



AARC OVER

Bulletin of Austin Amateur Radio Clubs

Austin Amateur Radio Club
Austin Amateur Television Club
Austin Repeater Organization

July 1994

ISSN 1067-0262

BOCOCK SENTENCED

In other news, word that the Roanoke Phantom is in jail. Rodney E. Bocock of Roanoke, West Virginia has been sentenced to 10 months in prison and three years of supervised probation following his release from jail. He must also pay a \$2000 fine. This after being convicted of being the self professed Roanoke Phantom who transmitted false air traffic control instructions. Bocock who is not a radio amateur was nailed last summer after a joint investigation that involved the FCC, the FAA, the FBI and the Allegheny County Sheriff's Department. In fact, FCC investigators from across the country were called in to assist in the investigation which is said to have involved more resources than any other in the agency's history. He was eventually convicted in federal court of endangering the safety of an aircraft in flight, issuing mis-information to pilots, sending out false distress calls and using indecent and profane language on the aviation frequencies. According to Richard M. Smith who heads up the FCC's Field Operations Bureau, the conviction and sentencing of Bocock should send a strong message to anyone else even thinking of committing such a crime. Don't do it says Smith unless you are ready to accept the punishment that comes with it.

-Newsline - May 27, 1994

DO NOT MODIFY

Finally this word of warning to those of you who are listening to us on a Radio Shack HTX 202 model hand held or who owns one. Please, no matter what any other ham might tell you. No matter what you read on packet radio. No matter what might be published in a radio club or other newsletter. Please -- please do not try and perform any sort of extended frequency

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Club Meetings

Austin Repeater Organization meets on Tuesday, July 5, 7:30 to 8:30 PM, at Luby's Cafeteria on North Loop, one block west of Burnet Rd. Everyone is encouraged to come early and have supper together.

Austin Amateur Radio Club will meet on Tuesday, July 12, 7:30 to 8:30 PM, at Luby's, North Loop.

Austin Amateur Television Club will meet on Wednesday, July 20, 7:30 to 8:30 PM, at Luby's Cafeteria.

Austin OCWA meets on Saturday, July 16, 12:00 PM, at Luby's Cafeteria. Program: Review of Field Day Reports. Come early and have lunch with the group.

The AARC/OVER is published monthly in Austin, Texas



P.O. Box 4763, Austin, TX 78765

Amateur Radio Club

Operators of Voice Repeaters on

146.28/88, 146.34/94, 223.20/224.80, and 449.1/441.1 Mhz

Packet Digital Repeater 145.01 MHz

Sponsor of Central Texas Weather Net, ARO Transmitter Hunt and Swap Net

CLUB OFFICERS

President	Phil Steinbach	WB5SUR	258-3215
Vice President	Jeff Schmidt	N5MNV	255-6753
Secretary	Paul Parker	N5ZLX	467-7070
Treasurer	Bill Montgomery	AB5HP	322-9035

Minutes of the Austin Repeater Organization Meeting June 1, 1994

The meeting was called to order by Vice President Jeff Schmidt [N5MNV] at 7:35 PM at Luby's North Loop cafeteria. There were approximately 80 people in attendance.

Guests and visitors were introduced.

The minutes of the May regular meeting were approved as printed in the May ARO Monitor.

Treasurer's Report:

We have \$5347.19 in the bank.

Engineers Report:

All equipment was reported to be up and running.

Old Business: none

New Business: none

Meeting adjourned at 7:58 PM.

de Paul Parker [N5ZLX] Secretary

Next ARO Meeting

The next ARO meeting will be Tuesday, July 5, 1994 at 7:30 PM at Luby's Cafeteria at North Loop and Burnet Rd.

Information on ARO's Repeaters

All of ARO's repeaters are open access. Any amateur is invited to use them, except during nets, when a designated net control operator is in charge of repeater usage.

(Continued on Page 3)

146.88 offset -600 KHz has a phone patch. Use "*" to bring up the patch, and "#" when you have completed the call. You can dial "911" (no star needed) for access to local emergency services. "Speed dial" 3 digit access codes are available to ARO members for frequently dialed numbers.

146.94 offset -600 KHz is used for the weather net at the request of the National Weather Service. It is also used for the Swapnet and Newslines at 9PM Sunday.

224.80 offset -1.6 MHz is available.

444.10 offset -5 MHz is available.

ARO maintains a Packet Digital Repeater on 145.01 MHz.

ARO Monitor

The ARO Monitor is edited by Mickey McInnis [KB5YAC] (339-0344). This is only this two page section of this newsletter. Steve Means edits the AARC/Over , which is the bulk of this newsletter.

Events

August 5, 6, 7, 1994 - Austin SummerFest. Wyndham Austin Hotel.

October 8, 1994 - Ham expo 94 Belton TX. Indoor table or tailgate spaces. Contact Mike LeFan at 817-773-4768.

Monthly Events

Austin Repeater Organization, first Tuesday of the month. 7:30 PM Luby's Cafeteria North Loop at Burnet Rd. 7/5, 8/2, 9/6, 10/4, 11/1, 12/6.

The ARO transmitter hunt occurs on the Saturday following the ARO meeting. The hunt frequency is 146.52, with coordination on 146.94. 7/9, 8/6, 9/10, 10/8, 11/5, 12/10.

Ham exams are held on the first Saturday of each month at Murchison Middle School. 7/9, 8/6 (at SummerFest), 9/10*, 10/1, 11/5, 12/3 . (* not regular week)

Ham exams will be held at 2 PM in Fleck hall room 109 at St. Edward's University 3001 South Congress Avenue on the third Saturday of each month. 7/23, 8/20, 9/17, 10/29*, 11/19, 12/17. (* not regular week)

Weekly events

Newslines, an amateur radio news program is transmitted at 9:00 PM Sundays on the 146.94 repeater. The ARO swapnet follows Newslines.

The Travis County ARES (Amateur Radio Emergency Service) net meets every Sunday night at 6:30 PM on the 146.94 repeater and at 8:30 PM on the 146.78 repeater. A packet ARES session is held at 7:30PM on Sunday on 145.78 unconnected. Any amateur interested in emergency communication is invited to join. Message traffic would be appreciated.

The Williamson county ARES net is held Sundays at 8PM on the 147.08 repeater in Georgetown. Participation by amateurs inside or outside of Williamson county is invited.

AUSTIN SUMMERFEST

August 5-7, 1994

Wyndham Southpark Hotel

Austin, Texas

Sure enough... it's that time of year again... time to take a pleasant drive to central Texas for our perennial Ham Blast — Austin Summerfest!

Austin Amateur Radio Club and Austin Repeater Organization once again bring you the premier midsummer Texas Ham Radio gathering—everything you've come to expect from Austin, the place to be on the weekend of August 5 through August 7.

As always, we're proud to host the summer meeting of the Texas VHF-FM Society. Check out the sessions and rub elbows with eminent Hams including Tom Comstock, N5TC, West Gulf Division Director at the ARRL Texas State Convention—that's us, too!

• **Dealers**

• **Exhibits**

• **DX Sessions**

• **Technical Sessions**

• **License Exams**

Saturday Afternoon and
Sunday morning Sessions.

• **Prizes**

Prizes galore!

Door prizes, a preregistration prize and of course a Grand Prize.

• **Accommodations**

The sumptuous Wyndham Southpark Hotel. Convention rate of \$59 per room per night with limited availability. The convention rate registration cutoff date is July 22, 1994.

• **Amenities**

You're always welcome in our hospitality suite. There will be a cash bar plus soft drinks and munchies on Friday and Saturday night, and refreshments on Saturday and Sunday mornings.

• **Un-Radio Events**

We've planned some unique entertainment and crafts for one and all. Join us for all the fun!

Swapfest

Wall-to-wall goodies! Just the place to find that gizmo you've been looking for—or to let someone find the one you no longer need. Swap in carpeted, air-conditioned comfort beginning on Friday night. Here are the rules:

1. Tables are \$8 each for the whole weekend (Friday night through Sunday afternoon) or \$6.00 for Saturday only (8:00 a.m. through 5:00 p.m.) available both by advance registration and at the door. Tables are limited 3 to a customer—first come, first served.
2. We'll attempt to honor requests from groups of sellers for adjacent tables, if we receive your registrations in the same envelope.
REQUESTS FOR TABLES GROUPED TOGETHER MUST BE PURCHASED FOR THE SAME TIME PERIOD (All weekend grouped together or Saturday only grouped together).
3. We'll attempt to notify you in advance if tables are sold out.
4. Table(s) will be held for you until 10:00 a.m. Saturday.
5. Sellers can begin setup on Friday at 7:00 p.m., running 'till 9:00 p.m. On Saturday, setup and opening at 8:00 a.m. until 5:00 p.m. On Sunday, setup and opening at 8:00 a.m. and the swapfest will run 'till noon.
6. Sellers **MUST** be registered at the convention.

AUSTIN SUMMERFEST '94 Advanced Registration

Mail before July 25, 1994 to:
Austin Summerfest, Box 13473, Austin, TX 78711-3473

Name _____ Call _____
 Name _____ Call _____
 Address _____
 City _____ State _____ Zip _____
 Day Telephone (____) _____ Evening Telephone (____) _____

	Each	Qty	Total
General Admission	\$7.00	_____	_____
<small>(Per individual. Includes all hats and guests. Admission at door will be \$9.00. Children 17 and under admitted free.)</small>			
Swapfest Table All weekend (Friday through Sunday).....	\$8.00	_____	_____
Saturday Only (8:00 a.m. through 5:00 p.m.)	\$6.00	_____	_____
<small>(Limit of 3 tables to a registrant; first come first served; tables unclaimed by 10:00 a.m. Saturday will be released. Grouped tables must be purchased for the same time period.)</small>			
Extra Prize Ticket	\$1.00	_____	_____
Saturday Evening Event	\$8.00	_____	_____
Texas VHF-FM Society Dues	\$6.00	_____	_____
		TOTAL	_____

Make check or money order payable to **AUSTIN SUMMERFEST**

Saturday Night Special Event....

Back by popular demand!! We have a special deal at the country and western club Dance Across Texas. Within a mile of the hotel. Dance Across Texas will give us admission and serve us a buffet dinner. We are invited to stay on for live music and dancing after dinner. We will have our own reserved seating area for Austin Summerfest registrants. All of this for the low, low price of \$8.00. This is an outstanding bargain for Austin, Texas (or maybe anywhere). State law requires attendees to be 18 years or older.

Directions

The Wyndham Southpark Hotel is at 4140 Governor's Row, on the Southeast corner of the intersection of Ben White Boulevard (TX 71 / US290) and Interstate 35 on the south side of Austin. Talk-in will be on 146.34/94.

From I-35, take the Ben White/71/290 Exit and turn east. Travel one block and turn right (south) onto Governor's Row. Turn right once more to hotel.

From TX 71/US290 Eastbound: Pass under Interstate 35. Follow remaining directions as from I-35 (above).

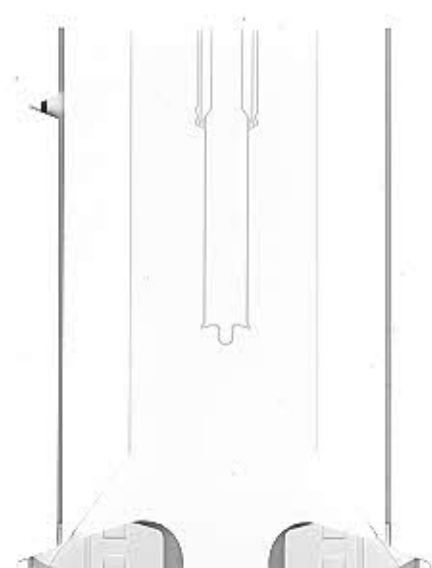
From TX 71 Westbound: Turn left (south) onto Governor's Row one block before I-35. Turn right to hotel.

Further Info

Convention Information:
Austin Summerfest
8609 Tallwood Dr.
Austin, TX 78759
(512) 345-0800.

FCC Exam Information:
Larry Gunter, WB5BEK
(512) 345-7281

Convention Hotel Numbers:
(512) 448-2222
(800) 433-2241



AUSTIN SUMMERFEST '94 Advanced Registration

Mail before July 25, 1994 to:
Austin Summerfest, Box 13473, Austin, TX 78711-3473

Name _____ Call _____
 Name _____ Call _____
 Address _____
 City _____ State _____ Zip _____
 Day Telephone (_____) _____ Evening Telephone (_____) _____

	Each	Qty	Total
General Admission	\$7.00	_____	_____
<small>(Per individual. Includes all hams and guests. Admission at door will be \$9.00. Children 17 and under admitted free.)</small>			
Swapfest Table All weekend (Friday through Sunday).....	\$8.00	_____	_____
Saturday Only (8:00 a.m. through 5:00 p.m.)	\$6.00	_____	_____
<small>(Limit of 3 tables to a registrant; first come first served; tables unclaimed by 10:00 a.m. Saturday will be released. Grouped tables must be purchased for the same time period.)</small>			
Extra Prize Ticket	\$1.00	_____	_____
Saturday Evening Event	\$8.00	_____	_____
Texas VHF-FM Society Dues	\$6.00	_____	_____
		TOTAL	_____

Make check or money order payable to **AUSTIN SUMMERFEST**

AUSTIN AMATEUR RADIO CLUB MEETING

President Jim Neely, WA5LHS, brought the meeting to order at 7:30 pm on June 14, 1994, at Luby's on North Loop.

VISITORS: The following visitors and infrequent attendees were introduced: John, KE4CLW; Tom, WA5ACF; and Robert, KB5UJM.

MINUTES: The minutes of the May 10, 1994, meeting were approved as printed in the AARC/OVER.

OFFICER REPORTS: Dave Marschall, KG5ND, Treasurer, reported that the checking account balance was \$1731.14 and the postal account balance was \$232.99. Ed Golla, K3AHS, Technical Committee Chairman, reported that the Club's 146.78 MHz repeater was working well. Steve Sparks, KB5RSY, Activities Manager was absent and Frank Edwards, WA5WOA, passed around the sign up sheet for Field Day activities. Field Day will start on Friday June 24 with installation of equipment. Operation will start at noon on Saturday June 25. Please contact Frank or Steve if you can assist or participate in Field Day this year.

NEW MEMBERS: None.

OLD BUSINESS: None.

NEW BUSINESS: None.

ANNOUNCEMENTS: President Neely announced that Ron Johnson, WA5RON, passed away suddenly on June 9, 1994. Ron had been active in the club for about 25 years. He will be missed.

Earl, W5PPQ, wants to give away to a good home an antique marine radio.

Holly, W5RZV, reported that Meal-on-Wheels needs drivers and sackers.

Joe Makeever, W5EJB, announced that **Summerfest would be August 5, 6, and 7**, at the Wyndham South Park. The Saturday evening party will again be at Dance Across-Texas. The ARRL Texas state convention and the Texas VHF-FM Society summer meeting are among the scheduled events as well as license exams and special interest forums and a swapmeet/flea market. Don't wait to be asked to assist-volunteer. Paul Kitching, WB5UXX, and Frank Edwards, KB5WOA, are in charge of the talk-in on 146.94 MHz. Jeff Schmidt, N5MNV, is in charge of the Hospitality Room. George Dallas, N5ZLV, is in charge of security for the swapmeet/flea market. Please volunteer your services.

It was moved, seconded, and passed to adjourn. President Neely adjourned the meeting at 7:47 pm.

PROGRAM: Rod Moag, W0NDS, Vice-President, introduced Tom Casey, WA5ACF, from Georgetown. Tom is a manufacturer's representative for communications equipment. Tom discussed the implications and impact on ham radio of recent developments in spread spectrum technology especially in the 902 MHz band.

Respectfully submitted,

John Weber, KF5OY

AARC Secretary

Ron, WA5RON, Becomes Silent Key

Ron Johnson, WA5RON, died suddenly during a meeting on June 9. His funeral was held June 12. He is survived by his wife, two children and several other family members.

Ron was a god guy, an Elmer to many local hams. If you needed some weird component for that old boat anchor, he would take the time to go through his junk box, and when he found it, it was yours. If you own much ham gear, there is a good chance that some of it he a) gave to you, b) fixed for you, c) taught you how to use, or d) all of the above.

I first met Ron when we were attending the University back in the late 1960's. He and I were both cavers (spelunkers). He always brought electronic gadgets along on caving trips. Other local hams knew him at the same time as a valuable member of the UT Amateur Radio Club.

Ron was interested in satellite communications. He often expressed concern that the government would take away our VHF and UHF bands, and recent news of upcoming spectrum auctions make that concern seem closer and closer to reality. He repeatedly stood up at meetings and told us to write our Congressmen to educate them about the importance of ham radio.

Ron took on the task of recording Amateur Radio Newline every week, then re-transmitting it Sunday evenings on the 146.94 repeater for the benefit of local hams. He did this for more years than I know, sometimes from his car, every week up until his death.

The Austin amateur radio community has lost an important member, one who will always be remembered.

de Miles Abernathy, N5KOB

Ron Johnson WA5RON SK

Jerold Robert (Ron) Johnson, WA5RON, died suddenly on June 9, 1994. Ron was 43.

Ron was an active member of AARC and ARO for many years. In recent years, Ron had recorded and rebroadcast the Newline Radio News report on Sunday nights.

Ron was active in AMSAT, a former director of the Texas VHF-FM Society and deputy director of investigations, continental coordinator for the Mutual UFO Network, Inc.

Ron is survived by his wife Rox Ann, his sons Neal, 11, and Wyatt, two and a half.

Our condolences to his family. Ron will be missed.

-de Jim Neely, WA5LHS

Huck's Country Store

By Huck Huckabee - AA5BU

No TVI From This QTH

My first Amateur Radio operation was a great experience! We lived on a small farm in Southern Mississippi. We didn't own an automobile and the next neighbor was across the back 40, almost a half a mile away. Very few people had a radio or telephone and RFI, TVI, and etc. was unknown.

However, a Halicrafters Sky Buddy receiver cost a month's pay and a crystal cost the earnings of a week. Most hams were keying a one tube crystal oscillator powered from the receiver supply. That is when I wanted to live forever!

Can it ever be the same again? I don't think so, because its even better now! A new ham who is willing to begin in simple terms can have the same fun in the same way. Try some of these ideas:

Most any receiver discarded by an experienced ham is better than the little Halicrafters of fifty years ago. And, the solid state QRP kits operating on battery sound like the expensive rigs at the point of reception.

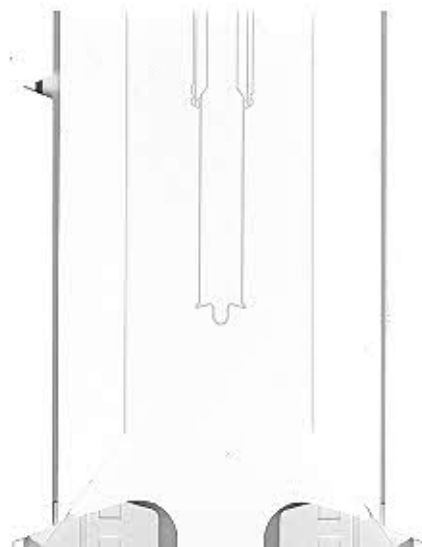
It is extremely rare that a QRP rig gets into a TV, Hi-Fi, VCR or any other type of electronic equipment. By careful choice of the band you operate, an antenna is feasible under almost all conditions.

The nightmare that drives most of us crazy is our big beam antenna bearing down on our neighbors TV or VCR. Another thing is high power. A typical QSO may go like this: "I have a 600 watt amplifier here and will turn it on if you need more signal." Of course I don't need more signal, I wouldn't be talking to you if I did. Then we both wonder why he bought the amplifier. Now he will say: "I don't use the amp very often, TVI you know."

Fun comes with successful operating, expanding your technical mind, making new friends, providing emergency services to the community, teaching young people to enter a great hobby, etc. So why mess up your joy with the things that are known to be a disease to your ham radio fun?

Yes, there is a place for elaborate antenna systems, high power, and complex equipment. But for the real fun in amateur radio there is no penalty to a simple beginning. This is a promise from one who has experienced the whole show!

-de AA5BU; having fun for more than a half-century



ARES Meets Again

Continuing its quirky "every 5th Tuesday" concept, Travis County ARES (Amateur Radio Emergency Service) met at Luby's Cafeteria on May 31. Leader Joe Fisher was out of pocket, so Rick Herndon, K5FNI, took over. Twenty-nine members attended.

Miles, N5KOB, handed out updated Telephone Tree lists. It turned out that 7 folks present had phone number corrections (WA5RON, W5HNV, KB5WOA, WA5MUM, AB5EK, WA5LHS and KB5UGO), and KB5MBU has moved away.

Mac, KB5VYT, started a discussion on what to do with some Group 2 pagers that we have. They use different tones than the Group 1 pagers that have (all) been distributed...what should we do with them? The final decision was to go ahead and hand them out. We need some more tone boxes, and Frank, KB5WOA, volunteered to help build them. If you can assist, call Frank at 451-4318.

Someone asked about the idea of Mobile-comm setting up a group list for folks who have commercial pagers...dial one number and they would all display 14694. It turned out that it will not work. We need someone to write or acquire some dialer software.

Asked and answered: Rick said he needed more Net Control operators. Roger, KB5VHN, volunteered. If you are interested in practicing your skills at controlling a bunch of hams, call Rick (454-1670).

Chuck, W5KNA, brought up the idea of activating ARES on bands other than 2 meters. After our early net sessions, a brief 224.8 MHz net may sometimes be called. This ARO repeater has coverage as good as the 146.94 machine.

James, N5OUJ, mentioned that the New Braunfels weather net is on 147.100 MHz, and asked how many of us can reach that repeater. We may need to, once the weather

service relocates down I-35.

Rick noted that official hurricane season begins June 1, and asked that we consider how we can help if large numbers of storm refugees arrive in this area from the coast.

Someone asked about DTMF paging...talkies that can unquench when they receive a particular sequence of touchtones. Several sequences were suggested (911, 1911, 119, and WXN), but no consensus was reached. You need to key up for a couple of seconds before transmitting the tones, since it takes a while to wake up talkies in battery-saving mode. Wil asked if it was smart to depend upon commercially-powered 146.94, but someone else reported that the emergency power batteries have been received (not yet installed).

Net Controls need to make certain that everyone gets a chance to check in before they close down the net. NC's should be sure to listen to 10 seconds of dead air before concluding that nobody else is trying to check in. And, they should ask late check-ins if they have traffic or announcements.

Rick passed out the ARES Personal Preparedness 1994 List, which tells what we should all do now, before an emergency strikes.

Stu promoted spare battery packs for talkies, and suggested using alkaline batteries (some now come with a guarantee that they will still retain 90% capacity for 5 years). Also, a couple of 4 amp-hour gel cells in a fanny pack will operate a talkie for a very, very long time. Recent editions of the ARRL Handbook have included charger circuits for gel cell batteries.

Next voice nets: Sundays, 6:30 PM, 146.94 MHz; 8:30 PM, 146.78 MHz. Next packet net: Sundays, 7:30 PM, 145.78 MHz. Next face-to-face meeting: August 30. Newcomers are welcome!

de Miles Abernathy, N5KOB

ARES Personal Preparedness 1994 Checklist

This list was prepared by Rick Herndon, K5FNI, to assist members of Travis County ARES (Amateur Radio Emergency Service) in preparing for possible communications emergencies. It tells some of the things you need to round up now, so you will have them when you need them:

I. AT HOME

A. Emergency power

1. Batteries (charged and tested, with ARES standard power connectors)
2. Generator (tested, with fuel available and safely stored)

B. Radios

1. Tested
2. ARES-standard power connectors
3. Auxiliary accessories

C. Antennas

1. Spare in case of destruction of main antenna(s)
2. SWR meter and tuner to tune spare antennas

D. Supplies

1. Current ARES telephone tree and member list
2. Message blanks
3. Emergency lighting

II. AT WORK

- A. Current ARES telephone tree and member list
- B. Radio available
- C. Permission to operate from supervisor

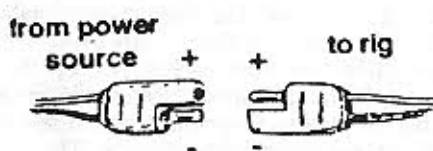
III. IN YOUR VEHICLE

- A. Radios installed and tested
- B. ARES-standard power connectors
- C. Log, note pads, and message forms with pens and pencils
- D. Current Texas repeater list
- E. Current ARES telephone tree and member list

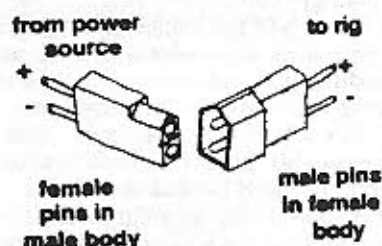
F. Auxiliary supplies

1. Flashlight and cigar-lighter map light
2. Tire inflator / lamp with cigar lighter plug
3. Bad-weather clothing
4. Maps (city, county, state) with plastic cover
5. First aid kit, sunscreen and mosquito repellent
6. Portable / temporary antennas with means of support

This ends Rick's list, but each person can probably think of other items that will be needed.



WA5RON 12 VDC Connectors



Molex 1545 (Radio Shack 274-222)

ARRL Standard 12 VDC Connectors

DO NOT MODIFY... (Continued from Page 1)

coverage modification to that radio. If you do, the only thing you will wind up with is a worthless piece of garbage that is totally beyond any economical repair. The simple fact of the matter is this, it is not possible to make an HTX 202 operate out of the ham bands. This is because the folks at Tandy Corporation designed it that way. Both in hardware and in software. Even if there were some way to get past the super narrow input filtering there is no way to make the synthesizer operate outside of the 2 meter ham band without obtaining the source code to the software that controls an HTX 202. Tandy considers that to be propriety information. They are not going to give it out to you or to anyone. One ham recently called to Tandy to check on the validity of a modification posted on packet. He says that he was told that a number of radios have been returned to factory inoperative and with lots of the surface mount parts missing. The missing components were traced to yet another phony modification posted on the back yard fence of Amateur Radio that we hams lovingly call packet. And no, Tandy Radio Shack will not exchange a modified radio even if its still under warrantee. In fact, any modification will completely void the warrantee and leave you holding a gray plastic box full of worthless junk. Once again, Tandy says that there is no modification available for the HTX 202 that allows operation outside the amateur band. If you attempt one you are almost 100% guaranteed of destroying your radio. So, if you must have a hand held that receives outside of the ham bands we suggest that you buy another brand. If you want one that offers truly superb 2 meter only performance in almost any RF environment then the HTX 202 is well worth considering.

-Newsline, May 27, 1994

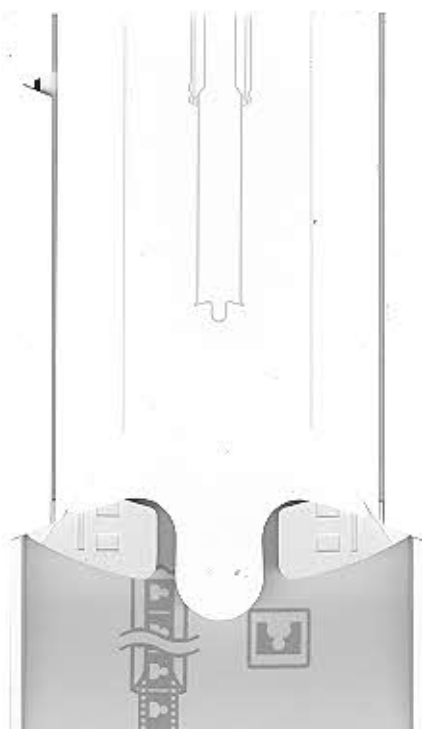
DOUBLE BAZOOKA/ COAXIAL DIPOLE AN- TENNA by Morris Lundberg, K4KEF

Eighty meters is 500 KHz wide, from 3.5 MHz to 4.0 MHz. Your typical, standard dipole antenna will show a bandwidth of about 50 to 100 KHz. That means that you'll have to resonate it at the high or low end of this band, to have a 2:1 or less SWR over the frequencies you wish to operate. So you tune it to the CW or Voice portion of the band. Wouldn't it be nice to have an antenna that was resonant in the center of the band and had an SWR of 2:1 or less across the entire 80 meter band?

Enter the Coaxial Dipole Antenna (alias "Double Bazooka"). This antenna is broadband; it will cover the entire 80 meter amateur band with an SWR of 2:1 or less. The "Bazooka" antenna was developed by the staff of M.I.T. for radar use. The original "Bazooka" used coaxial cable for the entire radiating elements. The adaptation used by most amateur operators uses coax only for the broadbanding portion of the antenna, while the remaining portion of the elements are constructed of twinlead or ladder line (see attached sketch). Ladder line is preferable for its inherent strength.

This is a single band antenna. It will not radiate harmonics of your operating frequency. In addition, there is very little feedline radiation, which is great for those who have problems with TVI. Its broadband characteristic makes it ideal for 80 meters and 10 meters. On the other hand, a separate antenna is required for each band. The Bazooka antenna consists of a half-wavelength of coaxial line with the outer conductor opened at the center and the feedline connected to the open ends. The outside of the coax and the ladder line operate as a half-wave dipole. The inside of

(Continued on Page 13)



DOUBLE BAZOOKA... (Cont'd from Pg. 12)

the coax elements, which do not radiate, are quarter-wave shorted stubs which present a high resistive impedance to the feed point at resonance. Off resonance, the stub reactances change in such a way as to cancel the antenna reactance, thus increasing the bandwidth of the antenna.

In the attached sketch, the SWR curves are shown for two double bazooka antennas; one for the 80 meter version and one for 40 meters. Note that the SWR at resonance on 80 meters (3.75 MHz) is 1.2:1 and that the SWR at the band edges is about 2:1. The curves were drawn from readings taken with the DAIWA CN-620B power meter. The antennas were installed at a height of about 25 feet (unfortunately, I have no trees for supports) and the axis of the antenna elements were at 90 degrees with respect to each other. The 40 meter antenna used TV twin-lead for the ends of the elements. Both antennas used Tandy RG-58/U coax for the broadbanding elements and the feedline. Apparently the Tandy coax I used had a velocity factor of 0.64, since the resonant length turned out to be 84 feet on 80 meters (as compared to the calculated 87 feet). More expensive coax may have a more consistent velocity factor.

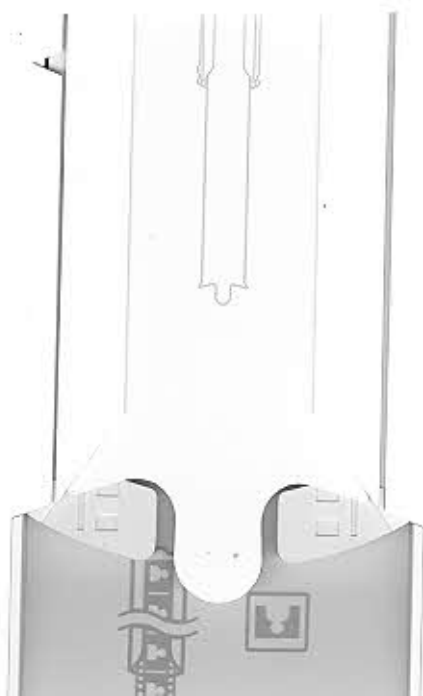
At the very center of the coax used in the elements, very carefully cut away about one inch of the outer vinyl jacket. Then cut the exposed shield all the way around at the center of the exposed area. Be careful that you do not cut the dielectric material or the center conductor in the process. Twist the two pieces of exposed shield into small pig-tails. These are the feed-point terminals for the antenna. The center conductor of the feedline is soldered to one and the shield of the feedline to the other. Now solder the center conductor and shield together at each end of the antenna element. Solder the two ladder line wires to the end of the antenna element. At the other end of the ladder line, solder the

two wires together. The ladder line now appears to the antenna to be a very thick extension of the radiating element, contributing to broadbanding the antenna.

I've solved the mechanical strength problem by using a square piece of plastic at the antenna center, drilling a small hole on each side of the coax, wrapping a small wire around the coax and through the holes and twisting the wire together on the other side. After this, a small amount of quick setting epoxy secures the coax to the plastic support and prevents the wire from untwisting. Once the antenna elements and the feedline are secured to the plastic square in this way, the plastic square takes the strain, protecting the delicate radiating element feed-point. A thorough coating of silicone rubber or epoxy seals and protects the feed-point from the weather. A similar technique at the point where the ladder line is soldered to the shorted end of the coax provides strength and a weather-tight seal.

I've constructed several of these antennas and they have all performed as expected. The quality of the coax used seems to have little effect on the antenna's performance. I've found that Tandy coax will work well in this application. RG-58/U was the coax of choice for small size and light weight. There is no reason, however, that RG-8 coax wouldn't work as well or better. It's larger surface area would probably provide better low signal level reception. Its large size would make it more obvious to the neighbors and its larger weight might be a problem in your installation. Its larger diameter conductors would, certainly, take more stress and strain than RG-58. Eventually, the outer black vinyl coating on cheaper coax will migrate into the inner dielectric material, contaminating it. As is true with any cheaper coax, this changes the properties of the coax, i.e., impedance, loss and velocity factor. Over the long term, the exposure to the sun's ultraviolet rays cause

(Continued on Page 14)



AARC Information

Austin Amateur Radio Club, Inc.

Officers

Jim Neely, WA5LHS, President	442-4812
Rod Moag, W0NDS, Vice Pres.	467-6825
Dave Marschall, KG5ND, Treasurer	834-1779
John Weber, KF5OY, Secretary	280-1082
Steve Sparks, KB5RSY, Activity Mgr. ...	244-3776

The Austin Amateur Radio Club, Inc., maintains a repeater with open autopatch and emergency power on 146.78 MHz, and an emergency HF/VHF station at the American Red Cross Building. Membership dues are \$6 per calendar year (\$10 for a family). Please contact an officer if you would like to join the club. Come on down to the next meeting!

Committees and Positions

Ed Golla, K3AHS, Technical	255-4818
Joe Fisher, K5EJL, ARES Coord.	926-4689
Steve Means, N5PSW, A/Over Ed.	452-7240
4800 Caswell.....	AustinTX..78751
Hal Henegar, W5MDL, P.I.O.	836-2012

DOUBLE BAZOOKA... (Cont'd from Pg. 13)

this contamination of coax which hasn't been constructed to prevent it. For that reason, you may wish to use non-contaminating coax, such as RG-141 or RG-213. After several years of exposure to all kinds of weather, however, my Double Bazooka's show little degradation in performance, using Tandy RG-58/U coax (Radio Shack).

-de Ham On Disk No. 5

AARC/Over Information

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Members are encouraged to submit material for publication... send material to the Editor at 4800 Caswell, Austin 78751, by connecting to the Balcones Fault Line BBS (452-2135), or smeans@bga.com. Submissions may be edited for format, style and suitability. **Deadline for the next issue is the 14th of this month** Late material will be saved for later issues. Permission granted to reprint AARC/Over.

Calendar

- July 5... Austin Rptr. Org. meets at Luby's
- July 12... Austin ARC Meeting, Luby's
- July 16... QCWA meets at Luby's - 12:00
- July 19... Austin Amateur TV Club - Luby's

Weekly Events

- ARES Net... Sun., 6:30 PM, 146.94 MHz
- ARES Net... Sun., 8:30 PM, 146.78 MHz
- SwapNet, NewsLine... Sun., 9 PM, 146.94
- Lunch... Thurs. @ Holiday House #4
- U.T. Net... Thurs., 7 PM, 145.21 MHz
- QCWA Net... Thurs., 8:15 PM, 147.18
- Breakfast... Sat., Simon David Deli
- 521 Trade/Tech Net... Sat., 9 PM, 145.21
- WeatherNet... as needed, 146.94 MHz

Antennas and Property Values

Fortunately, we have turned back the threat of a total ban on all antennas that was part of the new deed restrictions proposed for my neighborhood. I think that some research I did in the course of the fight might be of use to other hams.

The usual excuse for such bans is that the antennas drive down the neighborhood property values. To try to verify this, I contacted the Texas Association of Realtors, the Real Estate Center at Texas A&M University, and the National Association of Realtors in Washington, D.C. I also spoke to a professor that teaches the real estate appraisal class at A&M. I asked them what formula or rule of thumb they use to estimate the impact of a nearby antenna on the value of a piece of property. Also, if any formal studies had been conducted on the subject, where I could look them up? The answer in all cases was the same: As far as they knew, antennas have NO effect on adjacent property values.

It seems to me that if anyone would know the truth about this, it would have to be the people who make their living selling real estate. Therefore I am comfortable in stating that, contrary to popular belief, antennas do not run property values down. Use this the next time someone proposes a ban in your neighborhood!

73 de James, KB5F10

June South Austin Exam Results

The South Austin W5YI VE team congratulates the following people who earned new or upgraded amateur radio licenses at its June 18th session:

Joe B. Ranson KB5HMP Advanced Class
Charles M. Adams -new- Technician
Thomas E. Lawnsby -new- Technician
Deepak N. Mathur -new- Technician
Terrie L. Worrell -new- Technician

Four other applicants earned element credit without upgrading.

Our volunteer examiners included:

Dick Ber, KB5BBU
Jim Greenwood, AB5EK
Emil Kasprzyk, KC5IZ
Scott McCreight, AB5KS
Joe Thiel, N5SMN
Lloyd Walls, WA1PRY

Everyone interested in seeking a new or upgraded license is welcome to join us at either or both of our next two sessions, on July 23rd and August 20th. We start at 2:00 PM in room 109 of Fleck Hall on the campus of St. Edward's University. For more information, call Jim, AB5EK, at 327-6184.

