

# AARCOVER

**Bulletin of Austin Amateur Radio Clubs**  
Austin Amateur Radio Club  
Austin Amateur Television Club  
Austin Repeater Organization

ISSN 1067-0262

December 2005

Happy Holidays!

Issue 12-2005

## Jesse Copeland Memorial Scholarship - Taking Applications

It is time again to remind graduating High School Seniors who plan to go to college in Fall 2006, that they can apply for the Jesse Copeland Memorial Scholarship fund scholarships thru Austin Community Foundation. (In the business White pages of the Austin phone book.) Along with a copy of a current amateur radio license of any class, students submit an application form requested from the Foundation, and supporting evidence of their worthiness for a scholarship. All applications are initially thru the ACF address. Final selection of those meeting the criteria will be done by the Scholarship Board after Jan. 31, 2006. Money is sent directly to the institution after proof of enrollment and acceptance. No money is granted directly to any student. However, certain school expenses in case of handicap, such as Special Transit Service, can be covered thru the school.

The scholarships are open to both college freshmen, and to returning college students, as well as persons taking a professional trades course. The scholarships are awarded by the Austin Amateur Radio Club Copeland Scholarship Board, made up of six members of the club along with the club President.

New this year, the deadline for applications will be enforced as January 31, 2006 with NO exceptions. (Actually, this has been the club deadline for over a year, but an error in the Foundation web page caused us to run the application process later last year.)

Applicants must submit a current certified transcript, if already in attendance in college, or from their senior year of high school if a high school senior. If applicants have already received a Copeland Scholarship, they must reapply each year with a new application.

Amounts granted depend on the yearly earnings of the Austin Community Foundation investment on behalf of the radio club, less investment expenses.

### Periodic Events

Sun	7:30 p.m.	Travis ARES net	147.36 MHz + (131.8)
Sun	8:00 p.m.	Travis ARES Packet	145.73 MHz -
Sun	8:00 p.m.	Williamson ARES net	146.64 MHz - (162.2)
Sun	9:00 p.m.	ARO Swapnet	146.94 MHz -
Sun	(After Swapnet)	Newsline	146.94 MHz -
Mon	6:45 p.m.	Hays ARES net	147.10 MHz -
Tues.	8:00 p.m.	Bastrop ARES Net	443.750+ (114.80)
Wed	8:00 p.m.	Code Practice	146.94 MHz -
Wed	11:30 a.m.-1p.m.	Ham Social Luncheon, Jim's at 183 & Burnet Rd.	837-1119
Thu	11:30 a.m. - 12:30p.m.	Lunch, Waterloo Ice House	444.1 MHz+
Sat	7:00 - 8:30a.m.	Breakfast, Waterloo Ice House, 8600 Burnet	444.1 MHz +
Sat	9:00 a.m.	Chapter 67 QCWA QSO Net.	3.920 MHz LSB
Daily	6:30 p.m.	Central Texas Traffic Net	147.14MHz+

Generally, we will grant more money to students traveling away from home to attend school, and less to community college students who can live at home and save on expenses. However, each scholar is evaluated as an individual, and may not receive the same amount as past years scholars, or other scholars in the same year.

The board will be adapting the applications format to better fit the process. One of the judgment criteria is the goals of the student, how he will best use the money. And once a scholar accepts the scholarship, he or she is expected to maintain a grade point average worthy of continuing to receive this grant from the club.

Scholarships can be from any student in the Greater Austin area, and especially from club members or families of club members of Austin Amateur Radio Club. However, residence of applicants and their immediate families will be checked, and if their current grant of an amateur license or other evidence shows they live out of the area, they may not be granted a scholarship.

This is one of the largest scholarship programs whose main requirement is the holding of an amateur radio license. Over 200,000 dollars has been granted in the lifetime of the Copeland Scholarship program. If you would like to contribute to the principle of the Copeland Fund, see the Club President or any member of the Board for more information. Estate contributions are especially welcomed, to add to the fine work started by Jesse Copeland, W5TQ, and his wife providing the club the funds to set up such a program. ■

## Station Grounding

By Gene Preston, K5GP  
(From the Austinhams Yahoo! Group)

How are we to connect our ham radio ground to the rest of the electrical system? If we just connect the ground we have installed to our radio, that puts a lot of lightning current through the radio and the wall outlet, which is not a good design for protecting our equipment. We would need to somehow solidly connect our ground rod to the main ground system to meet the code, which has an objective of eliminating differences in ground voltages. Unfortunately the resistance in small wires (#12) will create rather large voltage drops for the large lightning currents so that the objective of the code will not be met even though all the grounds are connected together.

When I was a substation engineer for AE (30 yrs ago - hi), one no-no in designing the station for lightning protection was to have ground wires that are too long between the transformers and the lightning arrestors. The resistance of the wire plus the timing of the incident wave front(s) and resulting reflected waves could create large enough spike voltages to break down the insulation of the transformer windings.

*(Continued on page 3)*

## Ham Radio Volunteer Exam Results

**ARRL VEC** – The following are the results of the ARRL VE test session held in the LCRA Colorado Room on November 5th, 2005:

### Technician Class Licenses Processed

Charles Rapp KE5GLE  
Angela Scalzo KE5GLF

### Extra Class Licenses Processed

Richard Hendrickson N5LJF  
Steve Schaper KB5FIX  
Jerry Toney KE5DOT

### Examiners Participating in this Test Session

Pete Brunet WS4G  
Tony Davee KM5JH  
Larry Gunter WB5BEK  
Joe Makeever W5HS  
Bill Montgomery K5ZSI  
Ron Parsons W5RKN  
Joe Thiel N5SMN

### Next two ARRL VE Test Sessions

December 3rd - LCRA Colorado Room  
January 7th - LCRA Colorado Room  
TNX ES 73 DE W5HS  
Joe

### W5YI-VEC - 11-19-2005

The South Austin W5YI VE team heartily congratulates all of the following people who earned new or upgraded amateur radio licenses at our November 19<sup>th</sup> session:

#### Extra Class –

Timothy L. Clement, KE5FZI  
Marc D. Keese, KB5WFJ

#### General Class –

none

#### Technician Class (all new) –

John B. Conley Margaret T. Furner Bryant  
Adam M. Hamza Harmon D. Moore

Our administering volunteer examiners were:

Hugh Brown, NT5O Jimmy Mercer, N5WDH  
John Fisher, K5JHF Roger Pfluger, AC5IP  
Jim Greenwood, AB5EK Johanna Preston, W5JLP  
Lloyd Goehring, N5TO Thomas Visel, NX1N

Our next two sessions: **December 10<sup>th</sup> & January 21<sup>st</sup>** 2005 at 2 PM in room 109 of Fleck Hall on the campus of St. Edward's University.

**Exam fee is \$14.00**

**Please bring two forms of identification  
plus your social security number.**

**Sessions are accessible to handicapped  
applicants.**

**No pre-registration is required.**

**Walk-ins are welcomed.**

Austin Amateur Radio Club, Inc., PO BOX 4739, AUSTIN TX 78765-4739, Web site: <http://www.austinhams.org>

President	John Suchyta	KG5O	261-4931	kg5o@arrl.net
Vice President	Jeff Schmidt	N5MNW	255-6753	n5mnw@arrl.net
Treasurer	Jerry Jackson	N5UJ	832-5663	jerry@gaj.com
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ARRL Travis Co. Emer. Coord.	Don Dudley	AC5YK	301-8745	ac5yk@yahoo.com
ARRL Public Information Officer	Roger Wines	W5WIA	453-2193	w5wia@arrl.net

Please contact a club officer, attend a meeting, or mail us to join the organization.

**The Austin Amateur Radio Club, Inc.** has a membership dues of \$20.00/calendar year (\$30.00 family to the same address)  
**The Austin Amateur Radio Club, Inc.** AARC maintains the following repeaters. An open autopatch and emergency power on 146.78 MHz and an emergency HF/VHF station at the American Red Cross building. Persons residing or working within the coverage area are expected to join the club, if they use the autopatch. Non-residents on short visits are welcome to use this autopatch. 146.88MHz (-600) with autopatch; 146.94 MHz (-600) used for Weather Net when called, and Travis County ARES. It is also used for Swapnet and Newline @ 9p.m. Sunday; 224.80 MHz (-1.600); 444.10 MHz (+5); & 145.01 <MHz packet NetROM node (KB5PM-1 or alias AUS). Persons residing or working within the coverage area are expected to join the club, if they use the autopatch. Non-residents on short visits are welcome to use this autopatch. **The 146.78 and 146.88 repeaters have open autopatches.** Please transmit your call **before** sing the phone patch. Press \* and dial the phone number to place a call. Do not unkey after the \*. When finished, press # to hang up the phone. Dial 911 (no \* needed) for emergency services.

#### AARCOVER Information

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Viewpoints expressed in the AARCOVER do not necessarily reflect those of any club, or of its members, directors, or officers.

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Members and other readers are encouraged to submit material for publication. Call Mitch London, if mailed submissions are required. Electronic files are encouraged! Submissions may be edited for publication. **Deadline is the 15th of the month.**

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**Thanks to Jerry Jackson, N5UJ, who mails the AARCOVER each month!**

**For Changes in your ADDRESS, PHONE NUMBER or CALL SIGN:**

**See Jerry Jackson, N5UJ (512) 832-5663 jerry@gaj.com**

**Jerry handles all changes for AARCOVER mailing labels & membership information & roster questions.**

*(Continued from page 2) Grounding*

Let's consider the typical ham station ground. It is a ground wire to the rig (and possibly to the antenna) to a ground rod and the ham plugs the rig into the wall outlet. The connection to the utility grounding is through the house wiring. Lets say that the ham has a moderate ground in west Austin (dry and rocky) and the resistance to the earth is 20 ohms (one good 8 ft ground rod). Lightning hits the tower or antenna with 50,000 amps (this is a little on the high side). Lets assume most of the current goes into the ground rod as its supposed to, with the rod connected to the antenna tower. There is a voltage spike of  $50000 \times 20 = 1,000,000$  volts at the ground rod if its working properly. This creates a voltage wave front of  $1e6$  volts that rises at the ground rod before the wave even reaches the house. The wave travels through the ham's ground wire to the ham rig. If the ham has computers tied through grounds to the ham rig they will probably be fried because of the propagating wave front voltage differences. The wave front enters the house wiring from the ham rig (doesn't have anywhere else to go) and propagates throughout the house hitting almost every electrical device in the house before it ever reaches the electrical utility grounding system. As its doing this the ham's ground rod has reduced the voltage to zero and another wave propagates to the house trailing the million volt wave. After a few microseconds, the house wiring ground and the ham's ground have drained all the lightning current, and voltages are back to zero, but by then the voltage spikes have done their damage to the ham equipment.

The reason the safety code wants everything solidly grounded is to prevent differences in ground step

*(Continued on page 5)*

## A 21 Foot Antenna Mast for About \$70

By Mitch London, KD5HCV

In January is the Big Bend Ultra, which is a foot race through Big Bend National Park. Due to its remoteness, Amateur Radio Operators will be scattered along the course to provide communications. Again, due to the remoteness, I thought a decent antenna mast would be ideal to get up in the air, but I did not want to pay the hundreds of dollars I have seen them for. So I set out to build my own.

For this project I decided on 1 ¼" PVC pipe. 1" was too flexible. You can certainly use 1 ½" if you wish. I also wanted a way to carry all the parts, so I went to an army surplus store and bought an old ammo can. Which will not only act as storage for all the parts, but also as the base for the antenna. Here is the parts list and approximate costs.

1	Ammo Can	\$19.99
2	1 ¼" PVC	\$ 7.90
1	18"x 1" Galvanized Pipe	\$ 5.50
	Rope for Guy Wires	\$15.00
8	Spike to tie guy wire to	\$ 5.36
8	Eye Bolt & Nut	\$ 3.92
15	1 ¼ or 1 ½ inch PVC coupler	\$ 7.50
3	2 Hole U straps	\$ 4.00
	Various nuts and bolts	\$ 2.00
<b>TOTAL</b>		<b>\$71.17</b>



Prices may vary and you may have some of these at home already.

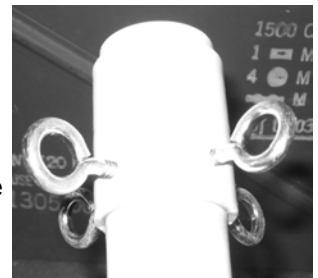
I started by drilling holes in the ammo can to mount the galvanized pipe. (NOTE: The ammo can has a ridge running down at a diagonal for rigidity. I had to place a piece of wood equal to the thickness of this ridge behind the pipe so that the lid would close. It runs from just above the ridge to a couple inches shy of the top) Next I cut the PVC pipe. The length of the ammo can is 17 inches, so I cut most of the PVC to 15 ¾"; when I glue on the coupler,

that will take it to just shy of 17". There are two ways you can connect the PVC to the metal pipe. One is to use 1 ¼" PVC and just slip it over the 1" pipe, or you can buy a

coupler that is threaded for one side only and a reducer from 1 ¼" to 1". For this, glue the reducer onto the piece of PVC, this will be the bottom piece, and then glue the non-threaded side of the coupler onto the reducer. You will now be able to screw on your bottom piece of PVC. Next I chose a piece of PVC for the middle and the top. Each of these will get 4 eyebolts put in them to connect guy rope to. (NOTE: Make sure not to put the bolts through the coupler where the next piece will be coming in, do it at the already glued part of the PVC/coupler)



My antenna has a piece of 1" PVC to connect to the mast, so I bought another reducer and glued it into my top piece (which has eye bolts in it) and put (not glued) a few inches of 1" PVC in it, I then took a piece of 1 ¼" PVC, just shy of the length of the 1" PVC of the antenna plus the piece I just put in the top. The 1 ¼" PVC will slip over the 1" piece at the top and the antenna 1" piece on the antenna will go into the 1 ¼" piece thus allowing the antenna to rotate freely. (Tie string or the like to the end of your boom to use as a rotator from the ground) Now tie string or light rope into each eyebolt for guying your mast.



To set up antenna:

This takes at least 2 people. Put some heavy weight inside the ammo can for stability, some rocks or even a battery. Take the bottom piece and screw it in first. Assemble sections of PVC in twos, this will make it easier to handle as you raise you mast. Start from the top part of the mast and work your way down. Antenna...top piece...and a couple of PVC sections. One person will hold the antenna mast and push up while the second assembles pieces from below. To assist in set up, you can purchase some small pulleys and attach them to the spikes for your guy rope and the person holding the mast can help keep the mast straight as it goes up. Keep assembling the mast, as it gets taller it will be tricky and seem overly flexible, but once up and guyed it will be rigid enough. Or, if you are adventurous, you can



(Continued on page 5)

(Continued from page 4) 21 Foot Mast

assemble the entire mast on the ground, and use the guy ropes and a friend to raise the mast in one go, though I have not tried this method as of yet.

When packed away, the entire mast fits easily into the ammo can, and has room for a moderate sized battery. This mast is being used with a 6-element 2-meter yagi, but can easily be used for a simple dipole or even a wire stuck on a PL259. I set the antenna up in my back yard with the help of a friend in about 10 – 15 minutes. Oh, and don't forget the feed line! Good luck! 73, Mitch, KD5HCV ■



(Continued from page 3) Grounding

potentials. This is fine for low voltages such as 120 and 240 volts, but it doesn't take transient effects into account. As hams, we all know that you can't get a good RF ground over any distance. The same is true for an incident wave from a lightning strike. You can't get a good ground if the ground wires are too long. The voltage wave fronts for long ground wires can be huge. To protect our ham equipment requires some rethinking of the physics.

If the ham antenna is well away from the house, then a ground well away from the house right under the ham antenna will drain the lightning current but the ground rod will still have a high voltage. Wires coming into the house connected to electronic equipment need to be disconnected. If the antenna ground is connected to the house wiring ground, it needs to be a direct connection to the house wiring ground rod outside to prevent currents and voltages from occurring on the house wiring inside the house. Somehow the ham needs to take steps from preventing the lightning current from entering the house wiring through his electrical outlet. By the way, coiling the coax before it gets to the ham rig and coiling the electrical 120 V wire between the rig and the 120 V outlet will help because the inductance blocks the incident wave front voltage from getting past the coil. The coil should be taped though. There will be mechanical forces trying to uncoil the coil. These are important details we had not previously discussed.

73 de K5GP, Gene

**DUES FOR 2006 ARE DUE! BE THE FIRST ON YOUR BLOCK TO BE PAID UP**

**Austin Amateur Radio Club**

Membership Form for year ending December 31, \_\_\_\_\_

Application for: (check applicable box or boxes and include payment)

- AARC  \$20 single  \$30 family (all at same mailing address)
- \$5 student (thru 12th grade, no AARCOVER by mail)
- ARRL  \$24 (first time membership)  \$22 (senior first time)
- \$34 (renewal thru AARC)  \$32 (senior renewal)
- QCWA  \$6 (Local chapter 67 annual dues)

**Check One:**  Information changes  Renew membership  
 New member (never before registered)

Call sign: \_\_\_\_\_ License class? E A G T+ T N (circle one)  
 First name: \_\_\_\_\_ Last name: \_\_\_\_\_  
 Mailing Address: \_\_\_\_\_  
 City/State/Zip: \_\_\_\_\_  
 Home phone: \_\_\_\_\_ Work phone: \_\_\_\_\_  
 Mobile Phone: \_\_\_\_\_ Pager: \_\_\_\_\_  
 Email Address: \_\_\_\_\_

**If the family box is checked please list family members below.**

2nd Call: \_\_\_\_\_ Name: \_\_\_\_\_ ARRL?   
 3rd Call: \_\_\_\_\_ Name: \_\_\_\_\_ ARRL?   
 4th Call: \_\_\_\_\_ Name: \_\_\_\_\_ ARRL?

**I/We have interest in the following:**

- Monthly meetings  Field Day  Working events  Transmitter hunts
- 2 meters FM  DXing  Newsletter  Holding Office
- Presenting programs  CW  Net control  Emer communications
- Holding ARRL office  Education  Public Awareness  Working with Youth
- Other \_\_\_\_\_

**Mail this form with payment to:**

AARC - P.O. Box 4739 - Austin, TX 78765

**or:**

Bring it to the next meeting (See <http://www.austinhams.org>)

## AARC Christmas Party

It is time again for the annual Christmas Party! We have had a great time each year so we hope you will come out and join us! Here's the details!

**What:** The 2005 AARC Christmas Party

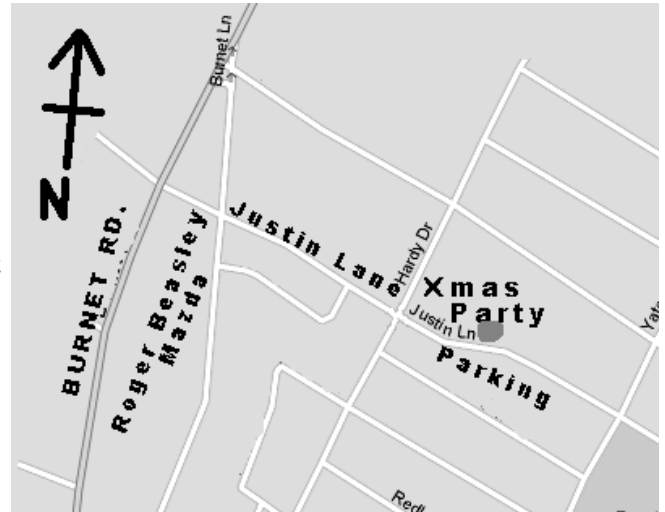
**When:** Tuesday December 13th 6PM

**Where:** The Episcopal Church of the Resurrection,  
2008 Justin Lane Across  
From Roger Beasley Mazda.

**Cost: \$7** in Advance (prior to December 7th at AARC Meeting) **\$10** After Dec. 7th If you register in advance you will get 3 extra door prize tickets. See below to find out what the grand prize is and how to register!

### Here is how to get there!

The party is North of 2222 and South of Anderson Lane. Just off of Burnet Road. There is parking in the Church parking lot and across the street in the small shopping center.



**On the Menu:** This year we will be getting BBQ from one of Austin's oldest BBQ joints around. "The Pit" BBQ will be serving up hot brisket and sausage, with beans, coleslaw, and potato salad, along with all the trimmings. There will be iced tea and lemonade to drink.

**Dessert: Bring you favorite dessert for a pot luck dessert bar!**

**Events: QLF:** Send Morse code with your left foot. John Brown, NT5O is the defending champ!

**DXCC Prefix -Off** You guess what country a prefix goes to.

**Musical Entertainment:** George Toone, WB5FBJ will entertain the crowd again this year.

**Table Top Decoration Contest:** Prizes will be awarded on the top table top decorations. NOTE: Decorations must be ham radio related!

**Silent Auction:** Bid on some rare and interesting items, including Ham Radiopoly!

**Door Prizes:** Of course there are door prizes! Lots of them! And there is also the **Grand Prize** which happens to be a new Yaesu FT-2800 2m mobile! Extra door prize tickets \$1 ea. or 6 for \$5.



**TO REGISTER BEFORE DEC 7:** Send a check or money order

for \$7 for each person attending **AFTER DEC 7:** Bring \$10 per person at the door.

Make checks out to AARC. And mail them to:

Mitchell London 5601 Lewood Dr. Austin, Texas 78745

## **AARC Meeting Minutes, November 1st, 2005**

The meeting was called to order at 7:05 pm by President John Suchyta, KG50, at the ARL labs 10100 N. Burnet Road, Austin Texas

**Visitors:** Mike Brouard (awaiting call) , Tim Clement, KE5FZI (Texas State Guard), John Zuercher, N5PDU and Ira Morgan, KE5EAS were visitors. Mike and John also became the newest members of the club.

**Monthly Drawing Winner:** David, AD5OO won the monthly door prize, a Brand new Lexus.....well, he actually won a very nice set of cable ties which is just as good.

**Minutes:** The October 2005 meeting minutes were not approved as they had not been read yet.

### **Officer Reports:**

**President:** John, KG50 thanked everyone that has been helping out with the various events lately, particularly all that worked the Outlaw 100 bike race in Williamson County.

**Vice President:** J Jeff, N5MNV reports that they are still in need of volunteers to assist with the Radio Roundup, particularly dealers for the Casino games. As of the meeting there were 78 folks signed up for the Friday night dinner.

**Treasury Report:** Jerry, N5UJ reported the club balance was \$3636.00 prior to Round up expenses. He also reports that our income goals for 2005 are about \$3500 below expectations. Part of this is the need for increased membership. He also reminds us that the 2006 club dues are due.

**Secretary Report:** Lee, W5LHC discussed the ARRL Toy Drive for the victims of the various recent Hurricanes. Lee will be collecting toys at the Radio Roundup and the November meetings and will be sending them on to the Salvation Army collection point this month.

### **Ham of the Month: Dallas Mellichamp**

**I nominate Dallas Mellichamp, KD4HNX, for his efforts in promoting effective emergency communications preparedness (and organizing the Outlaw 100 bike race support). Dallas ramrods packet training every third Friday at Round Rock Hospital. He recently led efforts to install ARCHES setups in several Williamson County locations, then "finished the paperwork" by publishing the vital statistics on each site. While we may not see him much at our club meetings, he is very visible in the Amateur community. Submitted, KG50**

### **Committee Reports:**

**Events Committee:** No report

**Programs Committee:** December programs still being setup. See website for details.

**Finance Committee:** Need Chair

**Technical Committee:** Stuart reported that the power supply problem at Red Cross has been fixed.

**Big Project Committee:** No report

**Membership Committee:** Lori asked to step down as chair of the committee and the club is seeking someone to fill this role in 2006.

**Editor:** Mitch, KD5HCV needs articles. Send same to him

**Old Business:** None

### **New Business:**

The club held elections for the 2006 slate of officers were elected by unanimous vote. The 2006 officers are:

President - Jeff Schmidt, N5MNV

Vice- President – Tom Visel, NX1N

Treasurer - Jerry Jackson, N5UJ

Secretary – David Rivenburg, AD5OO

### **Announcements:**

Starting in January the 1<sup>st</sup> Tuesday business meetings will be held at Mangia's Restaurant. Mangia's is located at 12001 N. Burnet Road ( Gracy Farms ). As this is a sit down style restaurant and not a buffet it is recommended you get there a little earlier to get your orders placed before the meeting begins.

Roger Wines, W5WIA has taken over as the Emergency Coordinator from Don Dudley, AC5YK. Don served two years as EC for Travis County ARES. Roger has a number of positions he wants to fill and is seeking ARES members wishing to get more active in the organization to contact him.

### **Volunteer Opportunities:**

- Radio Roundup, November 4,5
- Christmas Party, December 13?
- Various volunteer opportunities & ARES

**Adjourned at:** Meeting adjourned at 7:55 pm

**Program:** The presentation was given by Lew Thompson, W5IFQ and discussed theoretical and real world applications of NVIS (Near Vertical Incident Skywave). Lew gave an excellent overview of the theory behind these antennas and why they are becoming the antenna of choice for in-state HF emergency communications. He also reviewed how these were used by the Texas State Guard to communicate between Camp Mabry and New Orleans during the aftermath of Katrina.

Respectfully Submitted,

Lee H. Cooper, W5LHC

**AARC Meeting Info.**

**Business Meeting**

**7:00 pm at ARL Labs\*\*\***

**10000 Burnet Rd. (North of 183)**

**December 6th** - (bring a drink and a few \$ for Pizza)  
Topic: 2005 Wrap Up and slide show.

**6:00pm at Episcopal Church of the  
Resurrection 2008 Justin Lane**

**December 13th - AARC Christmas Party—See Page  
6 For details! Early registration Ends the 6th!**

**Upcoming Amateur Exams**

**ARRL VEC- December 3rd & January 7th**  
\*New Location\*9a.m. at LCRA Complex 3700 Lake Austin  
Blvd. Contact Joe Makeever, W5HS (345-0800) or Joe Thiel,  
N5SMN (832-0450) for information. \$14 exam fee.

**W5YI VEC- December 10th & January 21st**  
2p.m. in room 109, Fleck Hall, St. Edwards University. Contact  
Jim Greenwood, AB5EK@arrl.net, (327-6184)  
<http://texasparadise.com/w5yi-austin> for more info.

\*\*\*Beginning in January the AARC Business Meeting will  
move to Mangia Pizza on 12001 Burnet Road which is on the  
right just before Burnet hits 1325. They have pizza, pasta,  
sandwiches and more! \*\*\*

**Calendar of Events**

**Dec 2-3 SKYWARN Recognition** 6-10PM Friday and  
8AM-5PM on Saturday New Braunfels Weather Office  
2090 Airport Road. <http://hamradio.noaa.gov/>

**Dec 10 –23 Trail of Lights**

**Dec 13 AARC Christmas Party** (In place of 2nd Tue  
mtg) 6PM 2008 Justin Ln, Episcopal Church of the  
Resurrection

**Jan 14 San Antonio Swapmeet-** Little Joe's Country  
Gold 7405 Old Pearsall Road (1mi. outside Loop 410,  
SW side of San Antonio) [www.w5sc.org/](http://www.w5sc.org/)

**Jan 14 16th Annual Lou Withrow SKYWARN Severe  
Weather Spotter Training** 8:30AM-4PM Commons  
Building - Big Tex Auditorium.

**Jan 15 2nd Annual Big Bend 50 Ultra run** Details will  
be posted on [www.bigbend50.com](http://www.bigbend50.com) Contact Carroll Voss  
(Fleet Feet Sports) thru the website

Dec.	Jan.	Austin Meetings/Happenings	
6	3**	AARC Meeting ARL Auditorium	7:00p.m.
10	14	Austin QRP, Alvin's Sandwich Shop	11:00 a.m.
13	10	Hands on Hamming ARL Auditorium	7:00 p.m.
20	17	*ATV Club Mtg. Mangia Pizza	7:00 p.m.
17	21	QCWA Denny's on Burnet Rd.	2:00p.m.
26	23	Travis Co. REACT Denny's on Burnet	7:00 p.m.
No	24	Travis County A.R.E.S., ARL Aud.	7:00 p.m.

*\*ATV Club now meets at Mangia Pizza on Burnet Rd, North of the  
ARL Labs. Go North until you almost hit 1325, Mangia's on right.*

*\*\*AARC Business Meeting is at Mangia Pizza Starting in January.*

Visitors are welcome whether they are licensed hams or not. Other  
meetings or activities are listed under the headings for Calendar and  
for Periodic Events.

Non-Profit Organization  
U.S. Postage Paid  
Austin, TX  
Permit No. 2942  
*Time Value Newsletter*

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