

# the B-VARC BULLETIN

The Monthly Publication of The Brazos Valley Amateur Radio Club

Volume 19 Issue 8

August 1996



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(713) 641-4595

**2-Year Board Member:**

Bud King—N5UOG  
(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

Hats off to all those that helped make Field Day happen once again. In particular, thanks to Allen and Connie Brier for organizing the activities and the dinner. I was on vacation that weekend and didn't get to see all the activity firsthand. I understand from reliable sources, however, that a special thanks is due Gailen—N4SKR, Charlie—KG5KV, Rick—KF5NU, Jack—WN5A, and Darrell—KC5JAR for their hard work in getting the radios, generators and antennas in the air and on the air. Too bad rain and thunderstorms cut the effort short on Sunday. If the drought continues, maybe we should do this again in August.

The purpose of Field Day, of course, is to self-test our ability to respond to emergencies under adverse conditions. Being well into hurricane season, it's not too early to think about how you would personally deal with a severe storm if one were to hit our area. On your next trip to the grocery store, you can pick up a flyer that provides a good description of what supplies all homeowners should have and preparation that should be made. As a ham, you may have some additional items to take care of and get ready.

Consider—

- Are your outside antennas adequately braced or mounted?
- What about your coax? Is it flapping in the breeze? Is it securely connected to the antenna and tied to a stable support?
- Are your HT batteries charged? If they are, will they hold it?
- Do you know which repeater frequencies in your area are used by ARES or RACES? (Houston is 146.84, Ft. Bend County is 145.49.)
- Do you know proper procedures for checking into emergency management nets and for handling traffic?

Think back to the conditions at Field Day. It was hot, humid, and you wound up with a rainstorm. Except for higher winds and a few tornadoes, things may be quite similar if the big one hits here.

73 de Ron—WA5SCE

## FROM THE EDITOR

by Jackie Burton—KC5OHJ

I am looking for someone who would be willing to keep up a calendar of events for B-VARC. Anyone willing to help with this task, please contact me.

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 July 2, 1996. This was the seventh board meeting of the calendar year. The meeting was called to order by President, Ron Grimes—WASSCE, at 7:30 p.m.

The following Board Members and guests were present: Ron Grimes—WASSCE, Jackie Burton—KC5OHJ, Jim Cahalan—KB5TBZ, Pete Norris—KJ5SS, Terry McCoy—KK5RL, Bud King—N5UOG, Claude Sessions—K5HFY, Allen Mattis—N5AFV, Sam Wilson—N5CPA, John Moore—KK5NU, Allen Brier—WB5BIR, and Darrell Kirk—KC5JAR.

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

Treasurer, Pete Norris—KJ5SS, presented the Treasurer's report dated June 30, 1996, showing a balance of \$5,825.31. Pete stated that B-VARC currently has a total of 150 members. A report was made on the cost of the Field Day dinner. B-VARC paid \$588.90, of which \$225.00 had been received from the membership for the cost of the dinner. The treasurer's report was approved with a motion that passed unanimously.

Board Member, Terry McCoy—KK5RL, stated that we now had 2 options with regard to meeting places for B-VARC. The Tracy Gee Center and Memorial Southwest Hospital facilities are both available to us. It was decided that this would be put before the membership at the July meeting. Board Member, Bud King—N5UOG, stated that we had received all the dates for the last 6 months of 1997 at the Sugar Land Community Center. He stated that he was required to sign something indicating that we would completely clean up the room (trash, floors, etc.) that we use and take all of our garbage to the dumpster after every meeting, or we would be billed a \$15.00 per hour cleaning charge. After some discussion, it was decided that we would try to arrange a tour of the Memorial Southwest facility for Thursday, July 11, 1996, at 6:30 p.m. Past President, Allen Mattis—N5AFV, suggested that the Board should decide on the meeting place and then advise the general membership of that decision, which is how this had been handled in the past.

Board Member, Claude Sessions—K5HFY, asked that we

resubmit a letter to the new owners of KHTV requesting the use of their duplicating facilities for the copying of our newsletter. He indicated that the letter needed to be addressed to Bob Chase, who is the Director of Engineering. President, Ron Grimes—WASSCE, stated that he would find a copy of the last letter sent and prepare a new letter. Claude stated that it was his feeling that there would be no problems in our continued use of their facilities.

Past President, Allen Mattis—N5AFV, stated that he had a Sam's Callbook CD-ROM that had been donated by Bruce Paige—KK5DO. It was suggested that we offer this as a door prize at the regular meeting in July.

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 June ranged from 13 to 17.

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. She also reported that the squirrel activity seemed to be down.

Pete Norris—KJ5SS, stated that the Novice/Tech classes were going well, with only one class session remaining. He asked that a letter be sent to the First Colony church of Christ thanking them for the use of the facilities. It was decided that a letter would be sent along those lines to the elders of the church.

President, Ron Grimes—WASSCE, reminded everyone that the July regular meeting would be held on July 18, 1996, and that the program would include the ice cream social and a Field Day "rehash."

Allen Brier—WB5BIR, reported that he had not completed the scoring for Field Day, but hoped to have it completed by the regular meeting in July. He stated that he thought everything went as well as could be expected, considering the problems with the weather.

President, Ron Grimes—WASSCE, passed out copies of the amended By-Laws to the members of the Board.

Board member, Bud King—N5UOG, stated that Donn Washburn—N5XWB, was moving to Austin on August 1, 1996, and that the club should possibly give

him a good farewell at the July meeting. Everyone agreed.

President Grimes stated that Gailen Marshall—N4SKR, would be contacting people concerning the ice cream social and what to bring, etc. Darrell Kirk—KC5JAR, stated that he had napkins, table covers, and spoons that he would bring, and that possibly Betty Wilcox—KA0TEN, had some paper goods/plasticware left over from last year's ice cream social. Darrell stated that he would contact her to find out, and that he would generally take care of that aspect of the event.

There being no further business, the meeting was adjourned by Ron Grimes—WASSCE, at 8:23 p.m. with a motion, second and unanimous vote.

**MEMBERSHIP REPORT***by Pete Norris—KJ5SS*

As of July 2, 1996, the current membership for the club is:

**150****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.



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## FIELD DAY

by Allen Brier—WB5BIR

The 1996 Field Day at Katy Park has come and gone and, well, what can I say? It was set! The rains first threatened on Saturday, after most antennas and stations were set up. Saturday night/early Sunday morning, there were a few light showers but not enough to curtail any operating. Sunday, however, we had some major boomers and lightening displays and all radios were shut down and antennas disconnected. Due to the threat of rain on Saturday, and the real thing on Sunday, attendance was off this year. (Except, of course, for the soccer players who were rained out too. There were quite a few of them. Too bad we couldn't demonstrate Ham Radio to them. Maybe we could've generated some more interest!)

First, the breakdown of scores:  
 80 Meter CW: 29; Phone: 0  
 40 Meter CW: 90; Phone: 40  
 20 Meter CW: 197; Phone 47  
 15 Meter CW: 0; Phone 29  
 10 Meter CW: 0; Phone 5  
 Novice 10 Meter Phone: 61  
 Packet: 7 (counts as CW)

Total CW: 323; Total Phone 116 (plus 61 novice)

In addition, we earned 1100 bonus points from: 3 generators (300 points); ARRL member operators (total of 30 for 300 points); 100 points each from: media publicity, location in public place, information booth, message to section manager, and packet radio. Total for the 1996 B-VARC ARRL Field Day is 2,746 points.

It wasn't a particularly exciting Field Day, due to the weather. We operated 3A again this year. The less than average turnout was disappointing, but those who could come, I think, had a good time. Band conditions were not great, 75/80m was, of course, very noisy. Al—KK5W, and Steve—WA3PMT, had a good run on 40 CW overnight. 20m was fairly good, a lot of contacts were made there on CW. The novice station was manned quite a bit, but, again, conditions were off from last year. We did make a few packet contacts, and generated a message, sent to the ARRL, but there was no VHF/UHF contacts and no attempts at satellite, QRP, etc. Part of that was due to my schedule, which prevented me from organizing Field Day as it should have been. I apologize for that and will try to do better next year if the club wants me to.

I think one of the best parts of Field Day was the food! Connie (my wife) arranged to have Swinging Door cater BBQ brisket, sausage and chicken along with beans, potato salad, cole slaw, iced tea and even pecan pie and all the fixin's on Saturday night. If you missed that, you really missed a great meal. To top that off, Connie literally worked all night to provide us with breakfast on Sunday morning. She made some outstanding Huevo Rancheros along with flour tortillas and orange juice. I don't remember who made the coffee, but I would like to thank him/her. (By the way, I would like to mention that Connie passed her Novice and Technician test Tuesday, July 9. She is now studying for her 5wpm code and asked me the other day for my General and Advanced study guides! I know this doesn't have anything to do with Field Day, but I just couldn't resist putting it in this article!

I again wish to thank all involved, especially the antenna crews. They really worked their BUTTS off setting up the antennas in the heat and taking them down in the rain! I wasn't there when the antennas were going up, because I was driving back to Richmond after a business trip. I heard, however, that Charlie—KG5KV, Gailen—N4SKR, and Rick—KF5NU really worked hard. I'm sure there were others. Sorry I wasn't there to help or even to note who did help. I would like to take my hat off to all who helped with that difficult chore.

Other thanks go to: Tommy—KC5ASI, for the use of his luxurious mobile home and 6.5kW generator (if it wasn't for him, we might have been out of

business...he provided most of the power to run our stations!); Al—KK5W, for antennas, camper, equipment; Ron Sparks—KC5ODM, for his pop-up; Jack—WN5A, for one of our stations, and anyone else for help and for just showing up to have a great time. I am sure I have missed someone, but offer my thanks for your help and apologies for not including your name/call here.

I also wish to thank Rick—KF5NU, Gailen—N4SKR, Steve—WA3PMT and my wife, Connie, for helping with the organization of Field Day this year since business commitments prevented me from putting in a full effort.

It's not too soon to be thinking about next year's Field Day. Hopefully, we will have better weather and a bigger turnout. More than likely, the Board of Directors will decide to hold it at Katy Park again. I will again volunteer to be Field Day Chairman so if you have any ideas, I will be listening all year long. We might even increase to 4A or 5A if we can get enough activity.

Thanks again to everybody for their help, their hard work and for the good times!

73 Allen Brier—WB5BIR

## THE INTERNET

by Jackie Burton—KC5OHJ

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

The Editor

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

by John W. Moore—KK5NU

### I've Got All These Numbers On My List—Now What?

Well, for openers, the absolutely, positively, most important number in the world to you, at this point in time, is the IP number that you are using as you communicate with the rest of the universe. With it, and with it working properly and getting Domain Name Service (DNS) for you and your terminal, all the world knows just who you are and more importantly in the whole scheme of

things, where to find you in that maze of computers that are linked together ever so loosely to comprise the "internet."

You are, for the duration of your connect session, known to all the world by that discreet quad address that gives an identity to you and each of those individual "data packets" that are flying everywhere—sending, seeking out and returning information to the screen in front of you, or the particular storage device that you are using by choice to save your data for future review. Within all of those numbers that define the Internet Protocol (IP) numbering plan, only you are assigned and using that singular number that has been ever so carefully given and assigned for your sole and individual use. Call it your unique address if you will. For without it, you cannot be reached by the "net."

By custom and definition, the IP numbering plan runs the gamut from the initial address in the scheme of 0.0.0.0 to 255.255.255.255 as the ultimate and final address. Please note that both of these numbers themselves, along with some others in the numbering table, are NEVER assigned and used, by you, the end user, for any usable address. And, of course, your failure to respect the IP numbering plan will render any efforts on your behalf to establish a connection null and void. Put them right up there on your list of numbers along with 911, 500kHz, 121.5MHz and, for you aviation type folks, that no-no transponder, never squak code of 0000. The use of these IP numbers not only won't get attention, they simply will not work.

Of course by itself, the number is meaningless. However, once inserted into those routers that control the worldwide internet packet switched traffic, they come alive and let all the world know how to get the data to your terminal. Within the continental United States, there are at least three, soon to be four major interchange points for the internet data traffic. On the east coast, it is located in the New York-Washington DC area; the midwest is served by a Chicago area interchange; the west coast is in the San Francisco area; and Dallas is soon to be brought on-line. Each of the three major carriers have massive data switch centers at each of these major traffic interchange points to handle the 155MB backbone links currently in use. From a mechanic's viewpoint, knowledge of the basic UNIX commands of the tenor of ping, traceroute, and nslookup, skillfully

manipulated from the shell command line prompt, can be most revealing.

And, for what it's worth, I've come across a few interesting numbers by way of statistics. Internet users have risen from 500,000 in 1988 to about 2.4 million in 1990 to some 37 million in 1995. The number of World Wide Web sites has gone from 130 in 1993 to 100,000 in 1995. With the internet adding in excess of 10,000 users per day, at the current rate of growth, about the year 2005, every man, woman and child in the world will be "on the net." Truly awesome, isn't it?

More to follow... John Moore—KK5NU

## VE EXAM RESULTS JULY 1996

by Harold Parker—ND5F

B-VARC again sponsored and administered the ARRL's Amateur Radio Examinations that were held on Tuesday evening, July 9, 1996 at Strake Jesuit College Preparatory in Houston.

### The VE Team consisted of:

Harold Parker -	ND5F
George Pavlik -	N5MCK
Don Schexnailder -	AB5IV

### The Assistants were:

Carl Albrecht -	AA5JW
Cass Germany -	KG5IT
Bob Warren -	AC5HG
Tom Weldon -	KK5VE

A total of 23 exams were administered during the evening to 12 applicants. Eight (8) unlicensed candidates received their new Technician licenses and one (1) upgraded with a total of 17 elements passed. The overall "pass rate" for the evening was 74%.

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

Michael Almaguer - Technician  
 Connie Brier - Technician  
 Tim Dechant - Technician  
 Ronald Gaines - Technician  
 Wendy Harrison - Technician  
 Jim Markwell—KC5DLU - General  
 Paul Newton - Technician  
 Gloria Rooney - Technician  
 Mike Rooney - Technician  
 Jerilyn Seay - Element 3A

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

The next big event scheduled for members of Ten Ten International is the annual Reno Paper Chasers Bash which will be held August 15-18, 1996, at the Circus-Circus Hotel in Reno, Nevada. A number of Ten Ten members have already made plans to travel to Reno and escape the summer heat that has been affecting much of the United States.

The Houston S.H.O.T. chapter is pleased to welcome Daniel Mattis—KC5VAT, as the newest local member of the chapter. The S.H.O.T. chapter continues to have 6 to 12 local stations check into its Tuesday evening net. A number of out-of-town stations have also been able to check in when propagation permits.

Paper chasers continue to be active on 28.345MHz and 28.375MHz when the band is open. Chapters with specials this month include Pirates of the Mississippi (IL) and Steel City (IL). The Choo Choo Belles (GA) chapter is running a special to commemorate the Olympic games being held sometime in 1997. The Okie Relay (OK) chapter has announced that Jerome Doerrie—K5IS, is their new certificate manager.

During the last few weeks, summer E-layer propagation has been occurring almost every day on the 10m band. The openings usually do not last long, and may occur at any time of the day or night. The signals have been weak to moderate, and a beam antenna has been needed to work stations during the weaker openings.

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 June:

**June 5, 1996**

N5CPA (NCS), N5ECP, KE5SR, NI5I, KI5SC, KB5PAJ, N5OAC, WD5CJL, W5IHY, KB5TBZ, KK5DO, W5GLD, KC5HNJ, KK5RL, KG5KV.

**June 12, 1996**

N5CPA (NCS), W5EFB, W5GHK, KI5SC, KB5PAJ, N5ECP, AK5G, WN5A, W5SNH, KK5W, KK5RL, W5IHY, WA5TWL, KC5NMR.

**June 19, 1996**

N5CPA (NCS), KI5SC, KB5PAJ, WD5CJL, N5ECP, W5EFB, W5GLD, KC5NMR, N5UOG, KK5RL, KG5KV, KK5DO, N5OAC.

**June 26, 1996**

N5CPA (NCS), N5UOG, W5EFB, KG5KV, KA0TEN, KE5SR, N5ECP, N5OAC, KB5ION, W5GLD, KD5GM, W5SNH, KK5RL, KK5W, KK5DO, WN5A, W5IHY, KI5WP.

**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 June 1996. Only the count is listed, as there is not enough room to list individual callsigns:

June 3, 1996	38
June 10, 1996	37
June 17, 1996	37
June 24, 1996	42

**UPCOMING SWAPFESTS . . .**

**Austin, Texas (State Convention)**

Date: August 2-4, 1996

For Info: Joe Makeever—W5EJB, (512) 345-0800 (details are also on p. 89 in the July issue of QST)

**Belton, Texas**

Date: October 5, 1996

Location: Bell County Expo Center, Belton, TX

For Info: Mike—WA5EQQ, (817) 773-3590 or e-mail: miefan@vvm.com

**Houston, Texas**

Date: October 11-13, 1996

For Info: Bruce Paige—KK5DO, 933-8385

**SCANNER JACK'S CORNER**

by Jack Roberts—KB5TMY

Sugar Land, Stafford, and Missouri City P.D. and F.D. have a new 800MHz trunked system. This is how your scanner should be programmed:

- 860.9625 Data - lock it out
- 859.9625
- 858.9625
- 857.9625
- 866.0875 New
- 856.9625 Hole freq. - lock it out

Remember to lock out the data frequency every 12 hours and unlock the old data frequency. This frequency changes. Lock out the hole frequency, which is the buzzing frequency. Never changes as of now. Do not use delay.

**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

**September 21-22, 1996**

Ellington Air Show

Contact: Bill Terrell, 338-2918

**October 6, 1996**

American Diabetes Walktoberfest

Contact: Houston ECHO Society

**October 20, 1996**

20K Warm-Up Run

Contact: James Belk—KC5ODL, 395-8701

**October 12-13, 1996**

Alamo Challenge Bike Ride

Contact: Mike Hardwick—N5VCX, 771-4625

**October 12-13, 1996**

Symphony Classic Bike Ride

Contact: Bret Prichard—N5VOY, 645-5400

**October 20, 1996**

20K Warm-Up

Contact: Steve Dunkelberger—N5JBL, 781-6703

**November 17, 1996**

25K Warm-Up

Contact: Allen Mattis—N5AFV, 721-3637

**December 7, 1996**

30K Warm-Up

Contact: Don Wade—WB5IBT, 242-6706

**January 12, 1997**

Houston Tenneco Marathon

Contact: Carl Hacker—KB5LDY, 977-9754

**PROFILES**

**Claude Sessions—K5HFY**

I saw my first ham station in 1954. We lived on a compressor station plant yard near Agua Dulce, Texas on the Gulf Plans near Corpus Christi. The company radio repairman had his station in his home. We learned of it when we bought our first TV set and he had a bad case of TVI. The station had a Globe King transmitter and an HRO type receiver. I was hooked.

We moved to Refugio, Texas my junior year in high school. Here I was introduced to ham radio again, this time in a club, the "Refugio Amateur Radio Club." This club had no dues and no officers. A bunch of guys met in Bob Cooper—W5EYV's back yard around the picnic table. We talked ham radio and told stories for about an hour, then someone would suggest we teach these kids some radio. Bob had a small house on the back of his yard and we used it for a classroom. Bill Houndsell—W5OUK and his dad, Doc—W5UYS, would teach electronics and Bob or one of the other guys would fire up the code oscillator and we would work on code for awhile. Then, the oldtimers would tell us stories or pull jokes on us. It kept us interested.

We had to move in less than a year and I did not try for a ticket. We moved to Runge, Texas, the closest ham I knew lived in Pettus several miles away. I was a senior in high school by this time, and my curiosity made me collect old radios and parts. By the end of my senior year, I had a large collection of these things. I had also discovered Heath Kits.

Having collected all these tubes, the first kit was a tube checker. After I put it together, I started checking tubes. I had a large number of bad tubes and one of the neighbor kids wanted the bad ones, so I let him have them. I did not know what he wanted with them. Anyway, I later found out that I had a cold solder joint in my tube checker and after I fixed it, I found that I was checking good on a lot of tubes that had checked bad. I ran across the street to see if I could get my good tubes back, but the kids had used them for targets with a B.B. gun. Arrrgghh!!! Well, I hard lesson learned well.

After high school, I went to radio and TV college in San Antonio, Texas. The classes ran Monday through Friday noon. We formed a club and met on Friday nights at 7:00 p.m. We worked on projects and ate donuts all night. At around 6:00 a.m., our teacher, Van—W5ZED, would call us all in the shack where we would make a phone contact with Japan or California or somewhere to the far west. This was always the way we ended a meeting. At 7:00 a.m., we all went home and slept.

While I was in school, I got to build several Heath Kits, mainly test gear that the school used in teaching radio and TV. I built a 6m transceiver that was my

favorite piece of equipment for several years to come. I worked many states with the Heath Kit Shawnee. It had a full 4MHz receiver and VFO. It was AM and CW. It ran 15W, and a 2E26 tube was the final.

After 2 years at school, I had novice and technician class licenses. I got the novice first, and 3 months later the tech. KN5HFY was my novice call and K5HFY was my tech call. The novice was only good for a year. Years later, the FCC gave us oldtimers the novice privileges again, so now after 34 years, I am K5HFY, technician class amateur radio operator.

## 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

Now for the real good stuff. In 1913, Niels Bohr proposed the planetary style model of the atom commonly in use today. This model contains a massive nucleus with a positive charge surrounded by electrons (negatively charged) in well-defined shells. The outer shell provides a means for atoms to bond together and also provides electrons to form electricity. This should not be news to the reader, but if it is, many texts cover this material, one of which is *Now You're Talking* available from Radio Shack.

Now, if we were able to collect together  $6.25 \times 10^{18}$  electrons into one place, we would have 1 Coulomb of charge. Since it takes  $6.25 \times 10^{18}$  electrons to equal 1 C, one electron must have a charge of  $1/6.25 \times 10^{18}$  C, or  $0.16 \times 10^{18}$  C. There are numerous machines that do this sort of thing, but the most common way to collect charge into one location is the common electrical cell or a battery. But more of that later. For right now, we have defined the last of the four basic quantities presented in the first of this series.

The properties of the negatively charged electrons and how they can be controlled is the subject of every science class but deserves a review, perhaps with a somewhat new objectivity. A comb, a piece of paper and a room with still air will do for our review. Tear several small pieces of paper from the sheet and place them on the surface where they are able to move freely. Then, do the comb rubbing on the paper thing and move the comb to the scraps. One should notice a scrap jump to the comb and then away. Try it, it's fun! Now recall the explanation: The charge on the comb first attracts the scrap because the negative charge on the comb drives negative charge away from one edge of the scrap nearest the comb exposing a positive bunch of atoms. This allows the oppositely charged comb and paper scrap to be attracted to each other until some of the electrons flow from the comb to the paper, whereupon both are now negatively charged and are repelled, the scrap jumping away from the comb. Try it several times or until the process is accepted. We can only see the effects, not the electrons, or the atoms, or anything except the paper jumping about. Perhaps this is the source of the fascination.



Now look at the first illustration, which shows a representation of positive (+) and negative (-) charges. For the time being, let us neglect the mass of the charges. Imaginary electric field lines are shown terminating on the negative charge and originating the positive charge. These are sometimes called the Coulomb fields and the lines are used to represent these invisible fields. These are lines similar to those we draw to represent the field of magnet and can almost see in the pattern formed by iron filings sprinkled on and near the magnet. The fields extend indefinitely into space.

The next pair shows a positive and a negative charge brought close enough so that the lines now combine, originating on one charge and terminating on the other. The opposite charges attract one another and the Coulomb field lines might be thought of as rubber bands pulling the two charges together. Unlike a rubber band, however, the force of attraction decreases with distance between the charges. This force was described by Coulomb as  $f = k_c (Q Q / L^2)$  which looks a lot like the formula for gravitational attraction introduced earlier. Remember, though, this is not the physical attraction of the two masses, but the electrical attraction between charges which we explored earlier with comb and paper. This force is very powerful. The paper jumped to the comb, something we have never seen between two small masses. Things fall to the earth, but the earth might be said to be fairly massive!

The last illustration shows two like charges repelling each other, the force being the same as for two charges attracting each other. For the fun of it, let's look quantitatively at these forces. For the gravitational constant, we need to know  $k_g = 6.67 \times 10^{-11} \text{ N m}^2/\text{kg}^2$ .

Now, if we make  $M_1 = M_2 = 1 \text{ kg}$  and  $L = 1 \text{ m}$ , then

$$f = (6.67) \times 10^{-11} \text{ N m}^2/\text{kg}^2 (1 \text{ kg})(1 \text{ kg})/(1 \text{ m})^2$$

so  $f = 6.67 \times 10^{-11} \text{ N}$ . Now, that's feeble!

Now, let's do the same for the Coulomb force. For that calculation, we need to know  $k_c = 9 \times 10^9 \text{ N m}^2/\text{C}^2$ . Then, if

$$Q_1 = Q_2 = 10^{-3} \text{ C} \text{ and } L = 1 \text{ m},$$

$$f = (9 \times 10^9 \text{ N m}^2/\text{C}^2)(10^{-3} \text{ C})(10^{-3} \text{ C})/(1 \text{ m})^2$$

WOW, that's AWESOME! That's over 2,000 lbs! Let's go back and play with

the comb and paper some more, now that we've gone through the numbers.

Next time: Alessandro Volta

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\* Some will recognize this as the charge required to charge a 100 microfarad capacitor to 10 volts.

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## ANTENNA COLUMN

by Rick Hiller—KF5NU

[Nothing furnished.]

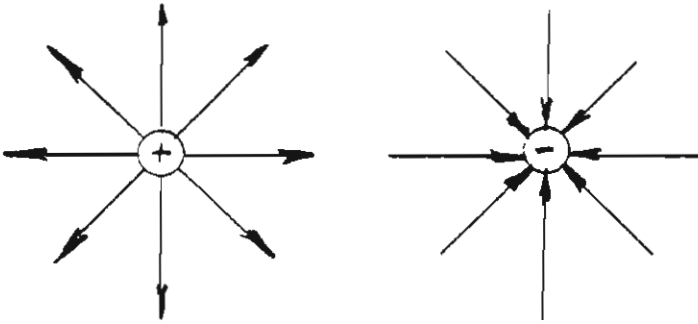


Fig. 1

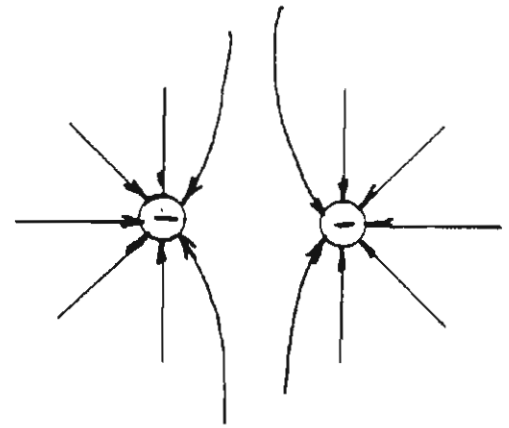


Fig. 3

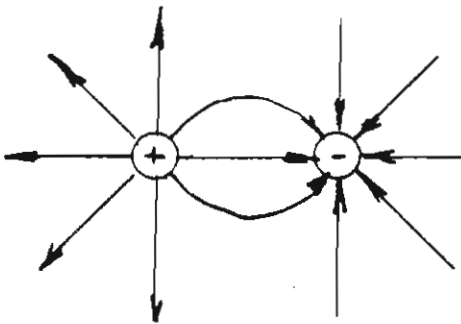


Fig. 2



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 AUGUST 1996

1st	7:30 p.m. - B-VARC Board Meeting	16th	6:30 p.m. - Friday night dinner (location TBA)
13th	VE Testing Session	22nd	7:30 p.m. - B-VARC Regular Meeting



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## Membership Application

New  Renewal  Roster Update Only

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

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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B-VARC Life Memberships at \$160/person	Qty _____	Amount _____
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I agree to observe the By-Laws of the Club and the rules and regulations of the Federal Communications Commission.

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# 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>

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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		B-VARC EATING SCHEDULE
Thursday, August 1st 7:30 p.m. Open to <u>All</u> B-VARC Members	Board of Directors Meeting Sugar Land Community Center	Saturdays—7:00 a.m. to 9:00 a.m. Location: New York Coffee Shop, 9720 Hillcroft @ S. Braeswood
Thursday, August 22nd 7:30 p.m. Program: Contesting Gailen Marshall—N4SKR	B-VARC Regular Meeting Sugar Land Community Center	3rd Friday Dinners—6:30 p.m. SHARP! Locations announced each month

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August 1996

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