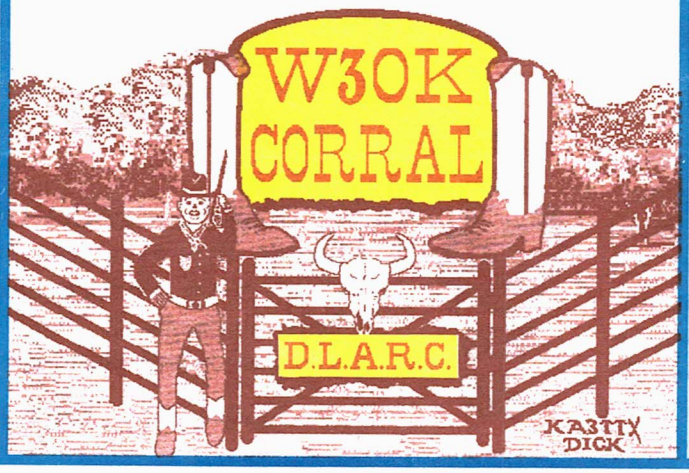
DELAWARE - LEHIGH AMATEUR RADIO CLUB, INC. W3OK

December 1993



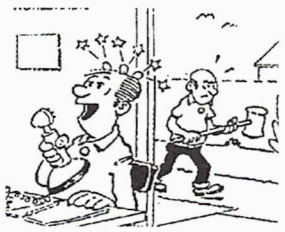
SPECIAL SERVICE CLUB

ARRL Affiliated Club

WHAT ARE YOUR AMATEUR RIGHTS?

What are our Rights as Amateurs?

The December meeting on December 2nd in Kiva Hall at NCC will feature David Eisenberg, Esq., better known to the readers of the OK Corral as WA3HVR, will speak concerning the state of the law pertaining to ham radio antennas & towers.



My neighbor always tells me if I interfere with his TV

As an ARRL Volunteer Legal Counsel for the past five years, Mr. Eisenberg has handled several cases in this area successfully including his own. The subject has become more complex over the years as various municipalities have become aware of the ham antenna issue and have chosen to regulate an area previously ignored by most of them. Many new developments and condominiums have placed restrictive covenants in county real estate records which may completely prohibit amateur radio antennas and, indeed, the operation of a ham radio from residential units. Only the very careful examination of these records can avoid potential disaster to the home buyer as most title companies and real estate attorneys don't bother to alert the buyer of these matters until it is too late if at all.

The advent of PRB-1 by the FCC has only caused more confusion to this field and has no legal effect, though many hams erroneously believe otherwise1

. There are some legal precedents in Pennsylvania which are very helpful to the amateur concerning antenna height restrictions that have sought to be imposed by municipalities through the enactment of zoning ordinances and these, along with other laws, will be explained by our speaker at this meeting.. Come one come all.

MEETING 7:30 KIVA HALL, DECEMBER 2nd

Christmas City Special Event Station

by Bob, KE3AW



There is still time to schedule to operate our club station during the W3OK Special Event station operation on Saturday, December 18, and Sunday, December 19, 9 am to 9 pm local time both days. This is our annual Christmas City Special Event station operation.

Sign up at the December DLARC meeting or contact N3IGA or me to schedule a spot (or more) over the weekend. Spread holiday spirit from the twin Christmas Cities of Bethlehem and Nazareth to points around the world. Operate the W3OK Christmas City Station!

Dues are Due

1994 DUES FOR DLARC ARE DUE!

Make checks payable to: **DLARC,** and mail to ***Richard A. Dech, Treasurer :120 McIlhaney Ave Bath, PA 18014-1612***



Dues remain the same, $12.00 for the year, with $3.00 for each other family member, with one newsletter for each family. Full Autopatch access for all members, same price. If you bring your money to the club meeting, be sure to put any cash in an envelope, checks can just be handed to the money man, Dick KA3MOU.

CHECK YOUR MAIL LABEL, IF THERE IS A RED MARK ON IT, YOUR DUES ARE DUE!!!!

Can DLARC Help Santa?

Dear Tim and Al,



During the past several seasons we've been experiencing difficulty maintaining reliable communications with Santa. I serve as the primary link between our headquarters here and the rest of the world and am reputed to have a nose for this kind of work. We have all been trying to convince Santa to upgrade our equipment. All of those glowing tubes and whirring dynamotors tend to overload the sleigh.

Please help us select equipment to lighten our load and maintain better QSO's with people around the globe. Rudolph (KL7AUS), North Pole.

Tim_Rudolph, thank you for your letter and I want to let you know what a pleasure it is to hear from you. First off, please tell Santa that I've been very good and that there is a spot next to my transceiver just perfect for a new linear. Now on to your question. I really believe in good basic communications. Look around Santa's workshop and see if you can find a large roll of string and two empty cans. Connect the string to each of them and give one to the person you wish to speak to. Speak clearly into the can and I assure you the other person holding the other can will hear you just fine.

Al_Rudolph, for advise such as Tim has just given you, he deserves coal in his stocking! You're right... Santa and you definitely need some new gear. I recommend that you dump the tube stuff over the arctic ocean and refit the sleigh with state of the art satellite equipment. AMSATS and OSCARS will give you reliable, clear communication world-wide.

Tim_That sounds a little extravagant Al! I have to admit that the reduction in gross radio weight will be significant. You will have substantially more room for toys and Santa's helpers on board the sleigh. More room will also be available for a large screen TV and stereo system for Santa's enjoyment on those long rides. Additional Reindeer snacks could also be stored for the working HAMS. Be sure to secure a small antenna array or just connect the coax directly to Cupid and Comet's antlers and run them in phase. Al_No question about it Tim, Santa will have more room. Just think of all the extra goodies he'll be able to deliver to HAMS across the globe. I've been dreaming of a new radio for the shack....

. Maybe now I'll get it? Rudolph, would you consider some cheap technical help at the Pole? I'll be available soon.

Tim_Well, you should have your sleigh in order now Rudolph. Do hang on to the cans and string just in case you need a backup. Above all, thank you for all your hard work and efforts in distributing HAM gear worldwide.

Enjoy a very Merry Christmas and I look forward to hearing from you again. Al_I couldn't say it any better Tim. Merry Christmas and Happy Holidays to all.... Have fun Hamming! To all our readers.... We wish you a safe and joyous holiday season with great propagation!

(atmospheric, that is.) ... Dit & Dah.

--author unknown

Isn't Ham Radio Wonderful?

Ethel Smith, K4LMB

You have probably heard the story about the YF who left the house without her keys and couldn't rouse her husband to let her back in. It seems Jim was working DX and he wasn't ai)out to interrupt it to answer the door for anyone. In desperation, the YF went to a neighboring ham who knew Jim's operating habits. He succeeded in relaying a message through a ZS, telling Jim to please open his front door and let his wife back in. Ah, the miracles of Amateur Radio. (We have no record of the conversation between the YF and OM after she got back in!)

Now here is a new one from the March issue of Worldradio. The other evening a 7 was operating 20-meter mobile in Oregon. He was trying to find some small town that wasn't shown on his map and he was lost. Finally a ZL came on the frequency and suggested he might help (from New Zealand!!) The ZL explained that he had a very detailed map of the area in Oregon and proceeded to furnish the necessary directions to the mobile station to take him directly to his destination.

from the March '93 Foundation for Amateur Radio "Auto-Call"_Ethel Smith, K4LMB, Editor



"My wife expects me home promptly. Would you mind explaining the delay?"

New Ideas from the FCC!!!!!

As discussed at the November Meeting of the DLARC, I am reprinting the entire message from ARRL and the followup. de Clarence W3PYF Editor

TEMPORARY LICENSE RULE PROPOSED

The FCC has issued a Notice of Proposed Rule Making, RM-8288, to grant temporary operating authority to unlicensed persons who pass the examination for a new amateur operator license.



The authorization would begin when the exam is passed and an application for a license is filed, and last until a full-term license is received from the FCC (but not more than 120 days),provided that the person is not a previous licensee whose license was revoked or suspended for less than the balance of the license term and is not subject to an active amateur radio-related cease-and-desist order.

The temporary authority would cease immediately if the application is returned without action, and no temporary authority would be granted if the operation of the station might have a "significant environmental effect."

Those operating under the proposed new rules would use call signs determined by the initials of their name and by their mailing address. The prefix for each such call sign would be WZ followed by a number indicating the appropriate volunteer examiner coordinator region and a two-letter indicator of the class of license being exercised.

The Commission said it believes this system would reduce the approximately 11,000 inquiries it receives each year from amateur license applicants about the status of their application.

The comment deadline for this NPRM is January 10, 1994 reply comment deadline is February 10, 1994.

For the full text of this NPRM send a business-size SASE to the Regulatory Information Branch at ARRL Hq. League members are encouraged to express their views on this proposal to their Division Director.

from ARRL Bulletin 109.....

Your Vote will Count

ARRL Executive Vice President David Sumner has said (ARRL Letter, 26 Oct) that "the League would respond to the FCC proposal when the full text of the NPRM is available and WHEN LEAGUE MEMBERS HAVE HAD A CHANCE TO EXPRESS THEIR VIEWS ON THE SUBJECT TO THEIR ARRL DIRECTORS".

Your opinion will help define the position of the ARRL on this volatile issue. You should make your position known by sending a message to your respective ARRL Division Director. See page 8 of the Nov QST for name and address of all Division Directors. For instance, the ARRL

Atlantic Division Director is Hugh Turnbull, W3ABC, 6903 Rhode Island Avenue, College Park, MD, 20740.(301-927-1797). Packet Address is W3ABC @ WB3V.MD

Hudson Division Director is Stephen A. Mendelsohn, WA2DHF,318 Milford Ave. Dumont, NJ 07628 (201 384-0 670)

DO NOT HESITATE TO LET YOUR OPINION BE KNOWN EVEN IF YOU ARE NOT A MEMBER OF ARRL!

SAMPLE RESPONSE LETTER

by Bob, KE3AW, President DLARC

You may express your feelings as you see fit, however, here is an sample letter, asking for defeat of the "instant license" FCC proposal. The DLARC position is opposition to the proposal. Express your position. You do not need to be a member of ARRL to register your opinion. Explain your position if you wish, but don't be lengthy. Please, do write, phone, or use packet. Whatever you feel on this issue, your opinion to your ARRL District Chairman is needed.

<DATE>

Mr. Hugh A. Turnbull, W3ABC

ARRL Atlantic Division Director

6903 Rhode Island Avenue

College Park, MD 20740

Dear Mr. Turnbull:

Please help defeat of the FCC's Notice of Proposed Rulemaking RM-8288 for "instant licensing."

This bill, if enacted, could be the start of the disintegration of control on the amateur bands. With "instant licensing" we could be creating the problems of Citizen Band radio on our Amateur Bands. I see no benefit from the proposal.

Fight for the defeat of this proposal.

Sincerely yours,

[Signature]

<YOUR NAME, CALL SIGN (OPTIONAL)>

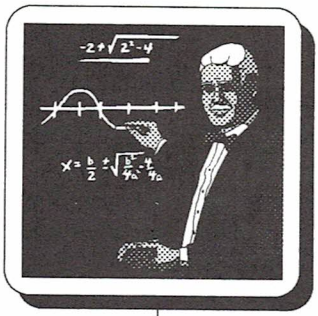
<ADDRESS>

Ima Lidd

Resistivity

by Van, K3CP

Ima Lidd and his Elmer are discussing resistivity of materials and its effect on current flow.



Resistivity and its counterpart, conductivity, are terms used to describe the ability of a material to allow or inhibit the flow of current. Some materials are conductors and others are insulators. (There is a third category called semiconductors). Copper, silver and gold are some examples of good conductors and glass, ceramics and plastics are poor ones.

Let's look at why a substance is a good or poor conductor. All materials are made up of atoms. These atoms differ from each other in the number of shells of electrons around the center or nucleus of the atom. Additionally, they also vary in the number of electrons in the last or outer shell. The shells closer to the nucleus are full and we only need to consider the outer shell composition since this is the one that enters into electrical conduction. Nature doesn't like a vacuum or a void, so it either strives to fill the outer shell or deplete it thus making the next inner shell a full one. Since electrical current is caused by the flow of electrons from one atom to another, it follows that the material that contains the most free electrons (in its outer shell) will be the best conductor. Conversely, a material containing only a few electrons in its outer shell will also be a good conductor since it will attract electrons in an attempt to fill its outer shell.

If a material is composed of atoms whose outer shell has only a few electrons then nature would like to fill that shell. It does so by attracting electrons from other nearby atoms. This electron movement is called electricity and the material is considered to be a good conductor of electricity. (Electron flow can be enhanced by the application of an electrical charge or voltage}. On the other hand, if a material consists of atoms whose outer ring or shell is filled with electrons, it will not attract more. With no electrons moving about there will be no current flowing and this material is an insulator. There is a difference in the degree of resistance or conductivity. Gold, silver and copper are some of the good conductors. Nickel and iron are poor conductors. Variation also occurs in insulators.

A device that resists the flow of electrons is called a resistor. This resistance may be compared to friction. As you know friction causes heating. The heat created by this friction is measured in watts and if it exceeds the wattage rating of the resistor, the resistor will get hot. The resistor will burn open if this heat is too much.

The resistance is measured in units called ohms. Good conductors like silver and copper have some resistance. The larger the wire the less the resistance will be. Some of the common terms to designate the value of resistors are kilohms and megohms. One kilohm is equal to 1000 ohms and one megohm is equal to one million ohms.

You might wonder why we use resistors since they seem to waste electricity and heat up. Well, we wouldn't use them if we didn't need them. Suppose we had a battery that produced 13.8 volts and we only need 12.0 volts and 2 amperes for a circuit. This would be a good place for one. But how many ohms and watts would we specify? Using R = V/I. We need to lose (drop) 1.8 volts across our resistor so we divide 1.8 by 2 and that equals 0.9 ohms. The wattage required is found by using P = I(square) x R. 2x2 equals 4 times 0.9 ohms equals 3.6 watts. We could use a 1 ohm, 5 watt resistor. In this case it's important to use a value of resistance that is close to the calculated value. The wattage, on the other hand, may be larger than the calculated value. If we didn't have a 5 watt resistor, we could use five 0.2 ohm 1 watt resistors in parallel.

An ohm is defined as that value of resistance that will produce a voltage drop of 1 volt when a current of 1 ampere is flowing through the resistor.

Electrons flow toward the positive terminal. If a resistor is placed in this path a voltage will appear across this resistor as stated above. There will be more electrons where they enter the resistor than there will be where they exit. The excessive electrons will cause that end to be negative and the dearth of electrons will be positive.

Since conductivity is the opposite of resistance, it is measured in mhos. No foolin

de Van, K3CP

About Electricity

by Keith Waterhouse (a British novelist)

Most electricity is manufactured in power stations, where it is fed into wires that are then wound around large drums.

Some electricity, however, does not need to go along wires: that used in lightning, for example, and in portable radios.

This kind of electricity is not generated, but is lying about in the air, loose.

Electricity makes a low, humming noise. This noise may be pitched at different levels for use in doorbells, telephones, and electric organs.

Electricity has to be grounded. That is to say, it has to be connected to the ground before it can function, except in the case of airplanes which have separate arrangements.

Although electricity does not leak out of an empty light socket, that light socket is nevertheless live if you happen to shove your finger in it when the switch is on. So, if it is not leaking, what is it doing?

Electricity is made up of two ingredients, negative and positive. Each ingredient travels along a wire covered with black plastic. When the two wires meet in what we call a plug, the ingredients are mixed together to form electricity. Electricity can be stored in batteries. Big batteries do not necessarily hold more electricity than small batteries. In big batteries the electricity is just shoveled in, while in small batteries it is packed flat.

Incurious people are content to take all this for granted. They press a switch and the light comes on and that is all they know about the miracle in their homes. This has never been enough for me; I have to know how things work. If I cannot find out from some technical handbook, then I combine such information as I already have with simple logic. Thus it is easy to deduce that the light switch controls a small clamp or vice that grips the wire hard, so the electricity cannot get through. When the switch is turned on, the vise relaxes its grip and the electricity travels to the light bulb where a bit of wire, called the element, is left bare. Here, for the first time, we can actually see the electricity, in the form of a spark. This spark is enlarged many hundreds of times by the curved magnifying-glass shape of the bulb.

from the March 1989 IEEE Grid, San Francisco Bay Area Council edition, in which it was reprinted from the January 1989 issue of The Toledo IEEE News, Russ Kinner, editor

Sunspot Cycle

from Newsline

CQ Magazine reports that two leading scientific organizations involved in sunspot studies say that cycle 22 will end in early 1997. The Institute for Telecommunications Sciences is pegging April of 1997 as the date while the Space Environmental Services Center is saying March. Both organizations believe that their predictions have a 90% probability of being correct.

But in reporting the news, columnist George Jacobs, W3ASK, also adds his own words of wisdom. He says that solar activity is a function of nature for which present day science has no full explanation. As such says Jacobs, an accurate prediction based on scientific fact is not yet possible.

For those of you not aware, George Jacobs, W3ASK is considered one of the worlds leading propagation experts and he is more often right than wrong.

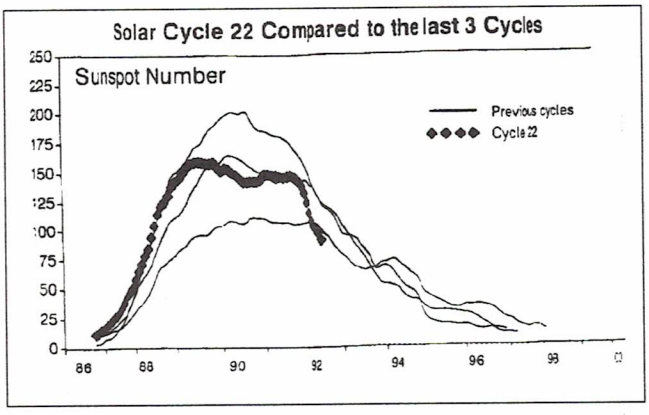
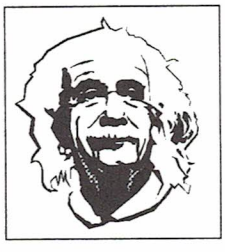


chart courtesy Tselil Harmoni, publication of the Chaverim of Delaware Valley and K2JF.

Think Fast

by Neal Osborn, N4PYB



Most people have heard of Albert Einstein's famous equation **e = mc^2**, and every ham should be familiar with the formula **c = f *(lambda)**. In both, the letter **'c'** stands for the speed of light in a vacuum. Why **'c'**?' Einstein reportedly chose **'c'**for celeritas, Latin for velocity or speed. The English word constant, may also have influenced him, since his theories state that the speed of light is a universal constant. Word play scores again when you notice that acceleration comes from celeritas. Acceleration, of course, is nothing more than velocity's rate of change.

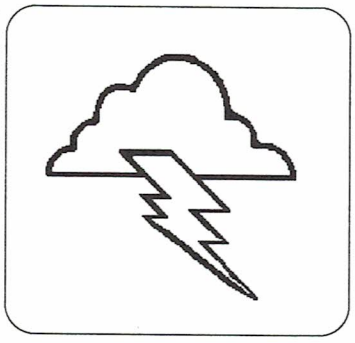
from the August '93 "WB4QNX, The IBM ARC of Boca Raton" (Florida) by Neal Osborn, N4PYB, Editor

LIGHTNING (and GROUND)

More on Lightning Protection

by Ray, W3TDF

Dunder unt blitzen. My Oh My. Ve are hafen zo much lately, yah? How important is your equipment to you? Is it adequately protected? What is considered adequate? Is it impossible for it to be part of the 'path' of a lightning strike? **ARE YOU SURE?**



Many of you have heard me expound on grounding of equipment. I don't believe in it. At least FOR MYSELF. OK? Now that I have made that statement, please bear with me through the following discussion

Your antenna 'system' may not present a good match, (VSWR), to your transmitter without a ground. Sooo, you have to do what you have to do! Also, (and/or), you may get RF burns on your nose or lip while transmitting, which may be reduced or eliminated by grounding. OK, I have no qualms with that either. BUT - - You certainly don't need that ground connection when you are not operating, **RIGHT?**

During an electrical storm, if you leave that ground connected, your equipment is susceptible to being in the 'path'. It will make some difference of susceptibility if you disconnect the power cord and antennas

BUT - You may still not be out of the woods. Is the rotator control box still connected and sitting on top of the rig? Is there a lamp on the desk, still plugged in? Do you know enough about lightning, (and paths), to be sure that it will not jump from here to there? Could a spur of lightning conceivably come through a window, (or a wall, for that matter), and include your grounded equipment in that despicable PATH? How complacent are you, in your sense of security?

Good luck. Don't sit under the apple tree.
73 de Ray W3TDF

This story was planned for earlier in the year, but with the number of stories on Lightning, I saved this for now. It may be winter, but as Ray says, plans now can be helpful in the coming spring or summer..

de Clarence W3PYF, Editor

Auto Electronics Memory Loss Prevention

by John Roank, WB9TQG

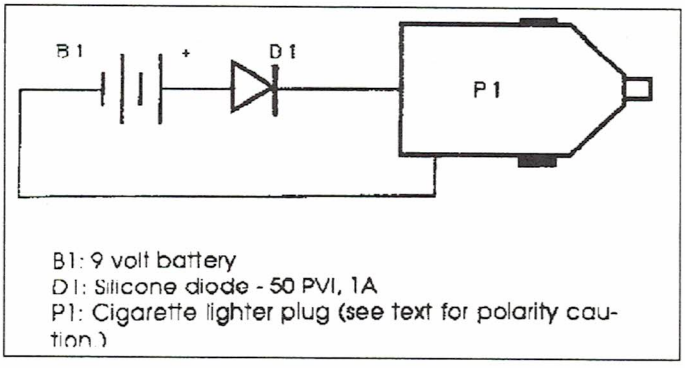
Here's a really simple gadget I cant take credit for: My auto mechanic told me about it.

If you disconnect the vehicle's battery on newer cars, digital clocks forget what time it is, and most electronically-tuned radios lose the contents of their memories. However, a 9 volt battery connected to a cigarette lighter plug through a diode, can easily prevent this type of "electronic amnesia."

Nine volts is enough to retain the memories. The diode isolates the transistor radio battery from the battery in the vehicle, and the cigarette lighter plug provides an easy means of making the connection to the vehicle's electrical system.

Before building this gizmo, check the ***POLARITY OF YOUR CIGARETTE LIGHTER***. On most, the shell is negative and the center contact is positive. If yours has the shell positive, just reverse the connections to the plug.

from the Badger State Smoke Signals publications via "Ground Wave" St Paul RC.



Battery Alert

Using alkaline and carbon zinc batteries in combination can create a pressure explosion great enough to split and blow the end cap off an explosion-proof flashlight!

Of seven different styles inspected, the Eveready Alkaline Energizer was the only battery that incorporated a warning label concerning the hazards of mixing battery types. This is especially disconcerting since major manufacturers are reportedly converting from carbon zinc to alkaline. Be particularly careful with the green jacketed Military batteries which contain no warning labels or chemetal descriptions

.. Play it safe. When you use more than one battery in combination, have them all from the same manufacturer.

from SMARC SPARKS publication

I Worked a Super Station

Contesting can be fun

by Dave. N3JGX

What does contesting mean to me? Well, long hours, low pay, little sleep, and a lot of work. It also means a chance to sharpen my operating skills, enjoy the good fellowship of other hams united in a common cause, and marvel at the technology that lets us contact almost 600 countries on 6 bands in one weekend.

And so another **CQWW** contest for the year started at station **K3ANS** with a rag tag mix of experienced Frankford Radio club members and a full complement of apprentices looking to get their feet wet in their first **CQWW SSB** contest.



Working for the FRC were ops **K3ANS, WA2MKM, KF2BH, NU3L, K3YD, WG3K** and filling out the roster were first-timers **N3KWN N3OWG, WF3H,**, AND **N3JGX.** After the smoke had cleared we had amassed a grand total of 5,171,481 points! And that was under conditions hardly considered outstanding.

There have been a lot of pros and cons circulating on packet recently about contesting, but before you are quick to condemn, answer this: Who out there with an interest in HF radio has never taken advantage of a contest weekend to sneak a few nice DX contacts into your logbook?? During one contest it is entirely possible to get your DXCC in 48 hours or less!

A key factor in our success this year was preparation a full week ahead of time. Serious contesting has become incredibly complex in recent years and just getting the logging network of 4 computers working properly was a major battle won. Today's logging programs do everything, including turning the antenna for the next contact in some cases. The people involved in this type of activity are among some of the most technically minded you will meet. You can find out in a hurry from them what works and what don't including rigs, antennas, digital signal processors, and logging software. You also get a quick education on propagation as you work the greyline and then European Sunrise, then wonder why the "JA's" haven't showed up on a band when you expected. The spin-offs for the casual DXer are numerous.

Of course we couldn't have survived the ordeal without a few pizzas and Hope's delicious Lasagna and Chili.(Bill's XYL) They made the cold rainy weekend worth it.

Next time you find yourself getting aggravated at a contest weekend, just look at it as a golden opportunity to fill the old logbook with some elusive new countries and think of the hours all those stations spent preparing.

You don't have to work the whole contest, maybe just an hour, or as much as you like. Try it and you might find yourself getting caught up in it.

de Dave, N3JGX

FOR SALE

SWR/POWER/FIELD STRENGTH METER

Covers: 3.5 - 150 MH-0-200 watts $7.00

Good Working Order. Call Jim N3EYJ @559-8123

BEAMS FOR SALE

1 Mosley TA33.....$ 125.00

2 8 element on 14ft booms 2 meter beams each $25.00 Both for $40.00.

1 Home brew 10 meter 4 element beam $20.00

Call Pat O'Brien KA3THJ @ 838-9383 after 5:00PM .



I don't know what he says
I only have a no code license

General Classes to Start

by Chris, NU3L

Classes for the General License will start on Monday, January 17, 1994 and continue for approximately 6 weeks. Classes will be held in the Greystone Building from 7 to 9 PM. At each session 1 1/2 hrs will be devoted to theory and 1/2 hr to code. However the purpose of code in these classes is to help people measure their progress in a program of self study.

At the discretion of the class we will also discuss selected topics for the Advanced License examination.

Please let us know if you plan to attend by calling the DLARC telephone answering machine at **820-9110.**

de Chris, NU3L

Two VE Sessions this Month

OCTOBER 30th, 1993 VE SESSION

ARRL National Testing Day

At this Saturday session, two candidates took a total of three elements. There was one upgrade, and one new license...

David B Olsen, KB3ATA	**upgraded to Tech w/HF**
Mark G Petruno	**new Novice**

The VE's at this special session were Tom, N3EBH; Bob, KE3AW; Vic, N3IQD; and John, WX3C.

73 de John, WX3C, Team Liaison

NOVEMBER, 1993 VE SESSION

At the November VE session, 6 candidates took a total of 17 elements.

There were two upgrades, and four new licenses...

Charles S. Spafford, N3LAI	**upgraded to General**
Richard W. Shevalier, N3NXF	**upgraded to Tech w/HF**
Robert Hirsch	**new Technician**
Martin O. Hoppe (DK9LJ)	**new Technician w/HF**
Mark G. Petruno	**new Technician w/HF**
Gregory S. Spak	**new Technician w/HF**

Gregory Spak is 13 years old; congratulations, Greg!

VEs in attendance at this session were Bill, NS3J; Glade, WA3MVQ; Walt, N3MHW; Bob, KE3AW; and Robin, WA3T.

The next session is on December 3rd. Team 4 will be in attendance.

73 de Robin, WA3T, Team Liaison Alternate

Our Friendly Repeater

The Prez SEZ

by Bob, KE3AW, President DLARC



Let's start with a reminder. Our DLARC is not a "repeater club," but a multi-interest amateur radio club. Club members' amateur radio activities continue whether or not "the repeater is temporarily down."

None the less, with so many persons using the local repeaters, we should note some reactions to recent observations. Remember when the 2 meter repeater was faltering? It wasn't the end of the world, but we wondered what we would do without it.

Our expert technical committee, headed by W3LR, K3LPR and N3LLL put much time and effort to the repair of the units. They carefully coordinated the rebuilding of units and had it up and running in short time, especially considering the units' serious problems. They care about the repeaters. You, too, can do your part in showing your interest in our repeaters through your operating procedures.

When you listen to the DLARC repeaters, how do YOU respond when someone sends their call sign? We've earned a reputation of having "***friendly repeaters.***" Are you doing your part to maintain the reputation? As DLARC members, our transmissions reflect the club. We hope the attitude is friendly... and helpful.

Persons traveling in our area may need to use our repeaters. Let's make an effort to answer callers looking for information, or a short conversation along the way.

Repeater etiquette involves following proper FCC procedures. It also requires common sense. From the FCC Rule Book (1989): **, but in no case, give out the emergency (*1).on the air.**

"Some hams stay up all night thinking of ways that a certain interpretation will prevent them from doing something with their radio. Operating flexibility is the name of the game -- the rules provide a framework within which amateurs have a wide latitude to do all kinds of constructive things in accordance with the basis and purpose of the service. The rules should be viewed as positive vehicles for promoting healthy activity and growth, not as negative constraints leading to stagnation."

"As long as you don't violate the rules of Part 97, you're free to choose the quality, quantity and content of your Amateur Radio operating."

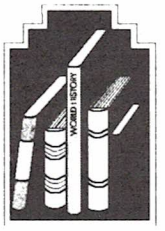
We will continue to follow the established club rules. Our repeater will not be used in any commercial venture unless the operator is in an "urgent situation." "Urgent" generally refers to immediate safety of persons or immediate protection of property. Calling police, fire department, ambulance, or road service is expected and encouraged in these situations.

Remember, there are many others wishing to use the repeater. Be friendly and courteous. Use common sense. Enjoy the repeater. Enjoy all the aspects of amateur radio through DLARC.

de Bob, KE3AW

Just the Minutes

by John, N3IGA, Secretary



The November meeting of the DLARC was held in KIVA Hall at the Community College. President Bob Green, KE3AW, called the meeting to order. There were over 90 members and guests present. Dick, KA3MOU, gave the Treasurer's Report with an ending balance, as of October 31, of $4455.15. Laing, KB3TS, made the motion to accept the report with Carl, N3GRK, seconding.

October meeting minutes were approved as written in the newsletter with Van, K3CP,making the motion and Clarence, W3PYF, seconding.

The DLARC would like to welcome the following new members:

Francis Janoski	**KA2FVT**
Chris Loughman	**N3MGX**
Jeffrey Keller	**Call pending**

Chuck, KD3SQ, made the motion to accept them as members with Dan, KA3ZAT, seconding.

Bill, K3ANS, announced that the DLARC Hamfest will be on August 14, 1994 at C.I.T. Bill also informed members present that Gregg, KB2ANG, will be the new program chairman starting in February. Gregg said that if you have any ideas or information about a program, that you can call him and leave a message on his machine or leave a message on W3PYF's board for Greg.

Bob, KE3AW, informed members that the repeater usage will continue to follow the rules as in the past. The repeater will not be used in conjunction with any commercial venture unless you are in an urgent situation. Calls for police, ambulances, road service, or any life threatening situation is allowed. This decision seems to go along with other repeaters in the area including the Bangor repeater, 147.045.

John, N3IGA, made the announcement about the Christmas City Special Event. It will be on December 18 and 19 from 9 am to 9 pm both days. Let

Bob, KE3AW, or John, N3IGA, know if you want to work the station. You cawork whatever time length you want. It's a lot of fun, so come out and give some time.

Bill, K3ANS, brought up an idea of having a Work DLARC Award. You would have to work 50 members on the low bands. Laing, KB3TS, volunteered to be the administrator of the award.

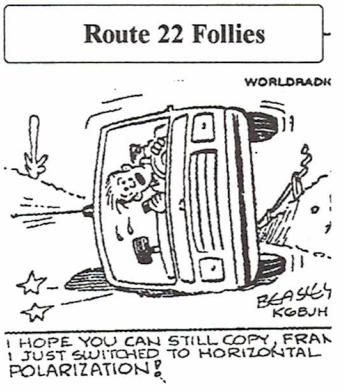
Ray, W3TDF, reported that the club's score was roughly a little over 1.8 million, which was more than last year. Ray should be commended for his hard work again this year with the QSO Party. Ray congratulated Barry, N3NVA, for making 127 contacts on 2-meter and 440 simplex. Good job Barry.

The program was a video tape of the Rochester VHF contest team called "Winning on the Hill". It was about the June 1991 VHF QSO Party. Members present learned about another facet of this hobby. ***de John, N3IGA***

The Art of Social Conversation

by George Hinds, N8CIX

There are things I pay attention to while mobiling down the road. Too often it's the continuing exchanges of boring trivia, as the sole content of conversation on a repeater.



Typically a couple of hams take up seemingly endless minutes to dwell on the antenna or rig they are using in their car.

Or it's the weather. To mention equipment or weather is natural enough_for a couple of minutes. But why go on and on? Who cares? If you're a regular user of a repeater, you've heard it all before, day after day. If you're just passing through, you've heard the same clap-trap on other repeaters during your trip.

It isn't a problem confined to newcomers to hamming; old timers suffer the same affliction. You hear it on 40 meters too. It may be even more prevalent among those reaching an advanced age.

Well, I've got a solution. Start new with the new kids on the block. Change the entry-level testing to include questions on the art of social conversation.

Think of it; what if something like this were adopted? People might actually attempt to carry on intelligent conversations! They might talk about their jobs, other hobbies, trips they've made to exotic places, new developments in amateur radio, and even good places to eat.

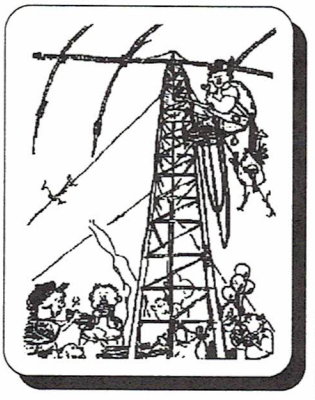
Wow! Wouldn't it be a surprise to hear such things after what we've all been subjected to for so many hours and miles?

Should we mention this to ARRL or to the local VE team, and see what kind of reception it gets? *from the August '93 Mountain Amateur Radio Club "The MARC Communicator"_N8CIX Editor*

Confessions of a New Contester

by George, N3OWG

"I am not a contester! That's great for you guys that are but I am into doing other things."



I remember saying those words to my friend Bill Goodman, at Perkins one Thursday evening and hearing my dear mother say in my mind "How do you know you won't like Liver Soufflé' if you don't try it George?" So when Bill later asked me to be part of the CQWW contest team at K3ANS I agreed if albeit hesitantly. (Mom was wrong about the soufflé' it was AWFUL!)

Three weeks before hand found me in Bills antenna farm posing as go-fer whilst at the foot of one of his enormous towers looking skyward at the great steel structure and the heals of N3JGX I thought "Gee Whiz what is all this fuss about?" I mean I work the world on a rusty Dipole barely off the ground and an old Drake that has earned me the title of "Mr. Key Klick".

The weekend before the contest finds me back at Bills shack. Cleaning! Dust and mold was everywhere! Bills showed me one of his prize pieces a WAZ award. I had seen it before but now it seemed to take on a newer meaning. This was a challenge. We set up four stations complete with computers, radios, antenna rotors, and really big amplifiers. I looked around the shack it looked serious. Some how the "Museum of Ham Radio" had been turned into what looked like an AES warehouse, and people were salivating!

The Saturday of the contest I sat down at my own modest shack in Bangor. I figured that I would make a few contacts and log them in on the old copy of CT (a contest logging program). This way I would know what to do when I went into the big contest room in Easton. I made my first contact (K3ANS) Woop De Doo! I can work that on 2 meters simplex too! Then came Germany, England and Norway. Still no big shakes I had them already.

Then Belgium (a new one) and a bunch of teenie weenie little islands none of which I had in my DXCC log. Well 6 hours and 150 QSOs later my wife who had been standing over me arms akimbo for the longest time simply said "I glad your not doing the contest from the house George!" OOOOOOOOPS!

My shift at the big rig was 5 till 10 Sunday morning. I got up at a jaunty 4:15 reached instinctively for my deer rifle and then realized that this morning we were going for bigger game! I grabbed a coffee and headed for Easton. (Actually I found out that the sight of Bill at 5 AM after he had no sleep for the last 2 days would be enough to wake me sufficiently without coffee!)

I walked into the shack expecting to find some half dead hams slumped over there radios. WRONG! I was instantly accosted by one "DO YOU HAVE A SO-239 TO N ADAPTER???" Good God the man was salivating. No I mumbled into now empty space. The Ham had found another solution to the problem. I was greeted by our host Bill (now looking a bit like Amuscatian the Wild) and sat in front of the 10 meter rig.

"Oh Boy" I thought "10 meters I wonder if the Butterfly net is on?" Settling in to what I figured would be a whole lot of nothing I made a contact. Germany I think and then another and yet another. I started up as a run station. Good God the Band had opened to Europe in a BIG WAY! I fell into a cadence: " CQ CQ CQ contest this is Kilowatt Three Alpha November Sierra...Q R Zed. And bang I was on the business end of a pile up! NU3L opened up a station on my left to hunt and peck multipliers. A tap on my shoulder meant that he was going to make a contact. In 30 seconds later I was back on ....CQ CQ CQ. Had to hold the frequency. "No W's" I screamed into the mike and the approach of a US station. (Where I ever heard that I will never know!) Bill keeps coming over giving me thumbs up and smiling ear to ear. Gotta hold the Freq. & make the Qs! My blood was boiling, heart pumping liquefied steel towards my ever jumping nerves. I was one with the Rig and the world.

Ok in retrospect it was a blast! And OK so now I am a contester, but I still hate Liver soufflé'!

de George N3OWG

** Contest Calendar **

by Barry, KU3X, Contest Edito

Dec 3-5 ARRL 160 Meter Contest (CW)

Dec 8 W1AW Qualifying Run 10-35 WPM

Dec 11-12 ARRL 10 Meter Contest

Dec 21 W1AW Qualifying Run 10-35 WPM

Dec 31 Straight Key Night

CONTEST TIP #19

Tuning rate: When you're going up and down the band looking for stations to work, use the slowest tuning rate you can set your radio to

. Kenwood now has a slow speed of 1khz per revolution. This is especially useful when using a very narrow CW filter.

de Barry ,KU3X

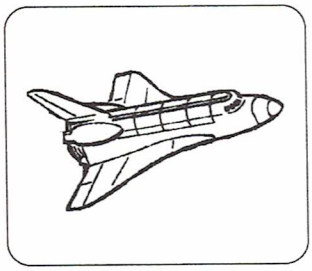
CHECK YOUR MAIL LABEL, IF IT HAS A RED MARK ON IT, YOUR DUES ARE DUE!

How I Connected to the Astronauts and MIR** On a Shoestring Budget

by Barry Vogt N3NVA

as told to Rich Shevalier N3NXF

Background:



One of the gems that Amateur Radio operators are lucky enough to have access to is the SAREX program. The term SAREX stands for Shuttle Amateur Radio Experiment, and was coined by astronaut Tony England W0ORE during the second Amateur Radio equipped shuttle flight in July 1985. Since then, except for several flights after the Challenger tragedy, many shuttle missions have carried a SAREX package in one of its 5 configurations (Config. A; FM voice, FM Packet, FS or SSTV downlink capabilities Config B; FM voice only Config C; FM voice, FM Packet Config D; FM voice, FM Packet, FS or SSTV uplink and downlink capabilities Config E; same as config D but also interfaced to the shuttle electronics) as a secondary component of the mission. During the planning for the last five or six shuttle missions the SAREX component has been getting an increasingly higher priority, and as a result, there have been more and more opportunities for amateurs to make a contact with the shuttle during one of its passes.

Working the Space Shuttle requires only a modest amount of equipment, a little bit of brain (or thankfully computer) power, and an immense amount of luck. Just by way of illustrating my last point about luck, consider that the footprint of the shuttle's radio signal (the area on the earth where the signal can potentially be heard) is about 2000 miles in diameter which translates to about 14000,000 square miles. Imagine how many hams there are in that footprint who will be trying to answer a CQ call by an astronaut (an astronomical pile-up) !

I had tried (half heartedly) to work the shuttle on previous missions, all without success, but during this mission (STS-58) I was determined to give connection with the shuttle an educated, energetic try. To try and give the astronauts a chance against the pile-up, there are 5 FM voice uplink frequencies (in the US): 144.91, 144.93, 144.95, 144.97, 144.99 MHz, but there is only 1 FM packet uplink freq.: 144.49 MHz. For both packet and voice the downlink frequency is 145.55 MHz (please don't transmit here). Given my poor odds of picking the correct uplink freq. for voice, I decided to concentrate my efforts on making a packet contact.

Next, I needed to determine when my station would be in the shuttle's footprint. For this, I needed, and acquired a good satellite tracking program for my computer. With my program (Instantrack) I can download the Keplerian Elements (numbers issued from NASA that tell the computer the dynamics of the shuttle's orbits {named after the 17th century mathematician Johannas Kepler who discovered the laws of planetary motion}). I can print out a list of when the local passes will be and at what elevation the shuttle will be above the horizon in which direction (each orbit takes about 90 minutes, and the longest local passes are about 10 minutes long, but are usually much shorter than that), and I can have a real time graphic on the screen that shows me the shuttle's position and footprint.

All that remained was to set up my station, wait for the right time, and have an extraordinary amount of luck. My station consists of a PK-88 TNC, an IBM 286 clone, and a 25W Kenwood Mobile 2m rig connected by 50 ft of RG-213 to an 8 element, wide spread, Telerex beam antenna. The antenna is turned by means of a HAM 45 rotor and is mounted on my roof. My home is located on the south side, and three quarters of the way up the Blue Mountains, and as a result I estimate my antenna's height at approximately 900 ft above sea level (my ability to work the south is amazing, my ability to work the north is non-existent).

The SAREX Connect:

After 3 false starts, the shuttle finally got into orbit. I downloaded the newest Keplerian Elements into my tracking program, and printed out a list of possible contact times. Then it was time to put my rig to work. Each time my station was in the shuttle's footprint, I would have my TNC send a packet burst out at regular intervals. I monitored the traffic, and saw that indeed the shuttle (using call W5RRR-1) was connecting with packet stations, and my spirits remained high. Several days passed, and I still had not made a connect with the shuttle, and I began to start second guessing myself. I talked to some other members of the DLARC to see if my Kep Elements were up to date. I even put my scanner on the uplink frequency and listened to the thousands of packet bursts of other hams, talk about discouraging ! Still, I was hearing the shuttle, so I knew I still had a chance, and I kept trying. Around lunch time on October 25, there was a pass that would last only a few minutes, and be very low on the horizon to the south. I asked my partner to pick me up for work a couple of minutes late so I could try and connect yet again. Not thinking much of my chances, I began to monitor the packet traffic on 145.55 MHz. When I saw a shuttle connect to another station, I began to send my signal. Like normal, the TNC tried to connect several times with no luck. Having been faced with this type of performance before, my mind started to wander and I began looking as some papers on my desk. While my mind was otherwise engaged, my computer played the little jingle to signify a connect. I was almost scared to look, but when I finally did there it was, printed on the screen:

25-Oct-93 12:48:55 CONNECTED to W5RRR-1

Channel 0:

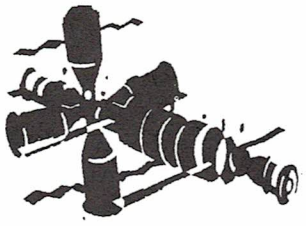
#779-is your STS-58 SAREX QSO number.

I did it ! I had connected to the Space Shuttle. Upon analyzing the event, I really feel that I was able to work the shuttle because I have such a good range to the south, and because the low angle of the orbit allowed me to really beam in on the shuttle (I don't have the ability to change the azimuth of my antenna). **(continued on page 12)**

The MIR Contact:

Continuted by Barrry, N3NVA

This victory with the shuttle encouraged me to try other satellites. The day following my connect with SAREX, I looked at my tracking program, and saw that the MIR spaceship would soon be in range of my station, so I decided to at least listen and see if



Soviet spacestation MIR

I could hear it. It was almost dinner time, and my wife and our girls were making the final preparations. Amid the packet bursts I thought I heard voices. As time went on, the voices got louder, and louder, and I could hear what turned out to be a QSO between a US station and the cosmonaut Aleksander R0MIR. I decided I had nothing to loose, so as the QSO ended I keyed the microphone and said "November Three November Victor Alpha". What I heard after that was a pile-up of voices and then in a thick accent and broken English "all I hear November Victor Alpha, station come again!" All activity in the kitchen stopped. My wife and kids were starring at me in wide-eyed disbelief. I keyed the mike again and said "Yeah this is station November Three November Victor Alpha, how's it goin up there Alex ?" "OK, November Three November Victor Alpha, OK; is OK up here. Want to talk again at 12 o'clock O...." Evidently I lost his signal over the horizon.

So you see, working the astronauts is not a difficult, or particularly time consuming task. All it requires is some simple equipment that you probably already own, a decent shareware satellite tracking computer program, and a whole lot of LUCK

de Barry, N3NVA

The picture of the MIR courtesy of N3CXP from a QSL card he received on a past mission.

Don't Be Too Good A "Good Samaritan"

by George Hinds, N8CIX

Those of us who have for years been active two-meter mobilers can relate numerous incidents where we helped our fellow man by using our radios. We've stopped to assist drivers with flat tires, overheated engines, empty tanks, etc. In doing so until just a few years ago, I doubt many gave a second thought to our safety.

Apparently, being a good Samaritan was assurance enough that no one would think of doing us harm.

Well, today that perception is out of place. Consider these reports:

"Two Colorado good Samaritans stop to help stranded motorist on East Coast highway shot and left to die."

"Good Samaritan buys gas for a down-and-out driver; robbed and shot while pouring it in tank."

"Boulder resident stops to help lady motorist waving for help; her accomplices beat, rob, and shoot this good Samaritan."

On and on it goes. My message to you: **"Personal Safety First."**

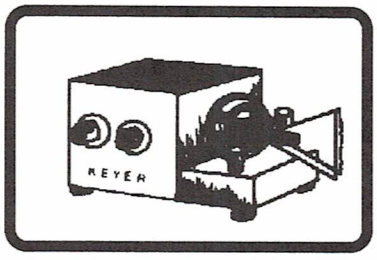
You cannot afford to let your human sympathies make you a statistic on America's crime rolls. You have a radio. Look the situation over as you drive by. If it warrants a call for help, use your radio but don't stop. Let police do the job they are trained and paid to do.

Are there exceptions? Of course. If you come upon an accident with other people gathered at the scene, or if you actually see an accident happen, it's reasonable to assume it is safe to stop to offer communications help.

So be concerned but cautious. Observe and communicate. Use your radio to call the professionals to respond and handle the situation. When you help, make sure you are a survivor, not a victim.

from the April '93 Mountain ARC (Teller County, CO) "Communicator"_N8CIX Editor

Wanted, Dead or Alive



Missing from the Club Station **W3OK** in the Greystone Building in Nazareth. If you borrowed it or know who has it, please contact one of the club officers, or return it as soon as possible.

This is the first time that anything has disappeared from this location, it is hoped that we will not have to keep the doors locked.

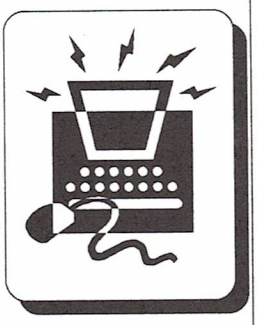


Digital Communications

by Joel, K9TBD

------Part 2 of 2-----

Digital Interview of WA9FIO



-'K9TBD:' What new digital modes do you expect to see?

'WA9FIO:' More complex forms of modulation. Plain old FSK is very simple, as it takes only one capacitor and a diode to do it. FSK is simple to decode, with two channel am or pll detectors. You can improve the signal to noise recovery by 6db byusing DPSK, which is essentially double sideband suppressed carrier AM, and then product detecting it.

A comment about Clover. A careful piece of work by Mike Henry. But I think some of the discussion about hf packet applies here too. Its virtues are that the ARQ cycle length is shorter than packet and that it adjusts power according to error rate. Clover in its fastest mode boils down to QAM-16, or quad amplitude/quad phase shift keying. This is the form of modulation that the typical land line modems that are called 9600 baud modems use. They essentially trade bandwidth efficiency for power. It takes about 16 times the S/S+N ratio to get the same bit error rate for raw data. Works much better than HF packet and is power adaptive. This is not really fine weak signal in noise detection. At about kilobuck it is too steep for me.

PACTOR II is coming. I don't know enough about it to comment, except that it is going to be competitive with Clover on a channel throughput basis at much less money. It uses DPSK as mentioned above to improve the S/S+N recovery.

Plain old PACTOR I works fine, now, with anyone's TU or TNC. The truly optimum decoders work better, but it is workable. When linked up and autoswitched to 200 baud with compression, the ASCII throughput is about 25 characters per second. This exceeds my keyboard speed by a factor of two. It is suitable for sending substantial files. They can be full eight bit. If you do some timing, this is about equivalent to the actual throughput on 1200 baud vhf packet. PACTOR I does not re-link when it fails, so it does not fail gracefully, when the band goes out.

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Plain old AMTOR with an optimum decoder is just fine for me. Optimum decoder means receiver input bandwidth of 350 hz, optimum decoding, and optimum low pass keying filter according to Shannon's principles. ie minimum inter-symbol interference with the keying filter set at 1/2 the baud rate. This is where the multimode decoders fall apart.

'K9TBD:' What are to pros and cons of hardware vs software for a tnc?

'WA9FIO:' Well most stations are basically audio processing then a little computer, together called a TNC, followed by a big computer for you to type on. I still build some equipment, and so my own is for me to build the audio processing and detection, called a TU which then is followed by a big computer doing the digital work, and display. This approach is the DigiCom/BayCom/PMP/Bmkmulty approach.

'K9TBD:' What do you enjoy the most (dx, bbs's, rag-chew)?

'WA9FIO:' Mostly build some darned thing, check it out in ragchews try to pick off a little DX and then go back and re-build it. Lately I have had more fun with working very weak signal RTTY DX. Cause, with an optimum decoder, I can hear them, when the TNC/MMC's can't do it. That gives me fun..

73, Bro.

This concludes the two part interview with WA9FIO. Hope that you enjoyed it.

73 Joel K9TBD

All Amateur Radio Operators are invited to
Participate to the DLARC, RACES & ARES nets
on 146.70 W3OK/RPT with an alternate of W3PYF/RPT 145.11
W3OK trustee Rick Saeger, K3OO
The Nets are held on Sundays at 9:30 AM and Wednesdays at 7:00PM

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DLARC INFORMATION LINE 820-9110

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==1993-1994==

CLUB OFFICERS

President -Bob Green .....KE3AW.....432-8286
Vice-President - Tom Frobase.....N3LLL.....395-3761
Secretary - John Holmes.....N3IGA.....837-7487
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Bob Kratz.....KU3K..... .866-5879
Chris Hornaman.....NU3L.....965-4151
Robin Mosley.....WA3T.....820-0944

--NEWS STAFF

Editor - Clarence Snyder, ...W3PYF....252-2109
Technical Editor.- Wm Van Horn..... K3CP.....691-5979
Digital Editor - Joel Elston.....K9TBD....252-1515
Contest Editor - Barry Kery.....KU3X.....691-8888
Circulation - Bill Broad KA3OEG 253-0729
Mailing List - Clarence Snyder .....W3PYF....252-2109
Printer- Norm Zoltack.....K3NZ.....799-4044

--CLUB MEETINGS

All regular meetings of the D.L.A.R.C. are held on the first Thursday of each month at 7:30 PM at Northampton County Community College
TALK IN ON 146.70
Any comments or articles contributed to
this newsletter should be addressed to
Clarence Snyder, W3PYF, Editor..717 Porter Street, Easton, PA 18042

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KE3AW
ROBERT A. GREEN
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