



AARC OVER

Bulletin of Austin Amateur Radio Clubs

Austin Amateur Radio Club
Austin Amateur Television Club
Austin Repeater Organization

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September 2004

Issue 9-2004

Scholarships Awarded

Submitted by Stuart Rhore, K5KVH

The Jesse Copeland, Austin Amateur Radio Club Scholarship Board has met and named the 2004 winners of annual scholarships. The Scholarship fund resides in the Austin Community Foundation, a 501c3 group, and makes this money solely available to licensed radio amateur operators for their educational needs in College, vocational schools, or continuing graduate education programs.

The following were granted scholarships: First year winners: Matt Youngblood, Andy Trommer, William Bixler, Doug Heath, and Jacob Burnham. Returning scholarship recipients include: Johanna Preston, (grad school); Vicki Logan, (grad school), Sara Hinkle, Craig Brein, and Mike Evans.

The yield on invested funds allowed granting of ten scholarships but at slightly reduced funding compared to earlier years. Hopefully, the Stock Market improvements in 2004 will bring up the amounts available for 2005, or donations to the principle will increase fund yields.

The Board has also discussed should the scholarships be granted only for a limited number of years to any one individual? Or, does the club want to provide as many different students as possible, access to scholarships? The board looks to the Club to express its wishes on scholarship procedures and all suggestions are welcomed. The agreement between AARC and Austin Community Foundation allows only the yield on investment to be spent each year on scholarships leaving the principle intact from the bequest of Jesse Copeland, W5TQ. Serving on the 2004 Board are: John Suchyta, AARC President; Joe Canfield, Jim Neely, Stuart Rohre, Marie Vanderweele, and Roger Wines.

The board reminds applicants for 2005 to phone Austin Community Foundation for application forms to be completed and returned to them with a copy of the ham license of any class, and the Fall 2004 transcripts, in January 2005. This is to allow timely checking of applications, and the board to grant Scholarships by March 31, 2005. Current scholars must reapply each year for renewed scholarships.

Periodic Events

Sun	6:45 p.m., Bastrop ARES net	145.35-(114.8)/443.75 + MHz
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	145.13 MHz -
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 -
Wed	8:00 p.m. Code Practice	146.78 MHz
Wed	11:30 a.m.-1p.m., Travis County ARES lunch @ Jim's	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	CTTN Central Texas Traffic Net, 6:30 p.m.	147.14MHz+

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Modern Beverage Receiving Antenna Construction and Installation

By James Lawrence, WB5HVV

One of the most beneficial station antennas that offers good low noise directional or non-directional performance at a very affordable price is the beverage, or "wave" antenna. It is constructed from a single wire, end-fed from the station end, and elevated 5-10 feet above ground on insulated standoffs.

Beverage antennas fed through a wideband impedance converting transformer offer broadband low noise performance for low to mid-frequency applications in the 0.5 to 9 MHz range, more or less. If you're interested in directional performance plan on erecting a beverage antenna in a straight line toward the desired direction of at least 1 wavelength at the operating frequency of choice. The longer the wire is in that direction the more directive the antenna becomes. Essentially the beverage is a piece of unshielded parallel line transmission line in the 400-600 ohm range, respective to earth. Feeding the antenna requires a broadband transformer which is simple to wind and is featured in many technical books and articles. But here are a few observations we would make that you won't find in published literature, or at least in few of them... In terminated beverages after the installation is done check the impedance matching and load resistor choice by simply inserting about 1 watt or so of power into the system and measuring the match system with a simple VSWR measurement. Sweep the frequency range of desired use in this manner and you can see if the impedance transformation and resistance used is correct, or if some alterations have to be made. We found that for our 600-800 foot terminated straight beverages resistance and matching of 450 ohms worked best, offering a near 1:1 match from 1 to 30 MHz

Be sure to include blocking-type lightning protection in the match system to prevent developed voltages from destroying your radio equipment. Blocking the DC path with a .01 capacitor is beneficial if a drain-to-ground matching system is employed. A beverage of only a few hundred feet can be electrified up to as high as 10,000 volts respective to ground with an overhead cloud-to-cloud lightning blast (we know - we measured it).

Be sure that from the feed point to the wire that the wire ascends slowly to its regular height of travel down the rest of the antenna. Don't feed the antenna and then go vertically up 10 feet, turning horizontal for hundreds of

(Continued on page 5)

Ham Radio Volunteer Exam Results

ARRL VEC – The following is a summary of the ARRL VE test session held at the ARRL Texas State Convention located at The Red Lion Hotel on August 7th at 1230:

Technician Class Licenses Processed

Richard A. Ladd Donald A. Loucks
Bennett C. Massey David W. Roy
Wayne L. Smith

General Class Licenses Processed

Richard E. Cox, Sr. KB5RFO
Donald W. DrumtraK9LHY
Darren L. SchwarzloseWD5GQT
Jean-Philippe SugarbroadKD5ZVR

Extra Class Licenses Processed

James F. Dear, Jr.K5HWH
Ron A. GuetleinKE5BCN

Examiners Participating in this Test Session

Jon Boles, K5AEM Tom Nevue, W2MN
Rik Chapman, K5RIK George Shamblyn, WA5CSH
Tony Davee, KM5JH Carol Thiel, N5TLY
Larry Gunter, WB5BEK Joe Thiel, N5SMN
Ronnie Hughes, N5CSE Roy Walker, WA5YZD
Jim Lindley, K5EWS

Next Two ARRL VE Test Sessions Murchison Middle School September 11th and October 9th

W5YI-VEC – The South Austin W5YI VE team heartily congratulates all of the following people who earned new or upgraded amateur radio licenses at our August 21st session:

Extra Class – Ronald E. Millegan, KA5ZDE

General Class – none

Technician Class (all new licensees) –

Ryan W. Karhi Matthew J. Marbury

Our volunteer examiner were:

Hugh Brown, NT5O Jimmy Mercer, N5WDH
John Fisher, K5JHF Dennis Murphy, W5KQF
Lloyd Goehring, N5TO Rick Trommer, W5RHT
Jim Greenwood, AB5EK Thomas Visel, KE5CAM

Our next two sessions: September 18th and October 16th, 2004 at 2 PM in room 109 of Fleck Hall on the campus of St. Edward's University.

Exam fee is \$12.00

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>

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Technical (Repeater Contact)	Jon Dahm	WB5PCV	328-6662	jon.dahm@motorola.com

Please contact a club officer, attend a meeting, or mail us to join either or both organizations.

The Austin Amateur Radio Club, Inc. and The Austin Repeater Organization have combined membership dues of \$20.00/ calendar year (\$30.00 family to the same address)

The Austin Amateur Radio Club, Inc. AARC maintains a repeater with 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.

The Austin Repeater Organization ARO maintains the following repeaters: 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 <Hz 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.**

Material may be used in a later issue. Unless otherwise noted, permission is granted to reprint AARCOVER articles, provided you credit the author and the AARCOVER.

“NOUJR and His Friends” is reprinted with permission by Greg Trook, Trook Enterprises. Cartoons may not be reprinted without written permission. For information: <http://incolor.inebraska.com/n0ujr>.

Thanks to Smokey Wiley, K5RDJ, and his wife, Betty Wiley, KD5DTC, who mail the AARCOVER each month!

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

See Roger Wines, W5WIA (512) 453-2193 w5wia@arrl.net

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

Club Minutes

ARO Meeting, August 3, 2004

The meeting was called to order at 7:19pm by President Jeff Schmidt, N5MNV, at the Marimont Cafeteria on 38th at Guadalupe.

Visitors: Thomas Visel, KE5CAM, joined us as a new member.

Monthly Drawing Winner: James Robbins, N5OUJ, won the door prize, a Motorola NMO hole mount antenna base.

Minutes: The July 2004 ARO meeting minutes as published in the AACCOVER were approved with the addition of 1 item - Joe Makeever presented a \$300 check to the club as proceeds from last year's Summerfest.

Treasury Report: Treasurer Roger Wines, W5WIA, reported a bank balance of \$2331.12.

Technical Committee: The 146.94 repeater continues to have minor noise issues.

Old Business: Smokey Wiley, K5RDJ, asked about the progress on the club's noise meter. Stuart Rohre, K5KVH, was not available to provide an update.

New Business: None.

Web Site: Lee Cooper, W5LHC, reported that he put additional links on the web site for BPL and Winlink.

Ham of the Month: President Schmidt named Lori Schmidt, KM5MQ, as Ham of the Month for putting up with Jeff for 8 years of marriage. The members concurred.

Equipment Loaner Program: The club's MFJ259B antenna analyzer, Yaesu FT530 dual band HT, and Kenwood TS140 HF rig are all available. Contact Lori Schmidt, KM5MQ, to reserve equipment and make suggestions for new equipment.

Announcements: President Schmidt ran through the scheduled meeting and swapmeets.

Roger Wines, W5WIA, reported that an emergency disaster drill will be held on August 10 at the Chase Bank downtown. The Building Owners Management Association (BOMA) has scheduled this drill to check on their preparedness.

Roger Wines also demonstrated a self standing poster on which he placed Amateur Radio information. The poster can easily be placed on a table for public events. He will display it at the Austin Summerfest.

The business meeting was adjourned at 7:57pm.

Program: ARO Vice President Rick Kirchof, KD5ABM, facilitated an information gathering session. The main subject was test equipment and tools that Amateur Radio operators use in the hobby. Rick asked all to make suggestions on hand tools, bench tools, instruments, power supplies, and special equipment that hams would

need, or could use. The list ranged from low cost tools that many already have to specialty equipment that can be borrowed. Rick will post the list on the AustinHams.org web site as a reference for all hams.

Submitted by John Suchyta, KG5O

ARO Secretary

Austin Amateur Radio Club August Meeting

The August 16, 2004 meeting of the Austin Amateur Radio club was called to order by President John Suchyta, KG5O at 18:12:00 pm. The meeting was held at the Decker Lake Power plant on Decker Lane, Austin TX.

Minutes - John, KG5O sought, and received, a motion to approve the July minutes as published in the AARC/Over. The motion was seconded and approved.

Officers Reports – There were no officer reports

Adjourn: The meeting was adjourned at 18:12:30

Program: The program for the evening was a tour of the Austin Energy Decker Lake Power plant. This meeting was arranged by Rick Kirchof, KD5ABM. We appreciate Rick's efforts and thank the folks at Austin Energy for not only allowing us to have this tour during these times of heightened security, but for accommodating us by having it on a Tuesday evening meeting schedule.

Since there is increased security at all of the local power plants club members that wanted to attend were required to submit request forms in advance that were used to run a criminal background check. This was a requirement for being allowed to attend the tour. Additionally there were no cameras or cell phones allowed during the tour.

Some interesting facts we learned about Decker Power plant were that there are two units there, Decker 1 and Decker 2. They are dual source units, meaning they can run on Natural Gas or Diesel fuel. The service area for the facility is about 42 square miles and services around 1 million customers. Decker 1 has been online since the seventies and Decker 2 came online around 1988.

The facility can generate around 1000 Megawatts of power and typically generates 2.3 million lbs of steam per hour. The steam heats to about 1000 degrees Fahrenheit.

Decker Lake water is cycled through to re-cool the superheated steam and recapture it for reuse. The water is pumped back into Decker Lake for reuse as a coolant. It takes about 32 days for all of the water in Decker Lake to be cycled through the facility and be returned to the lake.

All in all, it was a pretty good tour and we enjoyed seeing the boilers, turbines and the control room. It was also fun to be looking out over the area from 190 feet up from on top of Decker 1.

Respectfully Submitted, Lee Cooper, W5LHC

Good Grounding is Essential

Forwarded by Stuart Rhore, K5KVH

This message started with other Tentec subject lines but due to the subject matter and the fact it's summer (thunderstorm season) here in the US, I thought I'd pass along a few ideas and facts and try to dispel some incorrect notions regarding grounding.

Today most ham stations do not need a RF ground. Shocking to read isn't it! Well it's true. Ask, does your antenna system require a ground to operate? If you use a vertical, an inverted L or a long wire or a sloper or other unbalanced configuration then with out question your antenna does require a ground to operate satisfactorily. On the other hand, if you use a coax fed beam, a coax fed dipole, a balanced fed loop or a balanced fed dipole (resonant or non-resonant) then the antenna system does not need a ground. Any of these will work just fine even in outer space and certainly there is no place to drive a ground rod there. Oh my!

Then why do we jump through hoops to put in a ground system? Simple, lightning protection. On this topic, one thing to remember is the fact that all driven grounds must be bonded together in order to be effective during a nearby lightning strike. The NEC electrical code requires it. And it isn't safe if its not done. That means the tower ground, the TV antenna ground, the telephone ground, the well pump and anything else that could be considered as needing ground for lightning protection. And of course the lightning rods on the house. You do have them don't you? Or is your tower the lightning rod? None of these items actually require any form of RF ground.

Now we must decide do we need a RF ground or a lightning ground. We generally believe that we must connect everything together in all sorts of helter skelter ways and schemes producing multiple paths for current flows. In days gone by, transmitters and antennas did require a RF ground to operate satisfactorily but their output circuits were vastly different from today's radios. Today, the most effective method is to connect a reasonably large, low resistance, low inductance wire from one piece of station equipment to another. In the simplest terms, tuner ground connected to amplifier ground, amplifier ground connected to transceiver ground and transceiver ground connected to the power supply ground. At this point then where is ground connected? For safety reasons and according to the NEC, the 3rd pin of the AC line completes the requirements. I use #10 AWG stranded with #30 wire marine cable and apply crimp on connectors and then solder the connectors too. This makes for a very low R connection, yet it's very flexible and easy to work with and move equipment around as needed.

For lightning protection all feed lines, being coax or balanced, all rotor lines and remote antenna switching control lines should be protected by an appropriate device (I'll not mention brands) at the point they enter the building. The antenna supporting structure must be grounded at its base and this ground must be connected to the AC mains ground by some hard bonding technique. Failure to do this will (repeat WILL) produce a step voltage between the two during a nearby lightning strike. The result is that current will flow between the two and usually the radio equipment is in the current path and is the first to smoke.

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(Continued from page 2) Modern Beverage Antenna

feet or the antenna will look like a vertical receiving antenna partially and some of the low noise and directivity effects will be compromised.

Use steel, galvanized wire where possible. Since the antenna is voltage fed (high-Z) there's no advantage to be realized from using copper wire. Contrarily, copper is soft and stretches easily, causing sag. Also, it is easy to break if tree limbs or ice land on the wire span, causing the copper to sag further or break. Best choice: electric fence wire used by cattle farmers. It's #18 #19 in size, galvanized, solid steel with a 1,000 pound strength, and can take a lot of punishment. It's also 60-80% cheaper than copper, costing around \$8.00 per quarter mile (1,250 feet) and sold in farm stores and some hardware stores.

Use carbon composition or flameproof non-inductive resistors for terminating the beverage, and use 10 watts or better of power handling capacity. During transmit your beverage can be really hot with RF and can easily burn out small resistors. The larger power resistors also help prevent lightning burnout. Wire wound power resistors work fine if the

Smokey's Korner

By Smokey Wiley, K5RDJ

I borrowed the information I'm going to talk about this month from N5MNW and am really thankful for the information. I had seen it in some magazine, but was unable to locate it again. I personally am not an advocate of cross band repeating, but if your going to do it, you should know the pros and cons, and there are many. Some are good and some are not so good. Cross band repeating is explained in March, 1993 QST if you can get your hands on one. Basically it is the re-transmitting of signals from one band to another. Why would a person want to cross band repeat? (A) To extend your operating range. (B) To void hazards of outdoor antennas. (C) Quick repeater relay station during emergencies. (D) Battery savings from ultra-low HT power. (E) When you need to but can't reach a remote repeater. (F) When used as an advantage. (G) To experiment and further the art of ham radio.

How do you cross band repeat. (A) Get radio capable of it. (B) Install diplexer or dual antennas. (C) Select known unused link channel W/PL/DPL. (D) If thru repeater, ask control operators permission. (E) Chose desired output frequency. (F) Select desired mode two way or talkie boost. (G) Place rig into cross band mode. (H) Be sure, be courteous and have fun.

Some rare but desirable features. (A) Automatic IDer. (B) DTMF on-of control. (C) On-link read back of cross band parameters. (D) Backlight off control. (E) VOX switching. (F) DSP filtering. (G) Inactivity timer on link. (H) Easy selection of talkie boost or two-way. (This article is not intended to supply you with enough info to get you on the air, but rather to get you thinking in the right direction.)

The Do's (A) Be sure it works as expected before leaving. (B) Stay close enough to power it down if necessary. (C) Select unused link frequency. (D) Move frequency if you are interfering or being interfered with. (E) Use least power necessary to do the job. (F) Adjust squelch way past threshold. (G) Think thru signal exchanges. (H) Use directional antennas. (I) Monitor at all times.

Don'ts (A) Don't forget RF exposure. (B) Don't use repeater to repeater cross band. (C) Don't walk away with intermode or noise problems. (D) Don't retransmit out of band signals. (E) Don't select repeater input frequency as link frequency. (F) Don't cross band if within HT range. (G) Don't disable time out timer in radio. (H) Don't use harmonically related frequencies.

Auxiliary or remote control must be above 222.15 MHZ. Another fact is that most amateur FM rigs don't auto ID. If someone else transmits on your input frequency or some sort of interference keys the receive section on your cross band rig, the cross band repeater station will be making unidentified transmissions on the out put frequency. Monitor all frequency involved in the cross band repeat process to insure proper operation. Good luck on your entrance to cross band repeating.

73 Smokey K5RDJ

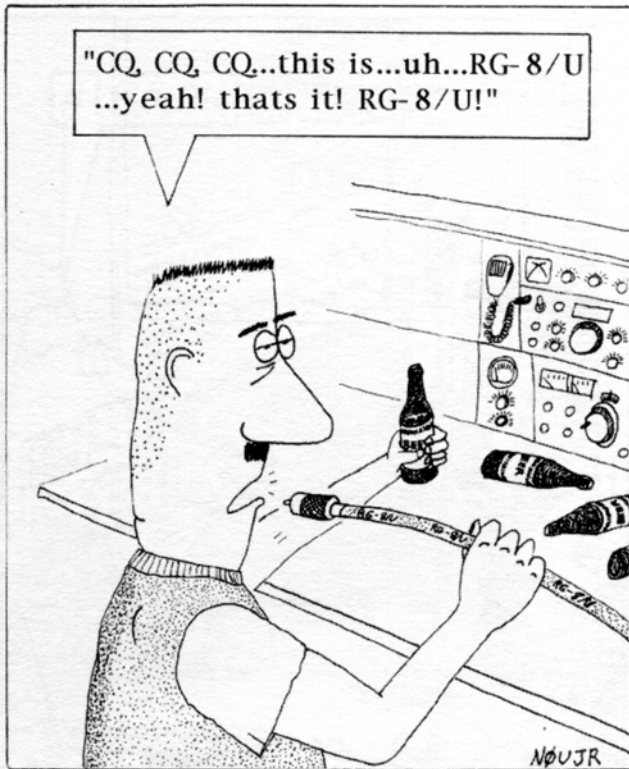
(Continued from page 5) Good Grounding

If you have applied an external ground to eliminate TVI, BCI or telephone interference then the topic of discussion should turn another direction. In most cases there's problems with the relationship between the antenna and the device being offended with. (pardon the grammar) In most cases we go overboard to provide what we believe to be a good ground system when indeed it is not needed and worse, it is often applied incorrectly.

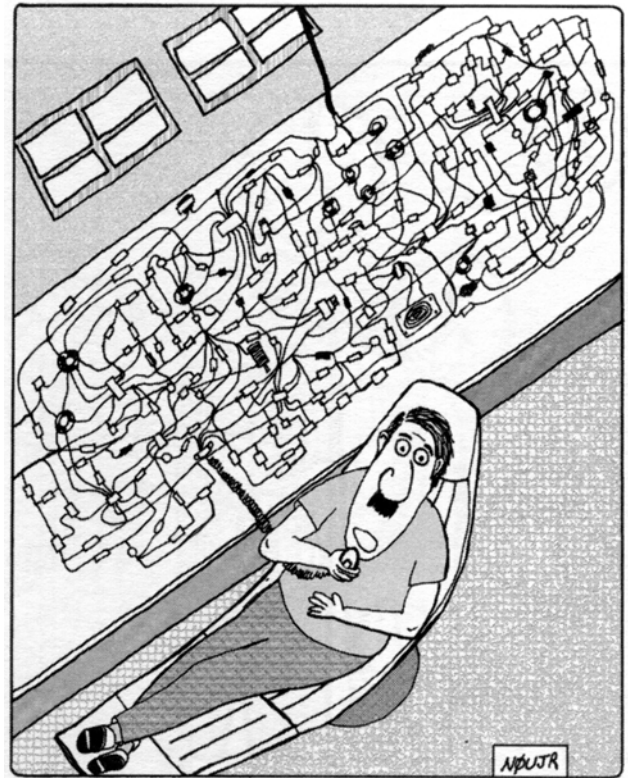
I will directly respond to all e-mail questions if you would like more dialogue on the topic.
73, Bob, K4TAX

NØUJR and His Friends

By Greg Trook, NØUJR



Why ham radio and alcohol don't mix.



"I'm using a homebuilt QRP transceiver that I soldered together one weekend on the bench top. I suppose I should transfer it into a chassis sometime--it was a real pain on the last mountaintop DXpedition."

The QCWA QSO

Keith Zimmermann, K5WX

Bil Henson, WB5SYS, manned the QCWA Chapter 67 table at Summerfest.

What a great turnout this year! He helped sign up several new members to QCWA. (Hey, we're not getting any younger! As you become eligible for QCWA, just contact us and get on board.)

Chapter 67 met at Marimont cafeteria for our August meeting. During this summer, we have been "trying out" different locations to see which one fits us the best.

Please note that our September meeting will be back at Ryan's Restaurant at Parmer and Metric. The date is September 18th at 11:30 AM. Please look for us in the small room near the front of the restaurant. This location will very likely be our permanent home! Our September meeting will feature our President, Milt Cram, W8NUE.

Chapter 67 of QCWA continues to offer code practice sessions on 146.78 MHz on Wednesday evening at 8:00 PM. An informal chat net has begun to form at 9:00 PM on the same frequency. Always check the QCWA Chapter 67 web site at www.qcwa.net for meeting location and times. Remember, you don't have to be a member to attend. This is a great opportunity for folks to come together. There is also an Austin QCWA e-mail reflector at Yahoo Groups under AQCWA. Or, just call Keith, K5WX, at 258-7169 or e-mail to K5WX@QCWA.net if you have questions.



ARO/AARC Meeting Info.

Austin Repeater Organization

September 7 - Mitch London, KD5HCV will have a presentation on his adventure of going to the Pavek Museum of Broadcasting in Minnesota.

Austin Amateur Radio Club

September 14 – - AQRП Members will demonstrate kit building and techniques.

Upcoming Amateur Exams

ARRL VEC- September 11 & October 9
9a.m. at Murchison Middle School on North Hills Drive
Contact Joe Makeever, W5HS (345-0800) or Joe Thiel, N5SMN (832-0450) for information. \$12 examination fee.

W5YI VEC- September 18 & October 16
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 information. \$12 examination fee.

Missed an Issue???

Text (only) & .pdf version of the current issue can be found on the Web <http://www.austinhams.org>

Join the Austin hams Yahoo Discussion Group, go to <http://groups.yahoo.com/group/austinhams/>
We are now up to 35 members! It's free!

Calendar of Events

Sep 4 Tomball Tailgate Sale & Gathering 8AM-12noon Step by Step school Main Street, ½ mile south on Cherry St., south of Catholic Church cwhite314@direcway.com 146.72(-) 123Hz Jerry 713-857-6614 Nora 281-351-0026

Sep 11 HLARC's annual swap meet at the Pavilion in Marble Falls Tables \$5.00 each- contact Chuck 830-693-0513 KB5YKJ@281.com

Sep 11 Katy 4th Annual Ham Radio Swapfest 7AM-? www.qsl.net/katyars Katy VFW Hall- N. off Hwy 90 on Ave. D Talk-in 147.200+ AD5KB bernie17018@msn.com 281-391-2857 Karsradio@hotmail.com

Sep 17-18 Tailgate Swapfest/Cookout Lake Murvaul, TX Betty W5PUP@texramp.net 903-685-2365 www.k5cxo.net/swapfest.htm

Sep 25-26 Texas State QSO Party <http://www.txqp.org>

Sept.	Oct.	Austin Meetings/Happenings
7	5	ARO Meeting, Marimont Cafeteria 7:00p.m.
11	9	Austin QRP, Alvin's Sandwich Shop* 11:00 a.m.
14	12	AARC Meeting, ARL Auditorium 7:00 p.m.
21	19	ATV Club Meeting, Marimont 7:00 p.m.
18	16	QCWA Meeting Ryans Rest. 11:30a.m.
27	25	Travis Co. REACT Denny's on Burnet 7:00 p.m.
28	No	Travis County A.R.E.S., Marimont 7:00 p.m.

*New meeting location and time, Alvin's Sandwich Shop 12200 Research.

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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Return Service Requested