



AARC OVER

Keeping Wireless Austin for Over 90 Years!

Bulletin of Austin Amateur Radio Clubs

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Choosing Your Antenna

By Stuart Rohnre, K5KVH

Some questions on QRP antennas have turned into more general issues, and there was a statement that should be clarified:

Someone thought it was stated to stay away from verticals. Now that is an exaggeration, for it really depends on one's objectives, and the implementation, as to how well any antenna is going to work for you.

If you want to talk to your ham friend in the next town 20 mi. away, a HF vertical is NOT the best antenna. If you want to talk to any ham friend 2000 or more miles away, a vertical, PROPERLY installed may be the best low cost antenna, if you can't put up a gain antenna such as an array or beam, or a very high horizontal antenna several half waves up.

I think at a home QTH a mix of antennas is needed for different bands and distances, and FOREMOST you have to evaluate the reflectivity of local earth before choosing an antenna. That will affect how you install the antennas you choose. A vertical is definitely a primary long skip (DX) antenna, especially if it is modestly elevated, (six feet) off the earth, and installed with a built in counterpoise, or resonant radials. When elevated, only radials in four directions may be sufficient. Under some propagation conditions, I have had short skip and skip zone success at the same time with an elevated "half-wave"

(Continued on page 5)

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.	7:30 p.m.	STX ARES Net	3.873 MHz
Tues.	7:30 p.m.	Hays ARES net	444.150 + (114.8)
Tues.	8:00 p.m.	Bastrop ARES Net	443.750 + (114.8)
Wed	11:30 a.m.	Ham Social Luncheon, Jim's	146.94 MHz -
Thu	9:00 p.m.	2m SSB Net	144.250 (USB)
Thu	11:00 a.m.	Lunch, Pokey Joe's 183&Great Hills	444.1 MHz+
Fri	8:00 p.m.	6m SSB Net	50.230(texasvhf.org/)
Sat	7:00 - 8:30a.m.	Breakfast @ Waterloo Ice House	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+

In This Issue

Story	Page
New Hams in the House!	2
Over the WWaves	4
Dues	6
Club Minutes	7

Ham Radio Exams Results

The following are the results of the ARRL VE Test Session held on September 11th at Bethany United Methodist Church :

Technician Class Licenses Processed

Donald B. Cardno, KF5ILE
Judy G. Louis, KF5ILB
Russell A. Tutor, KF5ILF

Wilmer E. Diaz, KF5ILC
John J. Sacco Jr., KF5ILH

David L. Hoskins, KF5ILD
Michael W. Tutor, KF5ILG

General Class Licenses Processed

Jay Roberts, KF5DKV

William R. Van Dyke Jr., KF5ILI

Michael S. Van Nattan, KF5ILJ

Examiners Participating in this Test Session

Milt Cram, W8NUE
Joe Makeever, W5HS

Larry Gunter, WB5BEK
Chris Salles, NK5U

Joe Jelinski, KC2KG
Joe Thiel, N5SMN

Next ARRL VE Test Sessions

October 9th - Bethany United Methodist Church, Disciple Bldg. Room 213
November 6th - Bethany United Methodist Church, Disciple Bldg. Room 213
TNX ES 73 DE W5HS
Joe

9-18-2010

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

Extra Class –

Fancis W. Bakula, KG5YG
Paul W. Schroeder, K5PWS
Michael P. Thompson, KF5IEE

General Class – (none)

Technician Class (all new) –

Anthony A. Adams
Hermingildo Garcia, Jr.
George R. Hanson
Lee O. Rooney

Our administering volunteer examiners were:

Craig Bean, AC5KW
Hugh Brown, NT5O

Jim Greenwood, AB5EK
Gary Popp, AE5JR

Our next two amateur radio exam sessions will start at 2 PM on October 16th
and November 20th in room 118 of Fleck Hall on the campus of
St. Edward's University. All sessions are walk-in and the exam fee is \$14.

For additional information regarding our amateur radio examination sessions,
please contact Jim, AB5EK at (512) 327-6184 or by e-mail to
hamradioexams@hotmail.com or visit our web page at
hamradioexams@hotmail.com or visit our web page at <http://texashams.org/w5yi-austin/>

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

President	Paul Gilbert	KE5ZW		president@austinhams.org
Vice President	Mike Brumleve	KC8VSE	513-850-8585	vice-president@austinhams.org
Treasurer	Jay Hoffman	KA5OST	388-4404	treasurer@austinhams.org
Secretary	Alan Russell	KE5DTR	851-1806	secretary@austinhams.org
Editor, AARCOVER	Mitch London	KD5HCV	326-3096	AARCover@austinhams.org
Technical (Repeater Contact)	Stuart Rohre	K5KVH	255-3932	k5kvh@arrl.net
ARRL Travis Co. Emer. Coord.	Don Dudley	AC5YK		ac5yk@arrl.net
TC ARES PIO	Steven Polunsky	W5SMP		tcares-pio@gmail.net

Please contact a club officer, attend a meeting, mail us to join the organization, you can also join or renew online.

The Austin Amateur Radio Club, Inc. (AARC) has annual membership dues of \$20.00 per person or \$30.00 per family. AARC maintains the following repeaters:

FREQUENCY	AUTOPATCH	USE
146.780	Yes	General
146.880	Yes	General
146.940 107.2 PL Tone	No	Most popular, WX, Swapnet & Newslite
224.800	No	
444.100	No	
146.480/+1.0	No	2m D-Star Repeater [W5KA C]
1293.200/-20	No	23cm D-Star Repeater[W5KA A]
1248.200	No	23cm D-Star DD (data, simplex/reversible) [W5KA A]

Persons using the repeaters are asked to join the club to help support these valuable resources. To use the autopatch, announce your call sign, press * and dial the phone number then release the PTT. When finished, press # to hang up the phone. Dial 911 (no * needed) for emergency services.

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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 20th 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.

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

See Jay Hoffman, KA5OST (512) 388-4404 ka5ost@arrl.net

Jay handles all changes for membership information .



Over the WWWaves...

A Collection of Various Websites sent in your friendly neighborhood hams...

The following is fodder for newsletter/Web page for clubs. I write such at intervals to supplement original material, which is always hard to come by for editors/webmasters.

==

Phil Salas, AD5X, has a way with words and descriptive articles for ham construction projects. We've exchanged emails a number of times and I respect his writing ability. He is a frequently-published author in QST.

<http://www.ad5x.com/images/Articles/CoilRevB.pdf>

This one covers building your own Bug Catcher-style antenna coil for portable operation of your HF ham station.

Some additional information on one ham's construction technique of this coil can be seen at:

<http://ad5yu.wordpress.com/2007/01/14/home-brew-loading-coil-for-ad5x-vertical/>

A review of the MFJ kit of parts available to build the antenna:

<http://www.eham.net/reviews/detail/5208>

An 87-Powerpoint-slide display of design and matching considerations for this antenna and other vertical antennas (by AD5X) from an OzarkCon presentation can be found at:

http://www.fsaarc.org/ad5x_ozarkcon_06.ppt

Here's the author's revision H (!) from 2005 of his original 2002 QST article on building the "Vertical Travel Antenna".

<http://www.ad5x.com/images/Articles/VerticalRevH.pdf>

In my own opinion, you'd do well to create a permanent bookmark on your computer for Phil's display of his work at:

<http://www.ad5x.com/articles.htm>

links to suppliers at:

<http://www.ad5x.com/Links.htm>

links to his presentations given at:

<http://www.ad5x.com/presentations.htm>

His whole site is a work in progress, so reviewing the contents at several month intervals may give you new insight to a work in progress or planned of your own. Time spent at his site is time well spent.

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Here's a really good idea whose time has not only come but been around for decades. Gosh, why didn't I think of this before?

<http://www.qsl.net/k5lxp/projects/SaltLoad/SaltLoad.html>

This will have you scurrying around the house, looking for suitable containers. I may have to go and buy a big jar of peanut butter to get a jar. Be sure to read the two links at the bottom of the article, as the other author has some pertinent information on set up and possibly better electrodes than the one I link you to.

Forwarded by Rick Herndon, K5FNI



(Continued from page 1) Choosing Your Antenna

vertical, of the commercial models. A ground mounted quarter wave vertical is very dependent on the earth reflectivity, or requires an elaborate radial system to work well. The standard for this are the 120 radials under AM broadcast antennas. Folks with better "RF" earth grounds can use fewer radials.

A dipole antenna, center fed as an inverted V, has worked well to the short skip and in its favored two directions, to long skip. An inverted V of dipole or G5RV style may work in the skip zone where you want near vertical incidence to reach nearby to a few hundred miles. A 40 Meter horizontal dipole 30 some feet up has been found to not work well in the skip zone, ie. within 200 miles. (Signals were readable but weak, and likely were being dominated by longer skip signals.) The angle of the antenna to earth and its elevation affect the "horizontal antenna" performance. Sloping half wave dipoles have been used for DX work, and quarter wave slopers worked against a metal mast or tower "ground" have had good reports.

A fine DX antenna mainly in two directions is the half wave dipole for each band, erected horizontally, at least an electrical half wave or more above earth. But, this requires two supports of sufficient height, and the requisite distance between them. It will not give you optimum results off the favored directions. It will not fulfill the short range needs inside the skip zone in an optimum manner.

For Near Vertical Incidence Skywave (NVIS) coverage of one state on bands like 80, you may find the best antenna is a low dipole, or an insulated one laid upon the ground! A tuner would be advisable to match the impedance variation imposed by local ground conditions in these cases.

Received noise: The off center fed, near half wave vertical dipole, all band commercial antennas have been found to be quieter than base fed verticals by reviewers. (Gap- reviewed by Lew McCoy and others). This may be a combination of the "center" feed, and the run of coax inside the vertical forming an RF choke for local noise that would be heard on base feed, or even the capacitive grounding of the feed to the vertical top end, at the end of a matching stub.

When installed as an elevated vertical, they work well as a compact antenna to work all bands, and all DX locations. They have been found to work well to both coasts from the central part of the U.S. If it was practical to erect true elevated full size vertical dipoles for all bands, I think they would be a most popular antenna for low cost DX work. They would work best with a clear space around them in all directions.

Now we come to single conductor horizontal wires: the quarterwave Marconi or untuned long wire antennas. Some have reported good success in the field or at home with them. However, they also have failed when used in a desert location, and for a long wire, (400 feet) in a tropical location. Why? Earth conductivity. In the desert you have dry sandy soils, a poor conductor. In the tropics you have near daily rain, but again the soil is a poor conductor because frequent heavy rain leaches the conductive salts out of the soil.

I suspect the areas where these have worked are those with good "RF" soil. Now how to get them to work elsewhere? The counterpoise is a neglected accessory to wire antennas. Like the radials of the verticals, a counterpoise provides the other half to go from an unbalanced system like the Marconi or long wire to the balanced system that works more like the dipole in that unattainable "free space". A counterpoise could be laid upon the ground under a portable horizontal wire and parallel to it. This would be the optimum reinforcement for the elevated portion of your antenna. However, you may find offsetting the counterpoise, or elevating it above ground will give better results in some directions over others, and this can be exploited to advantage. Much remains to

be done in exploiting and finding the tricks of the counterpoise. The counterpoise was much used under early antennas, but added to complexity, and gave way to dipole designs for installation ease. It could not really be used in the air, thus the WW II trailing wire had to work against a metal plane fuselage for HF transmission. There probably is some good old information on using counterpoises that has been neglected since the dipole became popular.

Much of the data on using reflectors for array or beam type antennas should apply when using counterpoises. A counterpoise can easily be made from insulated hook up wire. Anything that increases the area of our antennas will improve our qrp success.

(Continued from page 5) Choosing Your Antenna

However, blindly selecting an antenna that worked in a very different location from yours without attention to local conditions, will likely bring frustration or belief that "X", "Y", or "Z" antennas don't work.

The counterpoise can even have a dramatic effect at VHF where compact helical antennas are used. This can be demonstrated by taking a 2 M Handi Talkie on low power, and trying to hit a distant repeater. Often, when unsuccessful, the addition of a quarter wave counterpoise clipped to the ground of the connector will spell success.

For mobile QRP antennas, the short whips or helicals can be improved by adding insulated quarter wave wires to the base ground of the mobile antenna, and threading it even zig-zag fashion through the frame of the vehicle. This can be done no matter how long your whip antenna may be, for it likely is short for RF and does not work all that well against a non resonant vehicle body, which today may be mainly plastic.

In summary, pick an antenna whose area and angular patterns are suited to the communications you desire, and your available space. Be aware of the RF consequences of local earth, and supplement an unbalanced antenna with radials or a counterpoise. A balanced antenna works better for DX the higher you erect it. (A way to evaluate local earth as a reflector is to erect a test dipole cut by the standard formula for 10 or 15 meters, in the clear. Raise or lower its elevation parallel to earth until you see it read 70 ohms on an antenna bridge, at the center feed point. See if the elevation is close to the handbook values for a 70 ohm antenna. The amount off the chart values can give you insight into whether RF Ground is below physical ground at your location. This also can help you determine a correct formula for cutting dipoles for your location, in the future.) The results for a higher frequency dipole in the clear should scale to lower frequency dipoles, if the area is still in the clear for the longer dipole.

Looking at the past two part article on tuners in QST reminds one of the losses a tuner can inflict, even while providing an impedance transformation.

It seems reasonable that to get the best result with QRP power, one would do well to use resonant antennas not requiring a tuner for the band in use.

Carrying this thought along, perhaps one should design a high impedance link coupling to the final tank circuit to allow use of lower loss high impedance open wire line to feed dipoles, in the interests of having the least loss between the final and the antenna.

Has any QRP operator installed the rig at the antenna feed point, and keyed it remotely? Now that would be RF efficient!

73 and good Antenna experimenting!
Stuart K5KVH ■

Club Dues for 2011—Get Them in Early!

Please send your payment of \$20 for individuals or \$30 for family (hams in same household)
Be sure include any change of contact/license info.

You can pay online here - <http://www.austinhams.org/join.htm>

Print form to mail can be found at

http://www.austinhams.org/Docs/AARC_ARRL_Membership_Form_%202008.pdf

And mail to:

The Austin Amateur Radio Club
PO Box 4739
Austin, TX
78765-4739

AARC Meeting Minutes

September 7, 2010

Meeting called to order: 7:02pm by President Paul Gilbert, KE5ZW.

Meeting started with a welcome to all and quick look at the agenda.

We had 43 in attendance, 2 visitors, and 3 new members. No upgrades reported.

Treasurer Jay Hoffman, KA5OST, reported club membership is now at 230. He also reported the club bank account totals, and more money will need to be moved into the .94 relocation account, but it is off to a good start.

Minutes: last meeting's minutes approved as written in AARCOVER.

Editor Mitch London, KD5HCV, has a new email address, but using his KD5HCV at ARRL.org email address is still the best way to reach him.

Tech Committee reported the .94 is dropping audio and the ID timer may be the cause.

ARES only mentioned its monthly 4th Tuesday meeting.

Stuart Rohre, K5KVH, warned that changes to the By-Laws would result in the club having to re-file the By-Laws with the IRS.

A discussion was held to determine the fate of the .78 repeater. Points: rarely utilized by the club and area hams, difficult to gain access to it quickly, incurs a monthly phone bill due to the phone patch and need for remote control of the repeater. Counterpoint: having the .78 on air keeps "ownership" of the 146.78MHz (& offset) frequencies for the club. Jay Hoffman's amended motion to shut down the .78 repeater, abandon the site, and recover as much equipment as possible passed, with assurance that somewhere in the Austin area a repeater will be operational utilizing the 146.78 pair so we do not lose them to some other club or person. A motion was also passed to send a letter to the City of Austin requesting they take down our antenna and feedline next time they are performing maintenance on that tower.

President Paul asked for a Christmas Party Committee Chairperson and Jeff Schmidt, N5MNW, volunteered.

Ham of the Month: Jim Trulove, WB5EMI.

Door Prize: Joe Fischer, K5EJL, won a "throw down" voltmeter.

Space Weather: Lew Thompson, W5IFQ, reported more details concerning the huge Coronal Mass Ejection that hit the Earth on August 3rd, just prior to the last meeting.

No old or new business was discussed; however, ARRL has a new promotion. Members joining or renewing with a 3-year membership will receive a 2011 ARRL Handbook.

Items for the good of the Club: Jay Hoffman & John Stratton, N5AUS, talked about Texas Amateur Radio EmComm Fund (TAREF), a 501(c)3 group, which works to fund ham equipment for use with the Texas Rapid Response Task Force and other EmComm groups while repaying clubs for equipment they had already provided. Belton is Oct. 2. The Big Bend 50 is Jan. 16 with an intro meeting in South Austin Sept. 9. Be sure to check out items, other upcoming events, and scheduled presentations that are listed in the AARC Swapnet newsletter, at www.austinhams.org, and on the Yahoo user group.

Meeting Adjourned: 7:56pm

Presentation: "W5KA D-STAR Repeater (Op & Info)" by Jim Trulove, WB5EMI.

AARC Meeting Info.

Waterloo Icehouse

8600 Burnet Rd. South of 183

Officers Meeting 7 pm

October 19 - Waterloo Ice House

Business Meeting 7pm

October 5 - Being discussed: Officer Nominations for 2011, 2010 Holiday Party, Elections for 2011.

Keep an eye on www.austinhams.org for the latest information and on the austinhams Yahoo! Group.

2010 Upcoming Amateur Exams

ARRL VEC— **October 9th & November 6th** 9a.m. at Bethany United Methodist Church. Contact Joe Makeever, W5HS (345-0800) or Joe Thiel, N5SMN (832-0450) for info. \$15 fee.

W5YI VEC—**October 16th & November 20th** 2p.m. in room 106, Fleck Hall, St. Edwards University. Contact Jim Greenwood, AB5EK@arrl.net, (327-6184) for more info.

<http://texasparadise.com/w5yi-austin>

2010 Calendar of Events

Oct 2 Belton Ham Expo Hamfest

www.tarc.org/hamexpo/

Oct 2 ACTHA Rio Bonito Ranch

Challenge Horse Obstacle- Junction, Tx
trlrider@gvec.net

Oct 8 Paris Texas Hamfest Paris, TX

www.paristexasradio.com

Oct 9 The Outlaw Trail 100 bike event

Contact Dallas, KD4HNX

mylastname@yahoo.com

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

Oct 9 '10 for Texas' ke5stl@gmail.com

Oct 16 K5BAY Baytown Tailgate Sale

7-11AM Eastside Honda Motorcycle

Dealership Pavilion

<http://k5bay.org/>

Oct 16 Lufkin Hamfest 2010

Deep East Texas ARC & Nacogdoches

ARC www.lufkinhamfest.com

Oct 22 Texoma Hamarama

Ardmore, OK www.texomahamarama.org

Oct 23 Piney Woods Hamfest Hawkins

City Park n5dpk@yahoo.com

Upcoming Meetings...

Oct. Nov. Austin Meetings/Happenings

Oct.	Nov.	Austin Meetings/Happenings	Time	Address
5	2	AARC Meeting Waterloo Ice House*	7:00 p.m.	8600 Burnet Rd.
9	13	Austin QRP, Alvin's Sandwich Shop	11:00 a.m.	12200 Research Blvd.
19	16	HSMM/Packet SIG at Red Cross	7:00 p.m.	2218 Pershing
16	20	QCWA IHOP 183 Near Duval	1:00 p.m.	11654 Research Blvd.
12	9	ATV Club Meeting Mangia's Pizza	7:00 p.m.	12001 Burnet Rd.
26	23	ARES Training -CTECC	6:30 p.m.	5010 Old Manor Rd.
25	22	Travis Co. REACT Jim's 183 & Burnet	7:15 p.m.	9091 Research Blvd.
26	23	Travis County A.R.E.S., ARL Auditorium	7:00 p.m.	10000 Burnet Rd.
28	25	CERT Meeting CTECC	6:30 p.m.	5010 Old Manor Rd.

****AARC Business Meeting is at Waterloo Ice House Come early and grab dinner before the meeting.***