

the B-VARC BULLETIN

The Monthly Publication of The Brazos Valley Amateur Radio Club

Volume 18 Issue 12

December 1995



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Vice-President/Acting President:

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Recording Secretary:

Louis House—KD5GM
(713) 498-5639

Corresponding Secretary:

Billy Jones—KC5EVD
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Treasurer:

Donn Washburn—N5XWB
(713) 498-0569

3-Year Board Member:

Bud King—N5UOG
(713) 494-3741

2-Year Board Member:

Claude Sessions—K5HFX
(713) 242-6069

1-Year Board Member:

Vic Richard—N5NAS

Past President:

Doug Holley—KE5SR
(713) 342-8028

NOTE FROM THE PRESIDENT-ELECT

by Ron Grimes—WAS5CE

Greetings from the swamps of southwest Louisiana, and a big thank you to B-VARC for the honor of being elected club president for 1996. I apologize for being absent from the election night meeting, but my project work in Lake Charles required that I be in Louisiana that night. That work is drawing to a close, and I plan on being at the December meeting. An especially big thank you is due to Louis House—KD5GM, for stepping into the B-VARC lead after both Carl, as President, and I, as Vice President, had to bail out at approximately the same time. Thanks, Louis, for a job well done. Also, I would also like to offer my congratulations to those elected to serve on the B-VARC Board. I look forward to working with each of you in the coming year. As always, making next year another successful one will depend on a lot of hard working folks, not just the Board members. A number of opportunities for helping the club on various committees are available, so please give me a call at 341-7137. I would like to hear from anyone that has an interest in serving the club, especially those new to B-VARC or to ham radio. While offering congratulations, I think the group that organized the recent Houston hamfest deserves a big pat on the back for making an impressive showing first time out. Everything seemed well-organized, professionally run, and the facility was great. There have been a lot of positive comments, and I look forward to going again next year. One concern voiced was whether or not the Humble facility might be large enough as the hamfest grew. That should be no problem—the Astrodome may be available for a reasonable cost on fall weekends in 1996 or 1997. Please make plans to attend the annual banquet coming up in January. I missed the chili, but I don't intend to miss the great dinner that Bud—N5UOG, has arranged for that night.

75, Ron

FROM THE EDITOR

by Jackie Burton—KC5OHJ

Even though the weather was a little chilly and wet, from all appearances this year's Gulf Coast Ham Convention was a success. Here's what some of our own B-VARC members had to say:

"I'd give it a 9...only to allow room for improvement."—WASOEN

"Close...but no pecan pie."—WDSDBJ
(Don't worry Larry, they're serving pecan pie at the banquet in January.)

"Close...but no Coke®."—N5VCX

(Hmmm...wonder why they call this the Brazos Valley "Appetite" Radio Club?)

"A qualified success."—N5AFV

"It was great. We're looking forward to next year."—KK5W

"It was great. Said we couldn't do it, thought we might be able to do it, and we did it."—KK5DO
(Yeah, dream on, Bruce.)

And, for you war buffs, an item only to be found at the Gulf Coast Ham Convention...or did you see that "bomb-proof" antenna, Randy?

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—K5HFX, 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.

1996 B-VARC OFFICERS ELECTED

by Allen Mattis N5AFV

Elections for next year's B-VARC officers were held at the November general membership meeting. The new officers will begin their terms on January 1, 1996.

The 1996 B-VARC officers are:

President—Ron Grimes—WASSCE
 Vice-President—Louis House—KD5GM
 Recording Secretary—Jackie Burton—KC5OHJ
 Corresponding Secretary—Jim Cahalan—KB5TBZ
 Treasurer—Pete Norris—KJ5SS
 3-year Board Member—Terry McCoy—KK5RL

Also on next year's board of directors will be:

2-Year Board Member—Bud King—N5UOG
 1-Year Board Member—Claude Sessions—K5HFY

Please give these officers your full support.

In addition to the elections, the November meeting also consisted of B-VARC's annual chili supper. A special thank you to Terri Van Slyke—N5KID, for chairing and coordinating the event. Of course, the chili supper would not have been a success without all the tasty food brought by many club members. Thank you to everyone who helped make the election meeting a success.

B-VARC BOARD MEETING

by Louis House—KD5GM

A quorum of the B-VARC Board of Directors met at the Sugar Land Community Center on November 2, 1995. This was the eleventh meeting of the calendar year. The meeting was called to order by President, Ron Grimes—WASSCE, at 7:33 p.m.

The following members and guest were in attendance: Ron Grimes—WASSCE, Louis House—KD5GM, Donn Washburn—N5XWB, Victor Richard—N5NAS, Claude Sessions—K5HFY, Bud King—N5UOG, Jackie Burton—KC5OHJ, Mike Hardwick—N5VCX, Terri Van Slyke—N5KID, Mel Thatcher—KB5ION, Terry McCoy—KK5RL, and Pete Norris—KJ5SS.

Recording Secretary, Louis House—KD5GM, presented the minutes. The minutes were accepted with a motion that passed unanimously.

Treasurer, Donn Washburn—N5XWB, gave the treasurer's report, showing a balance of

\$3,392.10 to this date. The report was accepted with a motion that passed unanimously.

The Rag Chew Net report was given by Jackie Burton—KC5OHJ, in the absence of Sam Wilson—N5CPA, for the month of October. The Net had 16 QNI for October 4 and 11, 12 QNI on the 18th and 19 on the 25th. Sam wished to express his thanks to Lou Kronberg—W5IHY, and Mel Thatcher—KB5ION, for picking up the net during his absence.

Terri Van Slyke—N5KID, this year's coordinator for the annual chili supper, reported that so far, she had 8 volunteers to cook chili and that all other details would be in order for the meeting on November 9th. Jackie Burton—KC5OHJ, raised the question concerning plastic and paper ware supplies for the chili supper. After a little discussion, it was determined that an inventory of supplies be taken and to replace what is needed.

Louis House—KD5GM, reported that the B-VARC code class is doing okay and should come to an end in about 3 weeks. Louis stated that there are still several people who need to take their 5 wpm exam and that the class will continue as long as there is participation by those persons who have not tested yet.

Jackie Burton—KC5OHJ, Editor of the B-VARC Bulletin, reported that the deadline for articles for the newsletter is on the 15th of the month. Jackie also said that she would like to put swapfest information in the newsletter and that whoever has this type of information should get it to her by the deadline date.

Special Events Coordinator, Mike Hardwick—N5VCX, reported that he is winding down his tenure as Coordinator. Mike reported that several events left for this year have coordinators. These are the 25K, contact Al Mattis—N5AFV; 30K, contact Don Wade—WB5IBT; Houston Tenneco Marathon, contact Carl Hacker—KB5LDY. Also on March 10, 1996 will be the K9 Fun Run, contact Steve Dunkelberger—N5JBL. Mike also stated that he would bring a list of all the events scheduled for 1996 to the December 1995 meeting that can be turned over to the newly appointed Special Events Coordinator for 1996. The Board members expressed their thanks to Mike Hardwick—N5VCX, for the very fine job he did in his tenure as Special Events Coordinator.

Bud King—N5UOG, reported on the annual B-VARC banquet and awards dinner. The banquet will be held at the

Houston Engineering and Scientific Society Building located at 3121 Buffalo Speedway, on Thursday, January 11, 1996, in the Garden Room, starting at 6:30 to 7:30 p.m., with cocktails from the cash bar followed by dinner to be served at 7:30 p.m. Bud presented the menu items, including a choice of entrees, chicken or fish and 2 vegetables, salad, dessert and drink selections. Prices ranged from \$19.73 to \$22.48 per person including gratuity and tax. After much discussion, a motion was made for the club to set a price of \$19.00 per person and the treasury will subsidize the difference in the actual cost per person. Those who plan to attend the banquet can contact Donn Washburn—N5XWB, to pay for the dinner and make choice selections.

Donn Washburn—N5XWB, brought to question the recently proposed changes to the by-laws, concerning the membership dues cycle. The proposed changes were presented to President, Ron Grimes—WASSCE. President Grimes requested an opportunity to review the proposed changes before they are put before the membership for a vote. The Board agreed that this was a good idea.

A question concerning the cost of a life membership was put before the Board. After much discussion, a motion was made to set the cost of a life membership with B-VARC at 10 times the current yearly rate of dues. The motion was seconded and passed unanimously.

Donn Washburn—N5XWB, informed the Board that he had received a letter from Compass Bank, our current banking facility, concerning the possibility of having to pay a service charge on our account. Donn had researched the possibility of changing the B-VARC account to First Interstate Bank. After some discussion, the Board agreed that Donn should go ahead and move the account to save a service charge.

Louis House—KD5GM, brought before the Board information concerning a request from Lester Welch, a representative from the Tatanka Boy Scouts District of the Alief area, for B-VARC to put up a manned radio station in the West Oaks Mall for their festival. The festival will be held on March 9, 1996. There will be an organizational meeting sometime in December this year. The pleasure of the

Board was for B-VARC to volunteer to participate in the festival. Louis stated that he would like to attend the organizational meeting in December and that he would like for someone with experience in these events to attend as well.

With no further business, President, Ron Grimes—WASSCE, adjourned the meeting at 9:11 p.m. with a motion that passed unanimously.



MEMBERSHIP REPORT

by *Donn Washburn—NSXWB*

As of November 9, 1995, the current membership for the club is:

226

OUT OF THIS WORLD HAM RADIO ACTIVITY

by *Bruce Paige—KK5DO*

Segment: Types of Antennas for Satellite Work

This should be the final step in getting your satellite station up and running. What type of antenna should you get? Well, the best type of antenna for working the Oscar satellites are circular polarized antennas. These are antennas either for 2m or 70cm that have elements in both the horizontal and vertical plane. They are phased so that the signal normally rotates to the right. This means they are right hand polarized. Some manufacturers make relay switches which

will change the polarity from right to left hand.

The circular polarized antennas are the most expensive. Be prepared to spend around \$500 for a pair of 2m and 70cm antennas. You do not have to purchase both antennas from the same manufacturer. The antenna plays a very important role in working the satellite. It is the first part of your station that will receive the signal and the last one to transmit it. If you have a crummy receive antenna and a good transmit antenna, lots of people will hear you calling CQ, but you won't hear them.

Now, let's say that these antennas are a bit too expensive for you right now. You can get away with using a single plane antenna. It doesn't matter if you mount it vertically or horizontally when operating the satellite. The problem you will find is that the satellite is spinning and you will hear the signals fade in and out. This is eliminated with the circular polarized antennas. There are many Europeans that use a single plane antenna.

One thing that is mandatory if you are going to work the Oscar's: You must have a means to point the antenna at the satellite. This means having an azimuth and elevation rotor. If you are new and going to purchase your equipment, you should think about the Yaesu 5400 rotor. This has both azimuth and elevation controls in one box and has a special connector so that you can later add computer control of the rotors. There are many good products on the market for controlling the rotors from stand-alone boxes to those that plug into the parallel port to those that have a card that goes in the computer. A simple XT computer will work just fine for the tracking—speed is not important. I still do all my tracking by hand. I only have to work when operating FO-20 and the RS satellites. You must have the rotor controls if you plan on operating the pacsats.

Some manufacturers make relays that will switch the polarity of the antenna. My antennas do not have this switch and I have found that in better than 85% of the time, I have no problem in working anyone. In about 10% of the time, it is difficult and would have been better if I could switch polarity. In the other 5%, I could not work the station.

The polarity switch could add about \$50 to the cost of the antennas. And, if you switch the polarity while you are transmitting, you could blow the relay. There has also been talk that some relays are not properly sealed from the elements and need to be replaced. Check with some friends as to what they did to weatherproof theirs and if they are happy with the relays. Since I don't have the switch, I cannot comment on any of the brands. Some of the brands out there making good antennas for satellite use are KLM, M2, Hy-Gain and Cushcraft. KLM, Hy-Gain and Cushcraft make antennas with a polarity switch. M2 does not. I have the M2 2MCP22 and the 436CP30. Rather than bore you with all the specs for these antennas, basically the 2m antennas are about 19 feet long with an 11-15db gain and the 70cm antennas are about 10-14 feet long with a gain of about 15db.

As you can see, all the antennas are roughly the same length. You also need to make sure that you mount them high enough so that they can elevate to 90 degrees straight up and rotate 360 degrees. This can be a problem if you think you might have to guy the tower. The guy wires could be in the rotation path of the antennas. Check this out before you sink the tower in the ground and find it's not going to work after you have mounted the antennas. Also, keep your cable runs as short as possible to minimize your signal loss.

Next we have a specialty antenna. M2 makes an eggbeater antenna. It has two loops which are 90 degrees apart. It is great for working the low orbit satellites from a mobile station, but does not work very well on AO-10 and AO-13. Their signal is not directional enough. I remember working a station in Alaska that was mobile and had to cut the QSO short because a policeman that pulled up next to him wanted to know what he was doing.

For working RS10 and RS15, you only need the 2m antenna for transmitting and a rotor to point the antenna. For receive, you can use a dipole, vertical or beam. Each receive antenna will give you dead spots, so you might need to use two different types of antennas and switch to the one that receives the best. I worked RS15 for the first time recently, and I found I could hear very well from the beginning to the end of the pass with my

inverted vee. Its apex is at 27 feet and one leg is 29 feet and the other is 59 feet. I was surprised at how well the signals sounded during an 11pm pass; however, the following morning, the signals sounded very low and there was more fading in the signals.

Carefully check out the different antennas so that you can make a good decision as to which one will best suit your needs. I have used my antennas both at field day and at home. I have worked people using all the brands mentioned above, and each has sworn how good they were. You can still get a good buy on the old Cushcraft AOP-1 antennas, but they are not as good as their new line. Satellite communications is a lot of fun, especially that first QSO on your new station. When you get the antennas up, the coax run, the radio plugged in and you point the antennas to where the satellite is supposed to be, hear someone and call CQ. That first time when you hear your own voice echoed from the satellite is very exhilarating. You made it, you are now a satellite operator. I even felt this way recently when I made my first RS15 contact. That was just as exciting as my first one was on AO-13. It is amazing how we manage to find a 70kg hunk of metal orbiting the earth, send a radio wave to it and there is someone somewhere that is doing the same thing and we have a QSO. Simply amazing.

THE INTERNET

by Jackie Burton—*KCSOHJ*

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

Also, please remember that Billy Jones—*KC5EVD*, is in the process of adding e-mail addresses to the roster. If you have an e-mail address, please relay that information to him via e-mail at his Internet address, bjones@aramco.com, for inclusion in the next printing of the roster.

The Editor

All You Want to Know About the Internet and More

by John W. Moore—*KK5NU*

Where Do I Find It?

Where do you find this thing called the Internet that everyone is talking about everywhere you turn today? And, just what do you do when you find this new onramp to the "Information Superhighway" that everyone has to get up-to-speed on to avoid being run over and merely becoming roadkill on the freeway?

First things first. Before you get to play out in the street, you have to have a go cart—a computer, if you want to call it that. There is absolutely no room for pedestrian traffic on this roadway, and we certainly do not want to play at the speed of light that all of this information moves along at. Even if you don't readily have access to a computer, you might just want to ask your children or grandchildren to help you out—there is a solution! Numerous public access terminals are available, and there should be one near you. How do you go about finding one? Well, it has been made very simple for you. All you have to do is ask. Almost every school in this country has at least one or more available. To locate the one in your neighborhood, just call the National Telecommunications and Information Administration. This is the U.S. Government agency set up under Vice President Al Gore's auspices to, among other things, educate the public on the uses of the "Information Superhighway." The Internet itself has been operational for over 25 years now, funded in the beginning to a large extent by the Federal Government. Not only do a vast majority of the public not have access to computers, they have a limited understanding of the role that computer technology plays in today's society in obtaining a job. Call 1-800-NII-8818. This toll-free number has been in operation only since late May 1995 and, according to the agency, one of the most common questions comes from people without computers wanting to find a public site in their neighborhood where free access is offered.

More to come...

John Moore—*KK5NU*

VE EXAM RESULTS NOVEMBER 1995

by Harold Parker—*ND5F*

*B-*VARC** again sponsored and administered the ARRL's Amateur Radio Examinations that were held on Friday evening, November 3, 1995 at the first Gulf Coast Ham Convention in the Humble Convention Center.

The VE Team consisted of:

Louis House -	KD5GM
Henry Morrison -	W5RIY
Harold Parker -	ND5F

The Assistants were:

Carl Albrecht -	AA5JW
Cass Germany -	KG5IT
San Neal -	N5AF
Don Schexnailder -	AB5IV

A total of 8 exams were administered during the evening to 4 applicants. One (1) unlicensed candidate received a new Technician license and one (1) upgraded with a total of 5 elements passed. The overall "pass rate" for the evening was 63%.

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

George Aldridge, Jr. - Element 2
Gerald D'Entremont - pending, General
Richard Shaw - Technician

Many thanks to all the team members and assistants who volunteered their valuable time and effort to help make this first Gulf Coast Ham Convention a success.

-and-

*B-*VARC** again sponsored and administered the ARRL's Amateur Radio Examinations that were held on Tuesday evening, November 14, 1995 at Strake Jesuit College Preparatory in Houston.

The VE Team consisted of:

Harold Parker -	ND5F
George Pavlik -	N5MCK
Lanny Poteet -	KB5VTB

The Assistants were:

Cass Germany -	KG5IT
Don Schexnailder -	AB5IV

A total of 16 exams were administered during the evening to 12 applicants. Three (3) unlicensed candidates received their new Technician license. Three (3)

others upgraded with a total of 11 elements passed. The overall "pass rate" for the evening was 69%.

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

Carson Baker - Element 2
 Shirley Cox - Technician
 Jack Featherstone—KC5RIY - Element 3B
 Lalynda Hodges - Technician
 Barry Horwitz—KB5EYK - General
 Ty Le - Technician
 Steve Massie—KC5RGL - Technician Plus
 Frank Sanders—KJ5BI - Element 4B
 Robert Warren—KC5QIP - Element 4B
 Tom Weldon—KC5QPM - Advanced

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

B-VarC RAG CHEW NET CHECK-INS

by Sam Wilson—NSCPA

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 October:

October 4, 1995

N5CPA (NCS), KK5W, KE5SR, W5EFB, KC5MBV, KJ5SS, N5OAC, W5GLD, WA9YNJ, KF5NU, WD5CJL, KG5KV, KK5DO, W7VOT, W5IHY, KD4TTE

October 11, 1995

W5IHY (NCS), KG5SS, AK5G, N5HPZ, KJ5SS, KB5ION, W5EFB, KB5VTB, WD5CJL, KF5NU, W5GHK, K5HFY, WN5A, N5UOG, KC5MBV, KG5KV

October 18, 1995

KB5ION (NCS), N5UOG, KK5DO, N5OAC, W5IHY, W5GHK, KJ5SS, KB5PAJ, KE5SR, KJ5SS, W5GLD, KG5KV

October 25, 1995

N5CPA (NCS), KF5NU, W5EFB, N5AFV, N5OAC, W5IHY, KG5KV,

KB5VTB, WD5CJL, WN5A, AK5G, KK5W, K5HFY, KC5HNJ, KC5KGG, KK5RL, WA5OEN, N5MCK, KJ5SS

REPEATER INFORMATION

(To PL or not to PL...that is the question.)

MERA Repeater to Use Subaudible Tone

The MERA Board of Directors has approved the use of a subaudible tone (CTCSS) of 123.0Hz on the 145.47 repeater for a two-week trial period. Repeater access will require the use of the subaudible tone 24 hours a day from December 1-14, 1995. At the December 14, 1995 B-VarC general membership meeting, repeater users will have the opportunity to discuss the results of the two-week trial period with MERA board members. It is hoped that 24-hour a day use of the subaudible tone will alleviate recent interference problems.

THE WORLD OF TEN TEN INTERNATIONAL

by Al Mattis—NSAFV

The Houston Space Houston on Ten (S.H.O.T.) chapter of Ten Ten International presented a forum about Ten Ten at the Gulf Coast Ham Convention on November 3, 1995. A slide show prepared by Ten Ten International was shown, and the new Ten Ten International listserv was demonstrated. Anyone with e-mail access to the Internet can subscribe to the listserv, and be in e-mail communication with Ten Ten members worldwide.

Paper chasers continue to be active on 28.345MHz when the band is open. Chapters with specials this month include Ocean State (RI), Houston S.H.O.T. (TX), and Speedway (OR). Even though paper chasing has slowed down with the band conditions, Ten Ten members continue to enjoy working on upgrades in many of the 200 active chapters.

Propagation on the 10m band improved this past month. There has been an increase in the number of domestic band openings, with winter propagation occurring. During my lunch break on a recent day, I worked stations in CA, OR,

WA and BC, while operating mobile with 25 watts. Signals were strong, but the opening did not last long. Propagation to Latin America, and occasionally to Australia and New Zealand, has also been reported. Even during the low in a sunspot cycle, 10m will still have band openings.

Remember, the Houston S.H.O.T. 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.

CLASSICAL 25K RACE COMMUNICATIONS

by Al Mattis—NSAFV

A total of 25 amateur radio operators provided communications for the Classical 25K on November 12, 1995. A number of these operators were working their first public service event. It was a cold morning with temperatures in the 30s. Because of the 7:00 a.m. race start, volunteers had to arrive and find their places in the dark. Sunrise was at 6:42 a.m.

The race, which had a course along Memorial Drive, went very well. A total of 2,400 runners registered for the event, an increase of approximately 300 over last year's 25K race. There were no major medical emergencies this year, and no runners were transported to the hospital. The most serious problem handled by amateur radio communications consisted of coordinating the opening of the race course to vehicular traffic following the race. Because of the early start, the communications volunteers were finished at 10:30 a.m. Despite the cool temperatures, the weather was pleasant, and everyone appeared to have an enjoyable time.

A special thank you is extended to M.E.R.A. for the use of the 145.47MHz repeater for talk-in. On behalf of the race officials, thank you also to everyone who helped provide race communications.

UPCOMING SWAPFESTS

[None reported.]

B-VarC ANNUAL BANQUET

B-VarC will hold its annual banquet on Thursday, January 11, 1996. For details on the location, time, price, etc., refer to the minutes of the Board meeting on page 2 of this newsletter.

The menu choices will be as follows:
Tossed green salad and your choice of:

- 10-oz. Ribeye Steak
 - Chicken Oscar with artichokes and shrimp
 - Cajun Catfish Royale, topped with crabmeat, artichokes and tomato sauce
- buttered carrots
au gratin potatoes
pecan pie
your choice of coffee or tea

Please let Donn Washburn—N5XWB know of your choice of entree and how many will be in your party by no later than January 9, 1996. Donn will be collecting this information, as well as your money, at the December 1995 B-VarC board and regular meetings.

ANTENNA COLUMN

by Rick Hiller—KF5NU

Loops - Part 1

Monitor the MERA 145.47 repeater for awhile and you will not only notice that antennas are a very popular topic of conversation, but that the most talked about antenna is the loop—the most versatile antenna ever designed.

What's a loop?

For starters, the loop is probably the most versatile antenna ever designed. Most of the time that a loop is mentioned in these repeater conversations it is in reference to a 1 wavelength long or "fullwave" loop antenna. Geometrically, it is a circular, square, or triangular shaped (Fig. 1) piece of wire that is 1 electrical wavelength long at the design frequency. The physical length, of course, will vary based on this design frequency (Fig. 2).

Unlike many other antennas, the loop can be easily made to be a local QSO gatherer (with a high angle of radiation) or a DX QSO collector (with a low angle

of radiation) just by changing the location of the feed point (Fig. 3). The loop has two very popular shapes—a square or "quad" and a triangle (more commonly called a "delta loop") which is named after, "Δ" (Delta), the fourth letter of the Greek alphabet, and is the shape the loop takes.

If you take the quad (square) loop and pull it so that 2 sides become longer than the other 2 sides, you will eventually end up with a folded dipole. Actually, the fullwave loop was initially designed in the inverse order of this by starting with a folded dipole and pulling it out to look like a square.

There are advantages to each of the geometric shapes which will unfold as the article goes on, but let's look at some of the operational advantages of the 1 wavelength loop.

Loop Advantages

A loop will provide an increase in gain over a dipole or a vertical monopole and requires a similar amount of physical space. Both horizontal or vertical polarization and therefore, high or low angle radiation, can be attained just by changing the coax or ladder line feed point location. On receive, loops provide more signal capture area and are inherently a lower noise antenna than similarly polarized dipoles or monopoles.

Loops have a low Q factor which means broad banded operation and hence a greater useable "SWR" bandwidth. Loops often cover the CW and phone portions of the band for which they are cut. They are very easily multibanded with the addition of a tuner, and the feedpoint impedance excursions seen from harmonic operation are much less than the very large impedance excursions of a center fed dipole operated on its harmonics.

Loops can be mounted vertically, horizontally, or sloping. One delta loop configuration requires only 1 tall support. If necessary, they can be loaded to be physically smaller if you are really pushed for space. Sometimes they can be loaded without affecting the loop's performance (see next month's article). Multiple loops can be used parasitically, or phased to attain more forward gain or directional characteristics.

DX Workhorse

Vertical plane full-wave loops are DX antennas even with being close to the ground. One main factor for this is the

fact that with a horizontally polarized quad loop, the horizontal elements are stacked on top of each other, separated by $\frac{1}{4}$ wavelength and therefore automatically phased (Fig. 4). Another factor is due to the fact that the "closed" circuit configuration provides no high impedance points to couple to noise and the 1 wavelength piece of wire provides a larger capture area.

Space Requirements

Loops use twice as much wire as a dipole, but surprisingly take up about the same amount of space as a dipole since they are a folded, 3-D type of antenna. Loops will also utilize this space more efficiently from a performance point of view.

Loop Books:

The Quad Handbook by Bill Orr
The Low Band DX'ing Handbook by ARRL

Why Do Antennas Work?

Ham transmitters generate a carrier frequency signal, modulate it with information, amplify it and send the signal on its way down the coaxial transmission line. The signal is an alternating current or AC voltage varying sinusoidally in amplitude at a "radio frequency within the amateur bands." At the other end of the transmission line is the antenna, the "transducer" that converts this RF electrical energy to electromagnetic wave energy.

What causes this electrical to electromagnetic energy mode conversion at the antenna? The key is one physical property of all AC (even 120 volt house power). AC generates an electromagnetic energy field that influences the immediate area surrounding the wire which the AC current is flowing through. Higher frequency AC in the kHz and MHz radio frequency range, produces an energy field of electromagnetic waves which travel away from the antenna wire and never return to the wire, like the waves from a pebble tossed into a still pond. These electromagnetic waves will travel through the atmosphere until being captured at a receiving antenna wire and converted back into electrical energy and sent down the transmission line to a radio receiver in the shack of a fellow ham listening to our words of wisdom.

Next Month: Details on the "Delta" Loop and building your own loop.

[See figures on p. 9]

SCANNER JACK'S CORNER

by Jack Roberts—KB5TMY

Here are some frequencies for the Wings Over Houston, Navy Blue Angels at Ellington AFB:

- .118.0 - air boss
- 307.7 - Blue Angels formation (AM mode)
- 275.35 - Blue Angels solo (AM mode)
- 122.925 - pilots
- 253.500 - tower (AM mode)
- 128.600 - ground
- 168.900 - operations (FM mode)
- 170.900 - Maintenance (FM mode)
- 173.590 - Fire Dept. (FM mode)
- 269.900 - A.T.I.S. (AM mode)

Other Airports:

- 118.65 - Sugar Land Tower
- 118.100 - Houston Tower
- 124.050 - Houston A.T.I.S.
- 119.7 - departure
- 123.8 - departure
- 120.05 - approach
- 124.35 - approach
- 121.700 - ground
- 118.700 - Hobby tower
- 124.600 - A.T.I.S.
- 120.800 - approach
- 124.350 - approach
- 121.900 - ground
- 134.450 - departure

**RFI, EMI AND OTHER STUFF:
The Implementation**

by Pete Norris—KJ5SS

Although the theory is simple, EMI control in practice has often been looked upon as something akin to black magic. And so, it sometimes seems that one "fix" may create other problems even more perplexing than the original interference. Happily, in this case, a minimum number of blind alleys were explored.

First, 0.01µF disc ceramic capacitors were connected from the brush leads, immediately at the motor case penetration point, to the case itself. These capacitors were rated at 100 volts and were chosen as they are non-polar and constructed in such a manner as to be particularly suitable for this application.

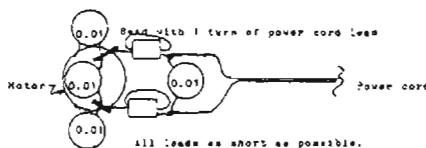
This resulted in 15-20dB RFI reduction as measured on the HF receiver meter, as described in the second part of this series. The measurements were made both with and without the capacitors installed, the receiver tuned to 28MHz, and power line and motor positions carefully maintained throughout the

experiments. A third 0.01µF capacitor was connected across the motor brush leads and this reduced the RFI an additional 5dB.

At this point, having reduced the 10m RFI to the noise level (under the measurement conditions), a VHF handheld with flexible antenna installed was used to determine that a signal was still present on the power cord. Some material 77 beads were available and one was placed on each of the two power leads as close to the capacitors previously installed as possible. This resulted in reduction of the RFI at the VHF frequency. A fourth 0.01µF capacitor was connected across the power leads just past the beads with additional reduction of the RFI. This component configuration is shown pictorially below.

At this point, the handheld could not detect RFI at a distance of about 3 feet from the motor or the power cord. This was considered adequate for testing in the vehicle. Installed in the position for the trip, the RFI could only be faintly detected during weak signal conditions.

Next time: Fine Tuning



Configuration used for testing in vehicle.

SCHEDULE OF WEEKLY NETS

- Monday**
- 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
- Tuesday**
- 8:00 p.m. Ten Ten SHOT Net
28.488MHz
- 10:00 p.m. AMSAT Net
147.10MHz
- Wednesday**
- 8:00 p.m. B-VARC Rag Chew
3.960MHz (+/- 3kHz)
- 8:30 p.m. B-VARC Code Practice Net
146.47MHz (receive only)

- Friday**
- 8:30 p.m. B-VARC Code Practice Net
146.47MHz (receive only)
- Saturday**
- 9:00 a.m. Houston Emer. Mgmt. Net
146.84MHz (Sky
Warn/RACES)
- Sunday**
- 7:30 p.m. ARES Net
147.30MHz
- 2nd & 4th Sundays
- 1:30 p.m. TX State RACES Net
7.248MHz

B-VARC CODE PRACTICE NET

by Louis House—KD5GM

The Brazos Valley Amateur Radio Club sponsors a Morse Code Practice Net, called BCN, on Monday, Wednesday and Friday nights at 8:30 p.m. The purpose of this net is to offer a consistent code practice schedule for all amateurs who are working on their upgrades. The text is sent at approximately 5, 8, 10, 13 and 18 wpm. The signal source is modulated tones on FM (MCW). 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. Voice check-ins are welcomed at the start of the net, but are not necessary to participate. Just tune in on 146.47 (simplex), with a desire to increase your code proficiency and have a good time.

The net roster for the month of October lists a total of 15 stations checking in. They were: K5HFY/NCS, N5UOG, K5SRL, K5SHNJ, K5KGG, K5EUS, K5MBV, K5WZL, K5EUX, K5WZE, W5DRB, K5QXD, K5LMT, K5JRL and KD5GM/NCS.

Have fun and...73 de KD5GM/NM/NCS AR SK

PUBLIC SERVICE EVENTS

Volunteers needed for the following:

Dec. 9th—Saturday
30K Marathon Warm-Up
Contact: Don Wade—WB5TBT
(713) 242-6706

Jan. 14th (1996)—Sunday
Houston-Tenneco Marathon
Contact: Carl Hacker—KB5LDY
(713) 977-9754

Mar. 10th—Sunday
K-9 Fun Run
Contact: Steve Dunkelberger—N5JBL
(713) 781-6703

THE EPICUREAN HAM

by Carl Hacker—KB5LDY

[Not available. Keep watching for that article about dutch ovens, which will hopefully appear in the January 1996 issue.]

FOR A GOOD LAUGH...

25 Thoughts to See Hams Through
Almost Any Crisis

1. Indecision is the key to flexibility.
2. You can't tell which way the train went by looking at the track.
3. There is absolutely no substitute for genuine lack of preparation.
4. Happiness is merely the remission of pain.
5. Nostalgia isn't what it used to be.
6. Sometimes too much to drink isn't enough.
7. The facts, although interesting, are irrelevant.
8. The careful application of terror is also a form of communication.
9. Someone who thinks logically is a nice contrast to the real world.
10. Things are more like they are today than they ever were before.
11. Anything worth fighting for is worth fighting dirty for.
12. Everything should be made as simple as possible, but no simpler.
13. Friends may come and go, but enemies accumulate.
14. I have seen the truth and it makes no sense.
15. Suicide is the most sincere form of self-criticism.
16. If you think that there is good in everybody, you haven't met everybody.
17. All things being equal, fat people use more soap.
18. If you can smile when things go wrong, you have someone in mind to blame.
19. One-seventh of your life is spent on Monday.
20. By the time you make ends meet, they move the ends.
21. Not one shred of evidence supports the notion that life is serious.
22. There is always one more imbecile than you counted on.
23. This is as bad as it can get, but don't bet on it.
24. Never wrestle with a pig. You both get dirty, and the pig likes it.
25. The trouble with life is that you're halfway through it before you realize that it's a "do-it-yourself" thing.

"Relinquish your attachment to the known, step into the unknown, and you will step into the field of all possibilities." —D. Chopra

(Contributed by John D. Seney through BBS.)

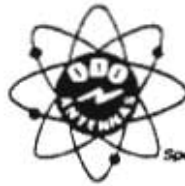
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Chairman of the Board



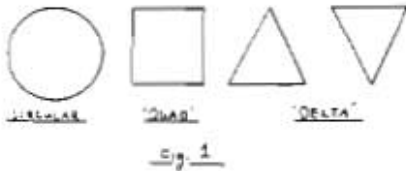
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Fax (713) 784-9740



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



$$\text{Length (feet)} = \frac{100.5}{F_{\text{MHz}}}$$

Fig. 2

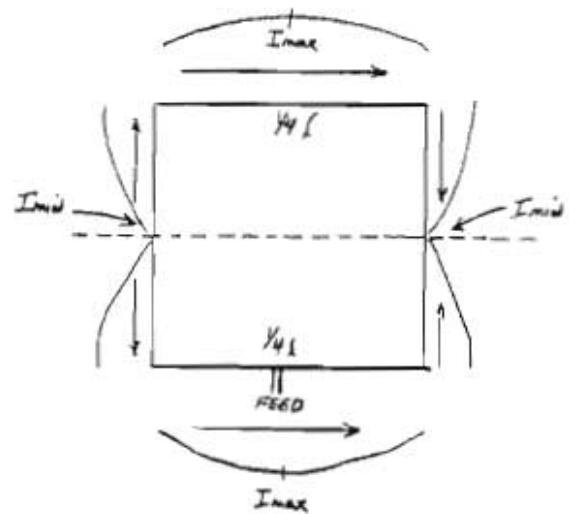
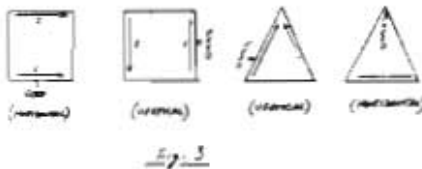


Fig. 4

