEM

WCARC Staff

Public information Officer

Virgil Buell, KD5KQV

Newsletter Editor

Mark Stennett, NA6M

Webmaster

Dallas Mellichamp, KD4HNX

Guest Speaker Committee

VP - Bob Farmer, W9BF,
Chairman

Tom Whiteside, N5TW

Bob Redoutey, N5KF

Emergency Coordinator

Jim Russell, NQ5L

October Meeting Minutes

October 5, 2006

Bob Farmer, W9BF, opened the meeting by introducing himself as a member of the Program Committee who became Vice-President when Bob Thompson, W5VGJ, became President. The roll call followed producing 28 responses while there were 33 names logged in the sign-in sheet. September's meeting minutes were discussed and Galen Helmkamp, WA0YVQ, asked that the Treasurer's Report be changed to reflect corrections to the month and beginning balance (see Treasurer's Report, below). The corrected minutes were accepted.

Treasurer's Report - Galen Helmkamp, WA0YVQ

Galen Helmkamp, WA0YVQ, provided the report for Jon Boles, K5AEM, who is in New Mexico. The Treasurer's Report was approved by the members.

August*, 2006 (corrected Funds Section as indicated by *)

Beginning Balance:	\$3,467.83*
Receipts/Deposits:	\$ 185.00
Expenditures:	\$ 15.67
Ending Balance:	\$3,637.16
ARES Funds Available:	\$1,325.08
WCARC Funds Available:	\$2,312.08

September, 2006 (current)

Beginning Balance:	\$3,637.16
Receipts/Deposits:	\$ 40.00
Expenditures:	-
Ending Balance:	\$3,677.16
ARES Funds Available:	\$1,325.08
WCARC Funds Available:	\$2,352.08

Paid Membership

	Beginning	Ending
Individual	68	71
Family	19	19
Honorary	3	3
Total	90	93
Total Persons		112

WCARES Report - Jim Russell, NQ5L

There are a lot of activities planned for this month, one of which is the SET that is scheduled for the morning of Saturday, October 14th. Following the SET, on October 21st, volunteers will be helping with the Outlaw 100. Also, support will be

provided for the Texas Mission of Mercy (T-MoM) on November 10th and 11th. Contact Jim Russell, NQ5L, or Dick Lenning, KE5AGG, for more information about T-MoM. The next WCARES meeting will be in Round Rock at Fire Station #6 on Thursday at 7 PM.

Repeater Report - Tom Whiteside, N5TW

Tom reported that the club repeater on 146.64 MHz, with a tone of 162.2 Hz, is working well.

DX Report & Contests - Tom Whiteside, N5TW

Several countries without resident hams are only activated when DXpeditions take place. Two such events will take place in the next 3 months. The big one is VU7, Lakshadweep Islands, off the southwestern coast of India. Two trips are planned for Lakshadweep Islands with one being on January 15th. A smaller, earlier event for VU7 will be in December (no date yet). The call will be VU7LD and it will be led by Ananth Pai, VU2PAI, as well as Sarla Sharma, VU2SWS, who often visits her son who lives in Round Rock. VU7 has not been on the air in 14-15 years. The other DXpedition destination is Annobon Island, 3C0, which was last on the air in 1996-7. It will be active from October 21st to about November 3rd. The operator intends to use only SSB on 80-10 meters and CW on 160 meters. 3C0M will be the call.

Old Business

2006 TMoM - Texas Mission of Mercy

Dick Lenning, KE5AGG, distributed a Communication Plan to volunteers who intend to work at the T-MoM. The 2006 Texas Mission of Mercy free dental clinic will be held on Friday-Saturday, November 10-11th, at the Dell Diamond. There are currently 50 dentists and hygienists signed up to provide dental care. He is still looking for radio-equipped volunteers to man a number of stations around the Diamond in anticipation of providing service to approximately 1200 patients in two days. For more information visit:

http://www.wc-ares.org/tmom_event.html

Outlaw 100

Dallas Mellichamp, KD4HNX, said that he is short one Sag Wagon for the Outlaw 100, which will be held October 21st. More information can be found at:

<http://www.wc-ares.org/index.html>

October Meeting Minutes continued...

FIST Coast-To-Coast Contest

Cecil Turquette, K5YQF, talked about the FIST Coast-To-Coast contest, in which he used the Club call sign. He operated for about 8 hours making 80 contacts in 29 states, 3 provinces in Canada, and one location in New Zealand. Cecil recommends contests like this for those who are interested in CW.

New Business

Fall Picnic

The afternoon of October 14th, after the SET, has been selected as the afternoon of October 14th in Area B of San Gabriel Park.

REFRESHMENTS

As assigned by Bob Farmer, W9BF
 November - Mark Stennett, NA6M
 December - Dallas Mellichamp, KD4HNX
 January - Cecil Turquette, K5YQF

Program for October

Beware the Trojan Antenna - Bob Farmer, W9BF

WCARES Meetings, 2nd Thursday - 7:00 PM

Round Rock Fire Station No. 6
2919 Joe DiMaggio Drive
Round Rock, TX 78664

Website Of The Month

<http://www.cebik.com/>

Antennas

Service and Education

L. B. Cebik, W4RNL

Discover a wealth of knowledge on antenna design, feedlines and more at www.cebik.com



Join Us For Breakfast

WCARC Breakfast - Saturdays at 7:00AM
 Café On The Square Restaurant
 119 W 7th St
 Georgetown, TX 78626

WCARC Meetings, 1st Thursday - 7:30 PM

Wesleyan Retirement Home
1105 S. Church St.
Georgetown, TX 78626

- Mark Stennett, NA6M

Everywhere you turn, things are going digital. Broadcast television built new facilities to accommodate HDTV. The landscape at your local electronics outlet is changing to provide for the new world order. Broadcast radio is getting into the digital game too although the implementation is completely different from what television is doing.

While HD in HDTV stands for High Definition, in radio we call it Hybrid Digital. Unlike television, radio does not enjoy new spectrum in which to install this digital technology. Instead it is being built around the existing analog channels we are all familiar with by taking advantage of the spectrum mask allowed by the FCC.

HD Radio may be a new buzz word on the street but it has actually been in development since 1990. USA Digital Radio started out as a coalition of broadcasters, equipment manufacturers and research centers who came together to study digital radio and find ways to implement it within the existing spectrum. By 1991, IBOC or "In Band On Channel" was developed and saw many improvements over the years. Lucent Technology entered the game in 1998, bringing a wealth of technology to the scene through Bell Labs. In August 2000, USADR and Lucent merged to become Ibiquty Digital. The task these companies took on was certainly a challenge. Adding digital to the mix while preserving the analog service becomes a delicate process. With no new spectrum available, making use of the existing FCC mask is the only way to achieve the goal.

Getting receiver manufacturers on board is another challenge. If you build it, they will come. Ibiquty set up early adopter incentives for broadcasters in order to build up a base of installed systems. Receiver manufacturers are showing up with products now and consumers have more to choose from today than they did just 6 months ago.

Ibiquty has several patents on the technology which they are licensing to broadcasters as well as equipment manufacturers. While his technology works on AM and FM, this article is focused on the FM implementation. Figure 1. shows a typical FM HD signal with the analog component in green and the HD components in red. The FCC spectrum mask is shown in black. FM broadcasters need to keep their spectral energy

within this mask. In the early days of FM, modulation control was an approximate science. Today we have the means to control modulation to the point where adding these digital carriers is feasible while keeping each component from clobbering the other. Within the digital realm, we have basically 96 kilobits to work with. With that in mind, the data can

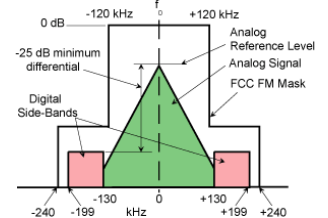


Figure 1.

be split up into separate streams or programs with each one taking its share of bits from the total available. See *HD Radio... page 3.*

WCARC Repeater: 146.640 MHz, 162.2 PL

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

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

ARES and more...

ARES REPORT — Jim Russell, NQ5L

The October ARES meeting focused on the upcoming Simulated Emergency Test (SET) event planned for October 14. Details were not given out in advance, but general information was given as to approximate time and duration. Vague hints were given as to what might be transpiring.

The SET scenario was a simulated chemical spill in the eastern part of the county. Officials were concerned because it was initially unclear if this was an accidental release or something done on purpose. Because of the concern, we opened the various served EOCs and also had the Red Cross location in Austin activated as well.

The county set up two simulated shelter operations, one at Round Rock High School and one at Georgetown High School. We dispatched vehicles to provide communications from those two locations.

We determined that there is a poor link between Williamson County and the Red Cross location. More work needs to be done to get frequencies programmed in advance. We also found that our procedures did not properly include a notification on some email traffic sent to the Red Cross that this was a test. Some of the staff was surprised to hear about a chemical spill on Monday when they read their email!

We had a total of 25 operators participate in the SET. It reinforced some of the things we do right, and showed us some areas for improvement as well.

ARES also provided support for the Outlaw Trail 100 bicycle event sponsored by the Round Rock Parks and Recreation department on October 21. We provided coverage along the route from the start of the race at 8 AM until 5 PM that evening. Including drivers and net control operators we had a total of 32 hams participate in the event. It was a useful exercise to hone net procedures even more after the SET.

We have one more scheduled public service event coming up in November. On November 10 and 11, the Texas Mission of Mercy will be conducting a free dental care clinic for those who can not afford to pay for such services. They expect to process 1200 people through this clinic in the two day period. We will be providing communications services during this event, along with hams from Sun City, Burnet, and Austin. This is a large event and will simulate a mass medical emergency. Actually, we probably shouldn't use the word "simulate" because this is for real. More information can be found on the ARES web site at www.wc-ares.org, or contact Dick Lenning, KE5AGG.

The purpose of ARES is to prepare ourselves for the eventual emergency or even disaster. Our monthly meetings are a mix of training and practical experience, including the occasional building project. We invite your participation at the level you can handle. We have positions open for those who want to really dig in, and others can only participate on a very limited scale. But all are welcome.

Reminders. The monthly meeting is on November 9 at 7:00 PM at Round Rock Fire Station 6 near the Dell Diamond. Talk in on the '64' repeater if you need directions.

Jim Russell, E.C.
NQ5L

HD Radio... continued from page 2...

In the current scheme, you can have three HD channels to choose from. The main HD channel or HD-1 is going to have the same programming as the analog channel Broadcasters are setting that channel for 64 or 48 kilobits. The remaining bits can be used to generate HD-2 and HD-3 signals if desired and they can run completely different programming than what you hear on the main channels. Most of you know that I work for KINV, 107.7 MHz in Georgetown,. When we installed HD Radio, we opted to run HD-1 at 64 kilobits and HD-2 at 32 kilobits. We are currently running a Tejano Spanish format on the HD-2 stream.



Figure 2.

Figure 2 shows the equipment used to generate our HD signals. KINV uses an auxiliary antenna to transmit the HD signal while the analog transmitter shown in Figure 4 feeds the main antenna. Figure 3 shows a close up view of the HD transmitter and monitor receivers. The antennas are shown in figure 5. The analog transmitter puts out 7.5 kilowatts while the HD transmitter only runs 69 watts. Through the antenna gains and line losses, this works out to be 10.5 kilowatts for the analog signal and 105 watts for the HD signal. Programming from the studios is converted to digital audio and compressed to fit the format using PAC or Perceptual Audio Coding. The HD-2 audio is mixed into the stream as it is fed to the HD transmitter by the HD signal generator at the bottom of figure 2. The result is digital audio that sounds really good for the low bit rate that it is. But don't throw out all your analog receivers just yet. Some early studies done by USADR indicated that the curve for HD receivers outnumbering analog only models was something like 12 years after



Figure 3.



Figure 4.



Figure 5.

implementation. Consumer receivers have only been on the market for a year thus far. Imagine some day in the future when the analog FM signal goes away and is replaced with an all digital signal. Given what can be accomplished in the analog guard band today, that has to be exciting.

If anyone would like a live tour of my Georgetown facility, just let me know.

Here are some links of interest:

<http://www.nrcstandards.org/DRB/USADR%20test%20data%20report/Usadrdoc.pdf>

<http://www.lucent.com/press/0598/980511.coa.html>

<http://www.lucent.com/press/0800/000823.coa.html> 73 de na6m

In Other News...

WA7BNM Contest Calendar — November, 2006

PSK63 Sprint	2000Z-2200Z, Nov 3
IPARC Contest, CW	0600Z-1000Z, Nov 4
	1400Z-1800Z, Nov 4
Ukrainian DX Contest	1200Z, Nov 4 to
	1200Z, Nov 5
ARRL Sweepstakes Contest, CW	2100Z, Nov 4 to
	0300Z, Nov 6
NA Collegiate ARC Champ'ship, CW	2100Z, Nov 4 to
	0300Z, Nov 6
IPARC Contest, SSB	0600Z-1000Z, Nov 5
	1400Z-1800Z, Nov 5
High Speed Club CW Contest	0900Z-1100Z, Nov 5
	1500Z-1700Z, Nov 5
DARC 10-Meter Digital Contest	1100Z-1700Z, Nov 5
ARS Spartan Sprint	0200Z-0400Z, Nov 7
WAE DX Contest, RTTY	0000Z, Nov 11 to
	2359Z, Nov 12
ARRL EME Contest 50-1296 MHz Pt 3	0000Z, Nov 11 to
	2359Z, Nov 12
JIDX Phone Contest	0700Z, Nov 11 to
	1300Z, Nov 12
OK/OM DX Contest, CW	1200Z, Nov 11 to
	1200Z, Nov 12
Kentucky QSO Party	1400Z, Nov 11 to
	0600Z, Nov 12
CQ-WE Contest	1900Z, Nov 11 to
	0500Z, Nov 13
NAQCC Straight Key/Bug Sprint	0130Z-0330Z, Nov 16
YO International PSK31 Contest	1600Z-2200Z, Nov 17
SARL Field Day Contest	1000Z, Nov 18 to
	1000Z, Nov 19
LZ DX Contest	1200Z, Nov 18 to
	1200Z, Nov 19
EUCW Fraternizing CW QSO Party	1500Z-1700Z, Nov 18
	(20m)
	1800Z-2000Z, Nov 18
	(40m)
	0700Z-0900Z, Nov 19
	(40m)
	1000Z-1200Z, Nov 19
	(20m)
All Austrian 160-Meter Contest	1600Z, Nov 18 to
	0700Z, Nov 19
ARRL Sweepstakes Contest, SSB	2100Z, Nov 18 to
	0300Z, Nov 20
RSGB 2nd 1.8 MHz Contest, CW	2100Z, Nov 18 to
	0100Z, Nov 19
NA Collegiate ARC Champ'ship, SSB	2100Z, Nov 18 to
	0300Z, Nov 20
EU PSK63 QSO Party	0000Z-2400Z, Nov 19
Run for the Bacon QRP Contest	0200Z-0400Z, Nov 20
CQ Worldwide DX Contest, CW	0000Z, Nov 25 to
	2400Z, Nov 26
ARCI Topband Sprint	0000Z-0600Z, Nov 30

Contest Calendar compliments of WA7BNM @ <http://www.hornucopia.com/contestcal/contestcal.txt>



HD Radio has been installed by radio stations all over the nation, many of which are under contract with Ibiquity in order to promote the technology and get receivers to the marketplace. A typical installation will cost about \$100,000, depending on the size of the station and factors such as antenna system limitations or lease arrangements with tower owners.

WILLIAMSON COUNTY AMATEUR RADIO CLUB

OWNED EQUIPMENT

Reviewed December 1, 2005

QTY—DESCRIPTION—LAST LOCATION—DATE

Tower Work

- 1 Gin Pole - KE5RS, John Benedict - 21-Nov-05
- 1 Tower Step - N5NMW, Jeff Schmidt - 22-Nov-05

Antenna measurement

- 1 MFJ Antenna Analyzer - N5KF, Bob Redoutey - 20-Nov-05
- 1 MFJ Grid Dip Adapter W5TA, Dick Foster -20-Nov-05

Antennas

- 1 Butternut HF Vertical 10M-80M - AF5Z, Bob Helms -1-Dec-05
- 1 Cushcraft 6-element 440MHz Beam - AF5Z, Bob Helms - 1-Dec-05
- 1 Cushcraft R7 HF Vertical - W5TA, Dick Foster - 20-Nov-05
- 1 Hygain triband antenna - W5TA, Dick Foster - 20-Nov-05
- 1 Mosley Triband Antenna (Donated by Harvey, N0AJP) - K5AEM, Jon Boles - 20-Nov-05

Masts

- 2 Push Up Masts - AF5Z, Bob Helms - 1-Dec-05
- 1 Push Up Masts - KC5RPF, Ken Larsen - 23-Nov-05
- 2 Push Up Masts - KD5KQV, Virgil Buell - 21-Nov-05

Power Supplies

- 1 20 Amp Power Supply - N5TW, Tom Whiteside - 20-Nov-05

Miscellaneous

- 2 Heavy Duty Power Cords - K5HTK, Jim Hester - 24-Nov-05

Pending sale

- 1 DB Commercial grade Antenna VHF high-band 158MHz - AF5Z, Bob Helms - 1-Dec-05

