

# the B-VARC BULLETIN

The Monthly Publication of The Brazos Valley Amateur Radio Club

Volume 19 Issue 7

July 1996



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**2-Year Board Member:**  
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(713) 494-3741

**1-Year Board Member:**  
Claude Sessions—K5HFY  
(713) 242-6069

**Past President:**  
Carl Cunert—WB8SVR  
Allen Mattis—N5AFV (appointed)

## NOTE FROM THE PRESIDENT

by Ron Grimes—WA5SCE

[Not available]

## FROM THE EDITOR

by Jackie Burton—KC5OHJ

For the past week or so, we have enjoyed hearing our ex-president, Carl Cunert—WB8SVR, on the repeater. Carl graced us with his presence at the regular meeting Thursday. Heck, Carl even showed up at breakfast Saturday morning! See, if you miss the meetings, breakfast, etc., you never know what else you are missing.

Carl, it was good seeing and hearing you again. Please feel free to visit us any time you are in this area. 73 de KC5-Oh-Hello-Jackie.

The Editor

## SPECIAL THANKS

All of us at B-VARC would like to extend our gratitude to the management at KHTV, Channel 39, for the use of their equipment and facilities in order for this bulletin to be published.

We would also like to thank Claude Sessions—K5HFY, and all the other B-VARC members who volunteer their services in helping to put the bulletin together. It couldn't be done without you.

## B-VARC BOARD MEETING

by Jackie Burton—KC5OHJ

A quorum of the Board of Directors met at the Sugar Land Community Center on June 6, 1996. This was the sixth board meeting of the calendar year. The meeting was called to order by President, Ron Grimes—WA5SCE, at 7:30 p.m.

The following Board Members and guests were present: Ron Grimes—WA5SCE, Louis House—KD5GM, Jackie Burton—KC5OHJ, Jim Cahanin—KB5TBZ, Pete Norris—KJ5SS, Terry McCoy—KK5RL, Bud King—NSUOG, Claude Sessions—K5HFY, Allen Mattis—N5AFV, Sam Wilson—N5CPA, John Moore—KK5NU, Gailen Marshall—N4SKR, Allen Brier—WB5BIR, and Connie Brier.

Recording Secretary, Jackie Burton—KC5OHJ, presented the May minutes. The minutes were approved with a motion that passed unanimously.

Treasurer, Pete Norris—KJ5SS, presented the Treasurer's report dated May 31, 1996, showing a balance of \$5,695.52. Pete stated that B-VARC currently has a total of 144 members. The treasurer's report was approved with a motion that passed unanimously.

Vice-President, Louis House—KD5GM, stated that he had submitted pictures of the Tatanka Boy Scout Festival to QST magazine. He stated that the pictures, if used, will be on a space available basis.

Board Member, Terry McCoy—KK5RL, stated that he had checked into having our meetings at the Memorial Hospital facility. He stated that it does not look promising. After much discussion, it was decided that we would take a vote at the June regular meeting on several locations.

B-VARC Rag Chew Net Manager, Sam Wilson—N5CPA, reported that the net is doing well, and that the check-ins for the month of April ranged from 13 to 22, which matches his high for the one and a half years he has been running this net.

Public Service Net Manager, Jackie Burton—KC5OHJ, reported that the Monday night Brazos Valley Amateur Radio Club Public Service Information Net was going well, with fairly high

check-ins, the only problems being with squirrel activity.

Gailen Marshall—N4SKR, reported that the program for the June regular meeting would be QSL cards, presented by Randy Pollard—AK5G. He asked people to bring their favorite/unusual QSL cards. The program for July will be the ice cream social, and hopefully some footage from field day will be available for viewing.

Pete Norris—KJ5SS, stated that the Novice/Tech classes were going well, averaging 7 to 8 people attending.

Allen Brier—WB5BIR, reported that Field Day is coming along nicely, and much equipment has already been donated. We will be operating as a 3A station. The food will be catered by the Swinging Door, with tickets being sold for the dinner. The price for 2 meats (brisket and sausage) and 2 vegetables (cole slaw and potato salad) would be approximately \$9.00, with the cost of the ticket being \$5.00 and B-VARC subsidizing the remainder of the cost. This was approved with a motion and second that passed unanimously. After some discussion, it was decided to go with 3 meats (add chicken) and 3 vegetables (add beans). The cost for this would be \$9.50, with the cost of the ticket to remain \$5.00 and B-VARC picking up the remainder of the cost. This was passed with an amended motion and second that passed unanimously. Connie Brier, along with some other volunteers, will be preparing breakfast, and after motion and second, it was passed for the club to reimburse Connie for the cost of materials involved in the preparation of breakfast for Field Day.

President, Ron Grimes—WA5SCE, stated that he would bring copies of the Constitution and By-Laws to the June regular meeting for everyone to look over. The bill for registering bvarc.org with the Internic was presented and approved for payment in the amount of \$100.00.

There was some discussion concerning the taking away of 2m/70cm bands. A suggestion was made for the club to send a letter as a club of x number of members. Gailen Marshall—N4SKR volunteered to write the letter for President Grimes' signature.

President, Ron Grimes—WA5SCE, presented a bill in the amount of \$60.00

from World Radio for B-VARC's ad in that publication. It was approved for payment with a motion and second that passed unanimously.

John Moore—KK5NU, asked the board if we could link the MERA page with B-VARC's home page. Everyone agreed that this was okay, and that it did not need formal board approval.

There being no further business, the meeting was adjourned by Ron Grimes—WA5SCE, at 8:45 p.m. with a motion, second and unanimous vote.



**MEMBERSHIP REPORT**

*by Pete Norris—KJ5SS*

As of June 6, 1996, the current membership for the club is:

**144**

**HOUSTON HAM INFO. LINE**

**495-3495**

The Ham Information Line is available 24 hours a day by calling the above number with a touch tone phone. Information on local clubs and test sessions is provided.

# HAND GUN

## Carry Concealed Permit

CLASSES

Bill Reid
Don Brown

(713) 341-1500

Texas D.P.S. Certified Handgun Instructors

---

### Westheimer Airpark

a Division of Reid Management Co.

Don Brown, Sr.  
Operations Manager

(713) 341-9641  
Alt #: (713) 392-3587  
(713) 240-1009

24215 FM 1093 • Richmond, TX 77469  
One and One-half Mile West of Grand Parkway  
Flight School • Hangarage • Tie Downs

**THE INTERNET**

*by Jackie Burton—KC5OHJ*

The following article is the tenth in a series of articles John Moore—KK5NU, has written for publication in the B-VARC Bulletin.

The Editor

★ ★ ★ ★ ★

**All You Want to Know About the Internet and More**

*by John W. Moore—KK5NU*

**I've Got This ??? On My Screen—Now What?**

With your successful connection to the net, either through your dialup UNIX shell account, or through your Windows socket application, you're now "on the net." For most people with a somewhat strange and unfamiliar grasp of all of the internal workings of both the UNIX environment and the whole internet concept, which depends in the main for its universal connectivity to that same UNIX environment, this is the point at which they literally don't know what to do.

There are literally hundreds of "client applications" out there in the ether, all just waiting for you to install, start and run. With the handful that you already have at your disposal for launch with a few keystrokes, the world is literally your "oyster" with pearls scattered all over.

So, go look for them. From browsers—of which probably Netscape is at this point in time the most popular, to Mosaic, Internet Navigator, even text-based Lynx, all you have to do is go to one of the

more popular search engines and dig. Your personal preferences, as to look and feel, will not only dictate your choice of browser, but also just which search engine you care to use. Probably Lycos, the daddy of them all, developed and perfected at Carnegie-Mellon University, is the most thought of one. Alta Vista, developed and running on a DEC Alpha 64-bit architecture operating system, is possibly the fastest on the net at this time. One thing is for sure: if you don't like or feel uncomfortable with one, there are dozens more out there just waiting for you to poll for information.

Then, once you have scrolled through the myriad of screens, gone back and redefined your search, and placed some filters in your query, just point and click, drag and drop to the site that interests you. Be warned, if you find a site that interests you, bookmark it immediately. It's hard enough to remember what you started out search for, and how you ultimately got the wording just so for the successful search, let alone the long and somewhat hard to figure out fully-qualified path to the server you finally found the information on. Bookmark it to avoid having to start all over again. And just because you found it at a location today, does not necessarily guarantee that it will be there tomorrow, next week or next month. The net is too loosely defined, and traffic patters and net connections too vague to insure the permanence of anything.

One thing I can guarantee though, now that you have been hooked, you will be extremely reluctant to abandon your worldwide search for knowledge and information. Ain't technology fun and interesting? Now, if we can only get just a few more hours in the day...few more days in the week.... Oh well...

More to come... John Moore—KK5NU

## VE EXAM RESULTS MAY/JUNE 1996

by Harold Parker—ND5F

B-VARC again sponsored and administered the ARRL's Amateur Radio Examinations that were held on Tuesday evening, May 14, 1996 at Strake Jesuit College Preparatory in Houston.

### The VE Team consisted of:

Chuck Andrews - N1SI  
Harold Parker - ND5F  
Lanny Poteet - KB5VTB

### The Assistants were:

Cass Germany - KG5IT  
Irene Gordon - N5AYX

A total of 12 exams were administered during the evening to 8 applicants. Two (2) unlicensed candidates received their new Technician licenses and one (1) upgraded with a total of 6 elements passed. The overall "pass rate" for the evening was 50%.

Congratulations to all the following who upgraded and/or passed exams:

Raymond Barron—KC5TWN - General  
Patricia Dobson - Element 2  
Micah Reeves - Technician  
James Wells - Technician

B-VARC again sponsored and administered the ARRL's Amateur Radio Examinations that were held on Tuesday evening, June 11, 1996 at Strake Jesuit College Preparatory in Houston.

### The VE Team consisted of:

Carl Albrecht - AA5JW  
Minh Ha - ACSAW  
Harold Parker - ND5F

### The Assistants were:

Cass Germany - KG5IT

A total of 22 exams were administered during the evening to 10 applicants. Six (6) unlicensed candidates received their new Technician licenses and one (1) upgraded with a total of 15 elements passed. The overall "pass rate" for the evening was 68%.

Congratulations to all the following who upgraded and/or passed exams:

Sue Barclay - Technician  
Ronald Garney - Technician  
Darrell Glueck—KK5LG - Element 4B  
Mildred Jones—KC5UTP - Technician Plus  
Asim Khan - Technician  
Emma Khan - Technician  
Daniel Mattis - Element 2  
Gary Raney - Technician  
Bryan Trammel - Technician

Many thanks to all the Team Members and Assistants who volunteer their valuable time and effort each month.

All of us at B-VARC again thank Vincent—WA5ETS, and everyone at Strake Jesuit College Preparatory for

making these excellent classroom facilities available to us for our exams each month.

73, Harold Parker—ND5F

## THE WORLD OF TEN TEN INTERNATIONAL

by Al Mattis—N5AFV

Two summer events have been scheduled for members of Ten Ten International. The Bighorn Museum of Amateur Radio located in Genoa, CO, will have their grand re-opening on the July 4th weekend. The festivities will include a BBQ, dance, and VE session. If your travel plans include visiting Nevada this summer, the annual Reno Paper Chasers Bash will be held August 15-18, 1996, at the Circus-Circus Hotel in Reno, Nevada.

The Houston S.H.O.T. chapter continues to have 6 to 12 local stations check into its Tuesday evening net. With the frequent E-layer openings of the past few weeks, out-of-town stations have also been able to check into the net.

Paper chasers continue to be active on 28.345MHz and 28.375MHz when the band is open. Chapters with specials this month include Choo Choo Belles (GA), Pirates of the Mississippi (IL), and Twin Cities (MN). The Fort McHenry and Cornerstone (MD) chapters have announced that K3TUJ is the new certificate manager for those chapters. The Air Capital chapter (KS) has appointed KF0ZL as the new certificate manager for their worked all states program. The new Mule Town chapter (TN) has become popular among paper chasers during the recent band openings.

Ten Ten members received news of the death of Helen Harding—KBOGDI, on May 5, 1996. Helen, an active paper chaser, was the wife of Glenn Harding—K7OMK, the previous 1000+ bar manager for Ten Ten International. Ten Ten members were also saddened to learn of the death of John Hugentober—N8FU, on May 17, 1996. Hugentober was the Area 8 District Manager for Ten Ten International, and was also very active in FISTS.

During the last few weeks, summer E-layer propagation has been occurring almost every day on the 10m band. The openings usually last at least an hour or

more, and may occur at any time of the day or night. In the last month, I have worked stations in AL, GA, IA, IL, IN, KS, MN, MO, MI, NE, TN, and TX. The signals have been moderate to strong, and most of these stations were worked while I was mobile. The E-layer openings have also produced some DX contacts with Europe. A Portuguese station was heard here in Houston, but not worked. For the second summer in a row, 10m has been having some exceptional propagation.

Remember, the Houston S.H.O.T. (Space Houston on Ten) net meets every Tuesday evening at 8 p.m. local time on 28.488MHz. All amateurs are welcome to check in, even if they do not have a Ten Ten number. If you are not a member of Ten Ten International and wish to join the organization, please check into the net. There are a lot of exciting activities in Ten Ten, and many friendly people can be found on the 10m band.

**B-VARC RAG CHEW NET CHECK-INS**

*by Sam Wilson—N5CPA*

The B-VARC Rag Chew Net is held on Wednesdays at 8:00 p.m. on 3.960MHz, +/-3kHz. The following check-ins were reported for the month of May:

**May 1, 1996**

N5CPA (NCS), WA5TWL, KF5NU, W5IHY, KG5KV, KC5NMR, WD5CJL, KB5TBZ, N5ECP, KK5RL, W5EFB, W5HFF, WN5A.

**May 8, 1996**

N5CPA (NCS), WA5TWL, KI5SC, KB5PAJ, N5MCK, W5EFB, KC5NMR, W5GLD, KK5RL, WD5CJL, KK5DO, W5IHY, WA5OEN, K5AFV, WN5A, KG5KV, KB5TBZ, N5UOG.

**May 15, 1996**

N5CPA (NCS), WA5TWL, KE5SR, KC5H NJ, KC5NMR, KB5ION, KK5DO, WA5OEN, KC5QZB, KK5RL, N5OAC, WD5CJL, N5AFV, KASTOJ, N5ECP, WD5TYD, WB0MHP, KG5KV, WB8SVR.

**May 22, 1996**

N5CPA (NCS), KG5KV, KK5XR, N5UOG, KF5NU, KK5DO, KK5UO, KK5RL, N5VXU, AB5IP, N15I, KK5CG, N5AFV, KK5W, W5GLD, KC5NMR, WN5A, KC5H NJ, WA5TWL, AK5G, WD5CJL, W5IHY.

**May 29, 1996**

N5CPA (NCS), KI5SC, KB5PAJ, WD5CJL, W5GLD, W5IHY, KK5W, KB5TBZ, WA5OEN, AK5G, KK5RL, KC5H NJ, KG5KV, KK5DO, KK5UO.

**PSN CHECK-INS**

*by Jackie Burton—KC5OHJ*

The Brazos Valley Amateur Radio Club Public Service Information Net had the following check-ins for the month of May 1996. Only the count is listed, as there is not enough room to list individual callsigns:

May 6, 1996	38
May 13, 1996	56
May 20, 1996	47
May 27, 1996	27

**UPCOMING SWAPFESTS . . .**

**July 13, 1996**

Texas City, Texas  
Location: Nessler Civic Center

**SCANNER JACK'S CORNER**

*by Jack Roberts—KB5TMY*

How to monitor the 900MHz trunked systems:

1. The base frequency is 39MHz higher than the mobile frequency.
2. The base frequencies slide back and forth; they do not rotate like the 800MHz frequencies.
3. You must know the 900MHz frequencies of the trunked system you want to monitor.
4. You need to program your scanner with the base and mobile frequencies.
5. Do not use delay.

Here is an example - Alief ISD:

<u>Base</u>	<u>Mobile</u>
938.650	899.650
938.6625	899.6625
938.6375	899.6375
938.6875	899.6875
938.6750	899.6750

**B-VARC CODE PRACTICE NET**

*by Bruce Paige—KK5DO*

B-VARC sponsors a Morse Code Practice Net, called BCN, on Monday and Wednesday nights at 8:30 p.m. CDST, with the exception of the last Monday of the month. The purpose of this net is to offer a consistent code practice schedule for all amateurs who are working on their upgrades. The practice text is sent at approximately 5, 8, 10 and 13 wpm. The signal type is MCW on the 2m frequency and CW on the 10m frequency. The source of the text is announced in CW before the text is sent. The length of the net is usually 25 to 30 minutes. Check-ins are welcome at the start of the net (on 10m, check-ins are taken from 8:15 to 8:30 p.m.). Tune in on 146.47MHz simplex or 28.146.47MHz CW, with a desire to increase your code proficiency and have a good time.

All copy will come from QST and code is generated from a computer text file.

**PUBLIC SERVICE EVENTS**

*by Mike Hardwick—N5VCX*

**July 27, 1996**

ALA Asthma Walk  
For more information, contact Mike Hardwick—N5VCX at 771-4625.

**July 28, 1996**

Katy Flatland Bike Ride  
For more information, contact Bret Prichard—N5VOY at 645-5400.

**PROFILES**

**Rick Hiller—KF5NU**

My ham radio hobby path started in 1960. A friend of mine brought a Dick Tracy CB wrist radio into school. I was interested in something called "electronics," but that event put me on a path to becoming involved with a radio hobby. From then on, throughout high school, I spent countless hours listening to shortwave and CB, building Knight kits and Heath kits and building antennas for shortwave and CB. In 7th grade, my algebra teacher just happened to be K3ATO, Hal Messer, my first "Elmer," who helped form a ham radio club at school. I received a novice license WN3OCV in 1969. My first ham station

consisted of a Hammarlund HQ-180 receiver and a borrowed Heath DX-20 transmitter. I ran 2 separate antennas, as I did not have a TR switch. My transmitting antenna was a 40m dipole coaxially fed, which also worked 15m. The receive antenna was a very short longwire. Although I worked many stateside stations, my biggest thrill was working an LU on 15m one Saturday. I'll never forget running outside to my mother and telling her very excitedly that I had just worked Argentina. Her response was a very unexcited "that's nice dear." Hence, my parents supported my hobby, but never really understood what it was all about. They just knew their son had radios and friends that he brought home to meet them and then alight up the stairs to his room and listen to weird noises and mess up the neighbors' TV. My novice license expired, as at that time they were only valid for 1 year. I didn't renew as I had discovered girls and then went off to college to study electrical engineering. I was always dreaming of visiting the places I listened to on the shortwaves, especially Radio Sofia, Bulgaria and Radio Moscow, USSR. Ironically, my work in the geophysical business has taken me to both of these places, and many others, to live for extended periods of time. Years later, after getting married and with our second child on the way I decided that it was time to again take the plunge. So, in 1986, I called the ECHO Society test liaison, NZ5V, Irv Block, still a very good friend, to inquire about the testing. All I wanted was a Novice license but he talked me into studying the 13 WPM code and the General theory. Surprise to me just 2 weeks later I not only had passed the Novice test, but I had also passed the 13wpm code and up through the Advanced class license theory. 6 weeks later, I was assigned KF5NU. I received my Extra class license in 1988. Why do I like ham radio? First off, it is electronics and secondly it deals with communication with far off places. Over the past 10 years, I have had many different rigs but I presently run a 1970's vintage Drake C-Line receiver/transmitter pair. Due to my antenna design and testing interest I primarily operate 40m and hold weekly SSB schedules with Mel—KB5ION, Maurie—VK3CWB in Australia, and others stateside. My antenna experimenting has caused me to build and test just about every different antenna type that will fit on my small city lot. My current antenna design under test is a shortened 40m delta loop that maintains

full size loop performance. Side radio hobby interests are my collections of old microphones (Do you have any you want to sell or trade?), tubes, Zenith Transoceanic shortwave radios, and old electronic/engineering books. B-VARC is a great club because it reminds me of the club I was in as a teenager, the Reading (Pennsylvania) Radio Club—W3BN. Everyone in B-VARC is friendly, the hams are active in the hobby and their interests cover the gamut of ham radio activities. B-VARC has something for everyone.

**SCHEDULE OF WEEKLY NETS**

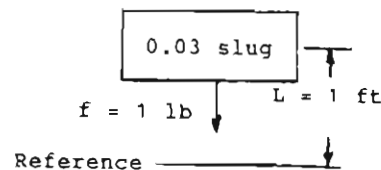
	<b>Monday</b>
7:30 p.m.	34.94 Swap Net 146.94MHz
8:00 p.m.	Ft. Bend Cty EM Net 145.49MHz
8:30 p.m.	B-VARC Code Practice Net 146.47MHz (receive only)
9:00 p.m.	B-VARC 145.47MHz
	<b>Tuesday</b>
6:30 p.m.	RACES Net 146.84MHz (103.5PL)
8:00 p.m.	Ten Ten SHOT Net 28.488MHz
8:00 p.m.	AMSAT Net 147.10MHz
	<b>Wednesday</b>
8:00 p.m.	B-VARC Rag Chew 3.960MHz (+/- 3kHz)
8:30 p.m.	B-VARC Code Practice Net 146.47MHz (receive only)
	<b>Friday</b>
8:30 p.m.	B-VARC Code Practice Net 146.47MHz (receive only)
	<b>Saturday</b>
9:00 a.m.	Houston Emerg. Mgmt. Net 146.84MHz (SkyWarn/ RACES)
	<b>Sunday</b>
7:30 p.m.	ARES Net 147.30MHz
	<b>2nd &amp; 4th Sundays</b>
1:30 p.m.	TX State RACES Net 7.248MHz

**RFI, EMI AND OTHER STUFF**

by Pete Norris—KJ5SS

Last time, several derived quantities were discussed. Some are probably asking where this is all going, especially since the basic unit, Charge, has been ignored. Please be patient! It is first necessary to define energy and power. Once that is behind us, then we can turn our attention to the business of electricity, electronics and magnetics.

Energy or work(w) is defined as a force acting through a distance, which is expressed by:  $w=f \times L$  and has the units of ft-lbs, N-m or dyn-cm. N-m has been given of Joule(J)<sup>1</sup>, and a dyn-cm is an erg. Now if a mass weighing one pound is lifted one foot, then

$$w=1 \text{ lb} \times 1 \text{ ft} = 1 \text{ ft-lb}$$


and we say 1 ft-lb of work has been done and that the mass now contains the energy, or ability, to do 1 ft-lb of work. This energy is called "potential" energy. Later, it will show a capacitor charged to some voltage also contains potential energy, but we are not quite ready for that yet.

Now we need to talk about how long it took to raise our mass to the higher energy position. Power(p) is the time rate of doing work, or  $p = w/T$ .

If 550 ft-lbs of work is done in one second, the power involved is one (1) horsepower. It doesn't matter if a one-pound weight is lifted 550 feet in one second, or 550 pounds is lifted one foot in one second, the power required is one horsepower(hp).

If we can take 10 seconds, then

$$p=550 \text{ ft-lbs}/10 \text{ s} = 55 \text{ ft-lbs/s} = 0.1 \text{ hp}$$

In the MKS system:

$$p = w/T = 1 \text{ J}/1 \text{ s} = 1 \text{ Watt}$$

The Watt (W)<sup>2</sup> is small compared to the horsepower. It takes about 745 Watts to equal a horsepower. The CGS unit is the erg/s, which is 10<sup>-7</sup> W.

And that's it! We will update our table (see page 8) and reflect on all that has been covered. This reflection is advisable prior to considering the Coulomb. Although electrical stuff will be considered in the future, all to come will be based on what has been said up until now.

<sup>1</sup> Named for James Prescott Joule (1818-1889), an English physicist.

<sup>2</sup> Named for James Watt (1736-1819), a Scottish inventor, given the credit for inventing the steam engine.

## ANTENNA COLUMN

by Rick Hiller—KF5NU

### The Frugal Antenna Farm

This column is written to provide an insight to the "large desire but very small budget" approach to amateur radio antennas. All amateurs can appreciate and should be able to obtain some benefit from the "ideas of frugality" presented below.

#### Budget Antenna Farming

Planting an antenna farm is very easy to do if you have sufficient funds to support all of your desires. There are plenty of businesses that will take your hard earned cash and replace it with shiny new antenna hardware. Buying off the shelf is a guaranteed way to get the right pieces to fit together correctly without too much problem.

I, however, look at antennas as the last remaining bastion of amateur radio hardware ingenuity. Couple this with the fact that I have little money to fund this hobby. Therefore, all of my antenna installations evolve over long periods of time with a lot of creative thinking, idea development and scrounging.

#### Scrounging for Parts

Scrounging is one sure way to beat the high cost of antenna construction. Just drive around your neighborhood, (incognito of course—Hi, Hi), on trash day. Particularly the trash days after a nice weekend in the spring when folks have cleaned out their garages. Look for masting and boom material and wire. Old TV antennas have elements and booms that can be used for making VHF/UHF antennas and even end loading capacitive hats for HF antennas.

Garage sales also are a good way to scrounge material. Spools of wire and other electrical goodies can be had along with that lucky find on an old Shortwave radio for \$10....remember one's man's trash is another man's treasure. I once found a great 16' tapered fiberglass pole at a garage sale for \$1.

Last but not least, scrounge from your friends, hams and non-hams alike, for the parts you need for your antenna project. Any amateur worth their salt has a junk box. If you are doing an antenna project let it be known on the air and help will magically come out of the woodwork. Hams have a camaraderie and commonality that is unmatched in the hobby world. We have an instant common point from where to start a relationship. In this day and age, this is a very big plus. A friend of mine built a 3-500Z amplifier completely from donated "junk box" parts.

Below are some of my ideas on creating, very inexpensively, various parts of an antenna system.

#### Masts

A 36 ft. pushup mast at Radio Shack is \$65 plus tax. Convenient, but just not tall enough for hanging some of the lower band antennas. Home Depot sells pressure treated 16 ft. long, 2 x 8's, 2 x 6's and 2 x 4's that can be used end-to-end to make a tilt-over mast and can be held up with 2 sets of guys. The older ARRL Antenna handbooks written in the 1950s and 1960s have details on various designs. Mast support guys can be made cheaply with the TV masting galvanized guy wire, as there is not a significant amount of wind loading involved.

I cost estimated a 42 ft. tilt-over mast I am designing to support my phased 40m delta loops and found it to be around \$65 complete. Scrounging in my junk box will bring that to around \$40.

#### Insulators

Antenna center or end insulators can be made from plexiglas, which is easily cut with a saber or jig saw. ABC Plastics on the outbound feeder of the Southwest Freeway just past Chimney Rock has a good selection of scrap plexiglas at \$1.00 a pound.

#### Booms and Quad Spreaders

Broom sticks and mop handles make great quad spreaders and VHF antenna boom material. Every trash day has a few by the street. When a broom or other tool dies I always cut off the handles and save them for later antenna work.

#### Coils

Air wound coils can be made by winding on toilet tissue or other sized tubes to obtain the shape and then hot glue them to thin wood strips or dowels for support. The equations in the handbook will help you determine a starting point of number of turns etc. Instrumentation such as a Grid Dip Oscillator will help you empirically determine the exact values.

#### Capacitors

Large farad value and high voltage rating capacitors (needed for antenna work) can be made from circuit board material and glass sandwiched between the circuit board material. Wire is used as the capacitor plates interconnect method. A single plate can be slid back and forth to make an adjustable capacitor.

Capacitors may also be made from coaxial cable left open (not shorted) on the end opposite the connection end. Look at the specification for coax and you will notice a pF per foot rating, so just figure the pF you need and cut the cable to the appropriate length.

#### Transmission Lines

Open wire leader versus coax. Coax is one area I would not scrimp. Buy new when you can. However, you can buy used coax at the flea markets if you take the right precautions such as measuring the loss and looking for evidence of water wicking which will corrode the shielding. Loss checking involves the use of a rig, coax jumper, coax to be purchased, wattmeter and a dummy load. Connect the above equipment in series rig, short coax jumper, watt meter, coax under test, dummy load. Set rig output for a fixed power out—PO(rig). Move the Wattmeter to the dummy load end of the coax under test and note the power reading—PO(dummy). Ideally, the readings should match or be very very close for all frequencies you intend to operate.

Loss in dB is figured as =  $20 \times \log$  of  $(PO(rig))/(PO(rig)-PO(dummy))$ . Open

wire leader is great because it has an almost negligible loss factor and is easy and cheap to build using single conductor wire separated by some convenient spreader material such as wood dowel or 35mm film spools or plastic hose, etc. Separation distance determines the line impedance. Check the handbooks for exact characteristics.

#### Information

I am put off by the high prices placed on the ARRL Antenna Handbook and the Radio Amateur Handbook, \$38 and \$30 (before tax) respectively. The latest versions have all of the computer software attached, I guess that is why they are so expensive. Older versions of these handbooks are just as good and much cheaper. These can be bought at flea markets or second hand book stores and used book sales at libraries. Also, libraries usually have one Radio Amateur Handbook and possibly some other radio books on their shelves and it costs nothing to use and copy from these books.

Older magazines, (73, QST, Ham Radio, Ham Radio Horizons, CQ, etc.) can be bought for very little money. Some hams will even give you their old mags. These ham rags have been in print for years and typically will continually repeat articles dealing with basic amateur radio theory and applications on all subjects. They all have had an annual antenna issue since their number 1 issue, and the antenna ideas are great and quite useable even though they may be 60 years old. (Ever heard of a Franklin antenna?) Beginners columns are also very abundant, and rightly so, as there is a continuous crop of new amateurs. These publications repeat the columns on these beginners subjects every 2 years or so. So you don't need to have the latest and greatest editions to get on with your information quest. Newer magazines have the latest equipment ads and the newest construction articles, but the theory is still the same. "The physics don't change but the application does."

The information presented in the Annual "antenna-type" handbooks is usually first published in the magazines and then incorporated into the handbook. An expedient filing system of the magazine articles is a benefit, whether you keep the

full book or tear out the articles and throw the rest away.

#### Summary

I have tried to present a view of the hobby from a different perspective. By doing so, I have hopefully caused you to think slightly differently about your next antenna project. I have in no way covered all of the ways to be frugal. Many of you could teach me a thing or two!

Amateur radio is about building, experimenting and using radios and associated equipment. Not all hams are in the mode of scrounging for their next antenna or radio project but every ham should be open to new ideas on how to pull more enjoyment from the hobby.....as that's what it's all about.

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### **IMPORTANT NOTICE!!!!**

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### **CHANGE IN MEETING DATES**

Due to the fact that the board meeting for the month of July falls on Thursday, July 4th, the July Board Meeting of the Brazos Valley Amateur Radio Club will be held on Tuesday, July 2, 1996, at 7:30 p.m. at the Sugar Land Community Center.

Also, the general meeting for the month of July will be held on Thursday, July 18, 1996.

Please make note of these changes so that you won't miss either one! These dates will be announced on the Monday night public service net as July approaches.

<u>Quantity</u>	<u>English</u>	<u>MKS</u>	<u>CGS</u>
Length (L)	foot (ft)	meter (m)	centimeter (cm)
Mass (M)	slug	kilogram (kg)	gram (g)
Time (T)	second (s)	second (s)	second (s)
Charge (Q)	Coulomb (C)	Coulomb (C)	Coulomb (C)
velocity (v)	ft/s	m/s	cm/s
acceleration (a)	ft/s <sup>2</sup>	m/s <sup>2</sup>	cm/s <sup>2</sup>
force (f)	pound (lb)	Newton (N)	dyne (dyn)
work (w)	ft-lb	Joule (J)	erg
power (p)	ft-lb/s	Watt (W)	erg/s



## REMINDER . . .

The deadline for articles to be placed in the B-VARC Bulletin is the **15th** of each month. Please make every effort to have your article(s) to me by that date. If you know that you will not be able to meet the deadline but are planning to contribute to the newsletter for that month, you may call me to make special arrangements. Otherwise, if I do not have your article(s) by the deadline, it/they will not be published in that issue. Thank you for your cooperation.

—The Editor

### B-VARC CALENDAR OF EVENTS FOR JULY 1996

<b>2nd</b>	7:30 p.m. - B-VARC Board Meeting	<b>19th</b>	6:30 p.m. - Friday night dinner (location TBA)
<b>9th</b>	VE Testing Session	<b>27th</b>	ALA Asthma Walk
<b>18th</b>	7:30 p.m. - B-VARC Regular Meeting	<b>28th</b>	Katy Flatlands Bike Ride



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## Membership Application

Bring to a Club meeting, or mail with check to:  
 B-VARC, P.O. Box 1630, Missouri City, TX 77459

New  Renewal  Roster Update Only

Regular membership dues are \$16.00/year. Life Memberships are \$160/person. Additional family members may join B-VARC for only \$2.00/year each with no additional copy of the newsletter.

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Home Phone \_\_\_\_\_ Work Phone \_\_\_\_\_ ARRL MEMBER? \_\_\_\_\_

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Remittance:

Regular Membership _____	+ Family Membership _____	=	Amount _____
B-VARC Life Memberships at \$160/person	Qty _____		Amount _____
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Worldradio Subscription (\$15.00/year)	Qty _____		Amount _____
			TOTAL _____

I agree to observe the By-Laws of the Club and the rules and regulations of the Federal Communications Commission.

Signature \_\_\_\_\_

Date \_\_\_\_\_



# the B-VARC BULLETIN

The Monthly Publication of the  
BRAZOS VALLEY AMATEUR RADIO CLUB  
Serving the Greater Houston Area

Club Call Sign—KC5OIG

B-VARC's Home Page: <http://www.hal-pc.org/~bvarc>

Editor-in-Chief: Jackie Burton—KC5OHJ (713) 460-1968  
e-mail address: [jbarton@nol.net](mailto:jbarton@nol.net) -or- CompuServe - 71573,471

The Brazos Valley Amateur Radio Club (B-VARC) was originally organized in 1978, primarily as an emergency communications group available to assist the communities of Missouri City and Stafford, when required. Since that time, B-VARC has grown and expanded its activities to become the most active HAM radio club in the southwest Houston area.

Today, B-VARC is truly a general-interest club with an impressive record of Public Service. The commitment to service has been recognized by the Amateur Radio Relay League (ARRL) with the coveted status of Special Service Club. We are proud of our members who represent the finest in Amateur Radio. Membership is not limited to licensed operators, but is open to anyone with an interest in Amateur Radio. Meetings are held at 7:30 p.m. on the second Thursday of each month, at the Sugar Land Community Center. Talk-in assistance is available on the 145.47, 444.55 and 442.5 MHz repeaters.

To obtain information about the club, its activities, or about joining B-VARC, contact Betty Wilcox—KA0TEN, at (713) 859-6512

## B-VARC MEETING SCHEDULE

Tuesday, July 2nd 7:30 p.m. Open to <u>All</u> B-VARC Members	Board of Directors Meeting Sugar Land Community Center
Thursday, July 18th 7:30 p.m. Program: Ice Cream Social/Field Day "Rehash"	B-VARC Regular Meeting Sugar Land Community Center

## B-VARC EATING SCHEDULE

Saturdays—7:00 a.m. to 9:00 a.m. Location: New York Coffee Shop,  
9720 Hillcroft @ S. Braeswood

3rd Friday Dinners—6:30 p.m. SHARP!  
Locations announced each month

Volume 19 Issue 7

July 1996

BRAZOS VALLEY AMATEUR RADIO CLUB  
PO BOX 1630  
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ADDRESS CORRECTION REQUESTED

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