

AARC OVER

Bulletin of Austin Amateur Radio Clubs

ISSN 1067-0262

September 2008

Issue 9-2008

“SOS” Turns 100 By Fran Yeoman- Times Online, July 1, 2008

Send SOS,” one of the *Titanic’s* radio operators supposedly said to another after the famous ship struck that infamous iceberg. “It’s the new call and besides this may be your last chance to send it.” That “new call” is 100 years old today, and people around the world who owe their lives to that piece of Morse code may reflect this morning on its importance.

In the past century, “SOS” has become a firm part of popular culture used in everything from DIY programme titles to Abba hits. But it began life in a far more serious setting after being adopted by the international community on July 1, 1908, as the globally recognised distress signal for ships at sea. At that time voices could not yet be carried across the airwaves and sailors needed a standard means of saying, in Morse code, that they were in trouble. Until then, the most commonly used distress call was the “CQD” signal, which was open to misinterpretation. After much deliberation, SOS was chosen to replace it because the signal – three dots, three dashes and three more dots – is such a clear message to send in Morse code.

There was some early success for the new system a year later when the Cunard liner the *SS Slavonia* was stricken off the Azores. She sent out an SOS and not a single life was lost. Even so, not everybody was convinced instantly, and it took the tragedy of the *Titanic* to reveal just how vital a universal system was. After the collision in April 1912, the ship’s radio operators sent out both the old CQD and the new SOS signals, but some ships in the area ignored both, thinking that they were having a party. They soon learnt otherwise, as international headlines told how Jack Phillips, the *Titanic’s* first radio operator, and 1,500 others had been lost along with the “unsinkable” ship. The new SOS distress signal was rarely ignored after that. Of course, technology has moved on dramatically since 1908 and only very occasionally are the telltale dots and dashes that have saved countless lives employed today.

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 -
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	11:30 a.m.	Lunch, Waterloo Ice House	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
Radio Round Up	3
Is No More	
Texas Slow Net	4
Club Minutes	5
How to Sink an 8’ Ground Rod	6
Meeting Info & Calendar of Events	7

Ham Radio Exams Results

The following are the results of the ARRL VE Test Session held in the Wyndham Garden Hotel during AUSTIN SUMMERFEST on August 2nd, 2008:

Technician Class Licenses Issued

Daniel W. Barkelew KE5VYD
Thomas R. Clarkson KE5VYI
Malcolm D. Prouty KE5VYE

Bobby G. Boykin, Jr. KE5VYB
Richard R. Cooper KE5VYC
Cynthia A. Tonnesen KE5VYH

Keita C. Bryce KE5VYA
Duane F. Harvey KE5VYF
Carolyn M. Young KE5VYG

General Class Licenses Issued

Jeffrey D. Heyman KE5VYJ
Frank J. Palcek KC2TKD
Dennis L. Thompson KE5FRW

David H. Hill KD5EPO
Alan D. Peeks KF6GFN
Benjamin G. Trimpey KE5PME

Scott H. Isensee KC4YPA
Ricky D. Shute KE5JXV
(anonymous) KE5???

Extra Class Licenses Issued

Mark D. Littlefield N5LHE

Joan R. Stennett N5RNA

Test Session Examiners

Russ Cook KK5E
Larry Gunter WB5BEK
George Shamblin WA5CSH
Joe Thiel N5SMN

Tony Davee KM5JH
Jerry Jackson N5UJ
Daryl Stout N5VLZ

Jim Dear W5LOG
Joe Makeever W5HS
Carol Thiel N5TLY

Next ARRL VE Exams

September 6th at The Quarries Sports Complex
October 11th at The Quarries Sports Complex

Special thanks to the volunteer examiners who took time out from the AUSTIN SUMMERFEST meetings and seminars to work this long and demanding test session.

73 DE W5HS
Joe

8-16-2008

The South Austin W5YI VE team heartily congratulates all of the following people who earned new or upgraded amateur radio licenses at our August 16th session:

Extra Class – none

General Class –

James N. Howard - new

Eric J. Pinnell, KE5VHJ

Cynthia A. Tonnesen, KE5VYH

Technician Class (all new) –

Ronald Maglothin

Our administering volunteer examiners were:

Hugh Brown, NT5O
Lloyd Goehring, Jr., N5TO

Jim Greenwood, AB5EK
Jimmy Mercer, N5WDH

Our next two amateur radio exam sessions will start at 2 PM on September 20th
and October 18th in room 106 of Fleck Hall on the campus of
St. Edward's University.

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

<http://texashams.org/w5yi-austin/>

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

President	Don Dudley	AC5YK	340-0778	ac5yk@arrl.net
Vice President	Lee Cooper	W5LHC	424 5491	w5lhc@arrl.net
Treasurer	Jay Hoffman	KA5OST	388-4404	ka5ost@arrl.net
Secretary	Alan Russell	KE5DTR	851-1806	arusell@lcra.org
Editor, AARCOVER	Mitch London	KD5HCV	326-3096	kd5hcv@arrl.net
Technical (Repeater Contact)	Stuart Rohre	K5KVH	255-3932	k5kvh@arrl.net
ARRL Travis Co. Emer. Coord.	Roger Wines	W5WIA	453-2193	w5wia@arrl.net
ARRL Public Information Officer	Lee Cooper	W5LHC	424 5491	w5lhc@arrl.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	No	Most popular, WX, Swapnet & Newslite
224.800	No	
444.100	No	
146.480/+1.0	No	2m D-Star Repeater (Cedar Park Area)

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.

AARCOVER Information

ISSN 1067-0262, CODEN AAOVE3. ©Austin Amateur Radio Club, Inc.

Published monthly by the Austin Amateur Radio Club, Inc.

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

Material quoted from the ARRL Letter is supplied by the American Radio Relay League, Inc.

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.

“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>.

“XYL” is printed with permission by Carolyn Canfield, KE5DTS. Cartoons may not be reprinted without written permission.

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 .

Radio Round Up Has Rounded Out

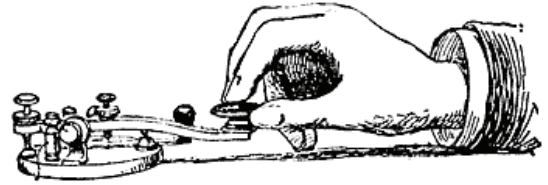
After much discussion regarding its future, the board yesterday voted to pull the plug on the AARC Radio Roundup Swapfest. As you know nearly six years ago the club discussed a desire to host a swapnet "in the spirit of Manchaca", a hamfest that long time club members have fond memories of. That hamfest was a very popular event and had a strong following until the location was lost to the club. I am told that in those days there was not any Belton's or Georgetown fests and that one was one of the area biggies.

Radio Roundup was born to be both a fundraising event for the club and, we hoped, would be a fest that would grow in both size and popularity. Although it has a small core following, it has not proven to do either of the other two. Truthfully, we did not really envision the event making any significant income to the club and we always hoped that we would at least just break even from it. Only in this last year did we do that, and even then it was due primarily to the ICOM radio raffle. Last year we needed to sell about 40 tables to break even and we sold about half of that. Why is that? I am not sure, but with the San Antonio Fest, Marble Falls, Georgetown, Smithville, HamCom, Summerfest and the two Beltons all in this area there is currently almost one hamfest a month in Central Texas. And many of them are seeing flat or lower attendance at their events also. Each year we would look back and wonder if it was gas prices, poor advertising or the opening of a hunting season, maybe the big game, etc. We just are not seeing the levels we hoped for as a return for the effort it takes to host it.

The last five years the event has been a lot of fun to put on, although it has also been a lot of hard work for many dedicated

Texas Slow Net

By Scot McMullen, W5ESE



The Texas Slow Net has been a fixture on the CW portion of the 80 meter band for over a quarter-century, helping amateurs new to radio-telegraphy cultivate their operating and traffic handling skills. The net meets each evening at 7:45 p.m. on 3552 KHz. CW net operation is a lot of fun, and can sometimes handle traffic even when poor propagation makes net operations difficult.

A sample of how CW net operations are conducted may help to demystify the process of beginning to participate in a CW net. The net control station (WB5NKC, in this example),

begins calling for stations to check into the net (QNI) in this way:

NCS: TSN TSN TSN DE WB5NKC QNI K

If you would like to check into the net, you can signify your intent to do so by sending a single letter, your “sign”, which can be the first letter of your callsign suffix or of your name (“S” for “Scott”, in my case):

W5ESE: S

The net control station then indicates that he heard me and invites me to check in by repeating my “sign”:

NCS: S

I then check in, sending “good evening” (GE), and ‘QRU’ if I have no traffic:

W5ESE: WB5NKC DE W5ESE GE ARLEY QRU K

Alternatively, if I have one piece of traffic (QTC) for Houston, for example:

W5ESE: WB5NKC DE W5ESE QTC HOUSTON 1 K

NCS thanks me for checking in (TU), may give me a signal report (QSA and QRK), and asks me to wait [AS] for further instructions:

NCS: W5ESE DE WB5NKC R TU SCOTT QSA 5 QRK 5 GUD SIGNAL PSE [AS]

The net control station will then proceed to call for other stations to check in (QNI).

NCS may ask you at some point (getting your attention by sending your “sign”), to make a net call yourself, particularly if band conditions are poor, and NCS believes other stations may be better able to hear you. You acknowledge receipt (“R”), and proceed to make a few net calls for stations to check in (QNI):

NCS: S

W5ESE: HR

NCS: NET CALL PSE K

W5ESE: R TSN TSN TSN DE W5ESE QNI K

W5ESE: TSN TSN TSN DE W5ESE QNI K

After a few net calls, you then turn control of the net back to NCS (WB5NKC), who thanks you (TU), and asks you to please wait [AS].

W5ESE: NKC

NCS: TU PSE [AS]

NCS may then continue calling for more checkins, asking everyone to pay attention (QNC), listing your single piece of Houston traffic (QTC), and asking if anyone can relay or deliver it (QSP?).

NCS: TSN TSN TSN QNC QTC HOUSTON 1 QSP? ANY TAKERS QNI K

NCS continues the business of the net, usually sending a brief traffic handling training lesson. At the end of the net, the NCS will in turn thank each station that checked in (TU), indicate that the net has nothing further for them (QRU), dismiss them (QNX), and wish them “best regards” (73).

NCS: S

(Continued on page 5)

(Continued from page 4) Texas Slow Net

W5ESE: HR

NCS: TU SCOTT FOR HELP NW QRU QNX 73 K

W5ESE: TU ARLEY 73 DE W5ESE

After dismissing each station, the NCS makes a final call for check-ins, sends a postamble, and closes the net, releasing the frequency (QNF):

NCS: TSN TSN LAST CALL QNI K

NCS: THE TEXAS SLOW NET MEETS DAILY AT 745 PM CDT ON 3552 KHZ [BT] ALL STATIONS WELCOME QNF 73 [SK] DE WB5NKC

Participating in a slow net is a fun way to make friends, build code speed, and cultivate radiotelegraph operating proficiency. More information about the 'Texas Slow Net' in particular, and links to more information about CW net operating practices generally, is available on the web at:

http://www.geocities.com/scottamcmullen/Texas_Slow_Net.html

AARC Meeting Minutes: August 5, 2008

Meeting called to order: 7:08pm by Vice-President Lee Cooper, W5LHC.

Greetings with a short video to preview the next "Movie Night" (to be scheduled).

New Members: Eric Pinnell, KE5VHJ; Chip Rosenthal, KE5VHV; and Thomas Bodine, KD5GRZ (returning member actually).

Minutes: last meetings minutes approved as written in the AARCOVER.

OFFICER REPORTS:

Treasurer: (detailed handout was available) ~\$1200, checking account; ~\$300, small accounts; ~\$8200, equipment fund; added one family and four individual memberships; sold 72 tickets for this year's raffle.

ARES: The General License class will have to be cancelled if interest remains low.

Tech Committee: Stuart Rohre, K5KVH: the club now has a basically new repeater, thanks to Roy Walker, WA5YZD, who rebuilt the 441.0 repeater. A short question/answer discussion took place concerning repeater tones.

Old Business: The D-Star repeater is up and running again; also, more locations and equipment will be coming on-line in the near future. A recap of Summerfest was given, including various attendance totals and exam results. Also, a cake was eaten Friday night in the hospitality room to celebrate Jeff and Lori Schmidt's wedding anniversary with various other anniversaries included. Thanks to Jeff's parents for the cake. The club will need to provide more help with the event next year.

New Business: Tropical Storm Edouard did not turn out to be an event for AARC member after all. A poll was taken regarding the Radio Roundup and Christmas Party.

Announcements: Mitch London, KD5HCV, presented the club with \$296 thanks to Elmo Sledge, K5JOQ, a long-time club member, who gave Mitch as much of his old ham stuff as he could haul off. Elmo wanted Mitch or any other ham to get some use out of it. Mitch figured the easiest way to distribute the stuff was sell it at Summerfest and turn the profits into a gift to the club, which Elmo thought was great. Thanks again Elmo.

Slides and brief discussion of upcoming events: all listed in the AARC Swapnet newsletter, at www.austinhams.org, or at the Yahoo user group.

Ham of the Month: The ARISS contact crew (see the website for crew members).

Meeting Adjourned: 7:40pm

Presentation: "Transmitter Hunting - Basic" by Mitch London, KD5HCV.

volunteers. From its unique name to the signature banquet the night before, the Austin Radio RoundUp, like its predecessor, will be in our memories as a labor of love to those that spent weeks and months preparing for it every year. We want to thank those folks that helped out each year to put it on and for those that were loyal attendees. We know you will, like us, miss it.

It has been suggested in the last couple of years that perhaps an open tailgate session a couple of times a year or more, held in the parking lot of a willing company, where folks that wanted to sell something would just show up might be another way to go about it. Although the club is out of the organized swapfest business for now, we think that this might be a good idea and would encourage anyone interested in doing something like that to take the lead and make it happen. If you have any other ideas, come present them at a meeting and let us gauge the member interest.

The next item is the ICOM 7000 raffle. This will still continue to happen. The drawing for the radio will be held at the club Xmas Party instead and the winner notified. This remains our only fund raising event other than the Cap 10K packet stuffing session. Buy a ticket, take a chance and support the club. Also, stay tuned for updates on the club Xmas Party soon.

Thank You, AARC Officers

How to Sink an 8' Ground Rod in Austin Soil

By Stuart Rohre, K5KVH

Grounding for one's rig is often misunderstood by both long time and newer hams.

First of all, you DON'T need a ground rod for a RF purpose in your station. Consider all those satellite radios feeding dipoles or other balanced antennas in space! No earth rod there! Even the ham satellites communicate very well.

Now, what is the purpose, if any, of the ground rod of 8 foot length that ARRL, and many other texts mentions for radio stations?

In the old days, many times there was an electrical bond between the neutral and a water pipe at the house meter loop, if any connection at all. With only single phase neutral and hot, there was really no real need for earth ground, since the Neutral was bonded to the earth wire on the pole which was close by..

And what was the purpose of the earth wire on the pole? Lightning protection, and providing a way to kick the line fuse if the Neutral somehow became energized as a hot conductor.

What is the purpose of the rod in modern ham shacks? Mainly, electrical protection from straying current whether from a lightning event, or other electrical circuit malfunction.

Really, it may only introduce an undesirable ground loop IF you have a properly grounded 3 wire single phase outlet system feeding your shack. One of those 3 wires to every outlet goes back to an electrical service ground rod at your house, (or it is supposed to). Now is a good time to go out and check for this rod and for tight and clean connections to your circuit breaker panel.

This is usually at least a number 6 solid wire from your breaker box/ meter, down to the rod just below it in a straight, direct line.

IF you add another rod for your radio, it MUST (by National Electrical Code 2008) be bonded to ALL the other earth grounds at your house. Other grounds typically are the cable TV and telephone connection blocks and their ground connection.

Now back to the basic rod purpose, how best to protect your shack from incidental side flash, or surge currents of a nearby lightning strike?

A given is that in the Greater Austin area, especially west of IH 35, you have more rock than anything in line with a vertical or slanted 8 foot path into the soil.

Now, as someone mentioned, the 8 foot path does not have to be vertical. Sure, it is in theory going to get you closer to the water table, if vertical, but not likely in the typical caliche and limestone soils of this area.

What to do? Austin Energy, as it expanded its service west of IH 35, faced the same problem with grounding sub stations. An analysis they ran showed an interesting and workable solution for hams as well. K5GP, Gene Preston, now retired from AE, provided the following information on AE's results.

If you bury 200 feet of at least no. 10 bare copper outside around your house and shack, so as to enclose the area to be protected, you will achieve as good an earth resistance as the fabled 8 foot copper ground rod. You bury this no. 10 as deep as practical, preferably down 18 inches or more, if you can. To this, bond the electrical entry ground rod mentioned earlier, the cable TV grounding block, and the telephone service entry block ground, as well as the case common ground of all your ham equipment.

If you have metal water pipes feeding your house, you can bond that to the electrical grounds as well. However, watch for stray current on water pipe systems to add to your electrical ground loop, and if the noise level on the bands goes up when adding a water pipe tie, it is not a good ground to have. (It won't be a good RF ground anyway, due to its length, or shallow depth, in most cases.)

Now, if you have a dipole, or half wave verticals, beams, loops, or other balanced antennas, you don't need the RF ground via earth to radiate, (Earth which is very lossy at RF). In fact, four elevated radials on a quarter wave vertical are far superior to 32 or more buried radials on the same vertical. That info is found in the ARRL Antenna Compendiums.

L. B. Cebik, W4RNL, (sk), modeled the effects of adding radials under a half wave vertical and found it not worth the cost and effort. The antenna pattern remains the same, as does the gain.

The better antennas, if you do not live over a copper reflecting plate several wavelengths in every direction, are those which are "ground independent." i.e., the balanced antennas. That is why the dipole is suggested as the best first ham antenna. No matter where you erect it in the clear, and horizontal or vertical, it is going to work to 99 per cent efficiency, and radiate nearly all of your power. You can even slope it, slant it, or fold the ends as long as you have 60 per cent of it straight and clear, and it exceeds 90 per cent efficiency!

Beams, loops, deltas, and other half wave or larger antennas all exhibit this ground independent behavior in that they radiate perfectly well on their own.

The quarter wave antennas, or odd multiples of a quarter wave, are the ones needing "help" in the form of a conductor to complete the 'dipole' radiator, or to provide an image of a radiator. This can be ground radials, or a counterpoise, or a screen mat on the ground, or elevated radials as you prefer.

Back to the question, how to sink the 8 foot rod:

You can bury it horizontally, as deep as you can, and in as wet a spot in your soil as you can. It won't be quite as good as having it all vertical, but it will not bend as you try to drive it. If you know you have a rock layer closer to the surface than 8 feet, you could try driving the rod on a slant to clear the rock layer.

Taking some more effort, you could first hydraulically drill a hole with a pipe with a metal point on it. Drill holes near the point for the water to exit and install a hose fitting on the top end of the pipe, and a Tee. Put a cap on the in line end of the Tee, to provide a driving surface. On the side arm of the Tee is where the hose fitting should go. The theory is you drill a hole for the ground rod using water pressure, and water pressure to ease pipe removal from the hole. Then, you insert your ground rod and pack soil around it. It will take awhile for this type of rod installation to reach full conductivity for lightning protection, as the soil must backfill and pack tight to the rod.

If your shack is close to your electrical meter, you can run a nice flat strap of copper to the electrical meter ground rod, and not have to worry with another rod. That is only feasible, if your shack bench is 8 feet or less from this rod. You want to be less than a quarter wave at 10m (8 feet) from your ground rod point, or the RF will think the ground lead is an antenna, and you will have RF in the shack upon the rig chassis. If you work only the lower frequency bands, your strap can be longer, as long as you don't reach a quarter wave length.

If you find copper strap hard to come by, some have used the braid of large coax, or aluminum strips or flashing, with due allowance of anti oxidizing compound for any cross connection to copper or other dissimilar metal; or, use the sleeper of the grounding materials: old fashioned copper or bronze flat weather stripping material. This is sold by the roll, and a typical roll will have enough to go from the shack to the outside. Wide flat strap is low inductance and hence impedance to the grounding point. It reduces RF in the shack complaints. It is thick enough to carry large currents in a lightning surge. (Nothing will carry a direct hit well enough to prevent some damage). It is thicker than the braid on your feed coax, which often carries a surge down to your shack.

No matter your choice of ground protection, still take the time to disconnect your station whenever you are not going to be there, or when not in use. That is, have a disconnect means for each feed line and rotor cable to the outside. And disconnect the electrical cord to your outlet strip that runs the station. High power hams can use a disconnect switch on their 220 volt systems, at a wall near the shack. The protection is proportional to the distance the feeders are from your valuable radios. Even if we are only having high winds, you will find this precaution stopping you from having static buildup damage to rig front ends.

A static bleed off even for antennas in use, is good as well. That can be 100k ohm resistors, (2 watts is adequate) from each side of the feed line to ground.

The 2 watt rating is just for mechanical ruggedness. The actual power consumed is much less, and makes no effect on your signal that you can measure.

No you have the way to sink a rod, or provide an alternate ground for safety, and the rest of the story on how to protect your rig.

-Stuart Rohre
K5KVH

AARC Meeting Info.

Waterloo Icehouse

8600 Burnet Rd. South of 183

Officers Meeting

**September 16th 6pm Waterloo Icehouse
(unless otherwise mentioned)**

Regular Business Meeting

Come Eat at 6:00 pm Meeting at 7:00pm

September 2nd - Fun with Metal Detectors!

2008 Upcoming Amateur Exams

ARRL VEC- September 6th & October 11th 9a.m. at The Quarries. Contact Joe Makeever, W5HS (345-0800) or Joe Thiel, N5SMN (832-0450) for info. \$14 fee.

W5YI VEC- September 20th & October 18th 2p.m. in room 106, Fleck Hall, St. Edwards University. Contact Jim Greenwood, AB5EK arrl.net, (327-6184)
<http://texasparadise.com/w5yi-austin> for more info.

2008 Calendar of Events

Oct 4 **Belton Ham Expo** Mike WA5EQQ

mlefan@vvm.com 254-773-3590

www.beltonhamexpo.org www.tarc.org

Oct 11 **Paris Texas Radio Group Hamfest** Red River Valley Fairgrounds, 570 East Center Street, Paris, TX. www.paristexasradio.com

Oct 18 **Jamboree on the Air** (JOTA) www.kx5bsa.org Alamo Area Council, Canyon Lake- Michael AB5ED ab5ebdxer@gmail.com

Oct 24-25 **Texoma Hamarama** The Ardmore Convention Center Henry, K5BUG k5bugla@gmail.com

www.texasbugcatcher.com

www.angelfire.com/tx5/TexomaHamarama/

Sept.	Oct.	Austin Meetings/Happenings
2	7	AARC Meeting Waterloo Ice House** 7:00 p.m.
13	11	Austin QRP, Alvin's Sandwich Shop 11:00 a.m.
9	14	ARES Training -CTECC 6:30 p.m.
10	8	High Speed Multimedia SIG Red Cross 7:00 p.m.
16	21	ATV Club Mtg. Mangia Pizza 6:30 p.m.
20	18	QCWA IHOP 183 Near Duval 1:00 p.m.
22	27	Travis Co. REACT Denny's on Burnet 7:00 p.m.
23	28	Travis County A.R.E.S., ARL Aud. 7:00 p.m.
24	22	Packet Set-up Lab @ Red Cross* 7:00 p.m.

****AARC Business Meeting is at Waterloo Ice House 8600 Burnet
Come early and grab dinner before the meeting.**

Return Service Requested
September 2008
Austin, TX 78765-4739
PO Box 4739
Austin Amateur Radio Club
AARCOVER