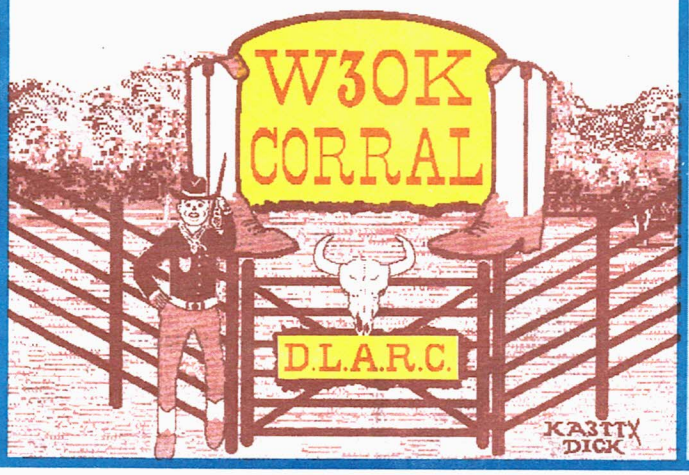
DELAWARE - LEHIGH AMATEUR RADIO CLUB, INC. W3OK

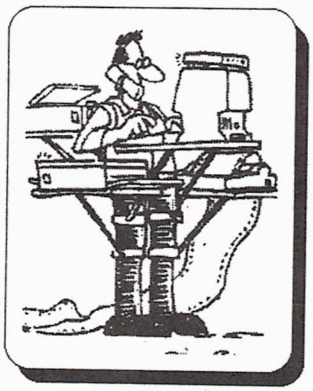
January 1994



SPECIAL SERVICE CLUB
ARRL Affiliated Club

Computers, Ham Radio and Marathoning

by Dr. Terry Pundiak, N3BDC



Computers, Ham Radio and Marathoning, or how I merged several of my passionately exciting hobbies with my career.

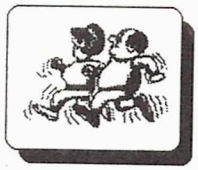
I will be explaining how Jogging marathons, Ham Radio, electronics, and computers were all very serious hobbies with me, and before they tore me apart, I found a way to put them all together in a way that had something to do with my medical career.

At the meeting in **Kiva Hall, at Northampton Community College** on **January 6th** I describe how I set out to construct a digital device from Radio Shack chips to monitor my performance as I ran along, attempting to use electronics to prevent serious irreversible fatigue ("Hitting the wall") which is a major danger in marathoning. The device evolved and evolved involving 2 meter radio transmission of raw data to a base computer. Then leap in improvement I constructed a computer to be worn on my back and this allowed onboard processing of data - even simplifying the project. Now this computer could not only speak to a base computer, but it spoke to me in Morse code through an earphone, giving me information on my speed, fatigue index and respiration rate. Expansion for heart rate and core and surface body temperatures were available.

Despite my reprogramming, up to the last hours before the race, it successfully worked and I ran the New York City Marathon with it on my back in 1981. I am sure that I was the first person ever to run that Marathon strapped to a K-Mart baking dish containing a modified computer - complete with LED's that were blinking Morse code and wires wrapped around the chest and down the leg into a running shoe and a 2 meter FM radio on a belt. It was the peak of my computer, Ham radio, and running careers! Luckily I still had my day job.

***Editors Note**: Terry, N3BDC is a Doctor of Internal Medicine in Easton.. His wife Carol is KA3PEP.*

Hams Do it Again this Year



Once again this year ARRL Hudson Division Director Steve Mendelsohn, WA2DHF, was in charge of Amateur Radio communications at the New York Marathon. This year he was joined by the FCC's Private Radio Bureau Chief Ralph Haller and some 400 other amateurs.

Hams were involved in every stage of the race's planning, and provided logistical and emergency communications, according to ARRL Public Information Manager Steve Mansfield, N1MZA.

Mansfield, who ran (and finished) the race, said he was surprised to see an ARRL flag displayed at the finish line. ***The preceding from The ARRL Letter.***

IS YOUR MAIL LABEL RED LINED?

If it is, your dues are due. The Directory of members and mailing will be stopped if you have not paid your dues by **February 3rd** .Still $12.00 for members and $3.00 for members of the same family. All Autodial numbers will be deleted on that date for those in arrears.

Mail your check made out to DLARC to treasurer Dick Dech, KA3MOU at 120 McIlhaney Ave, Bath, PA 18014-1614

The Prez Sez

WELCOME 1994!

by Bob, KE3AW, President DLARC



If you feel 1993 flew by, no doubt you will see 1994 with at least the same speed. We're well into the 90s now. It might be a good time to take inventory of your goals and accomplishments of the past year. Don't rest too long on your laurels or your anatomy, however. Help insure 1994 as one the best years for you, personally, and for DLARC.

Amateur radio-wise -- how did you do in 1993? What are your New Year's Resolutions for a better year in 1994?

Here are some ideas for resolutions that you might want to take as your own. They do not require large sums of money:

Upgrade your license class. Experience new privileges.

Get that CW speed up to xx wpm.

Attend more DLARC meetings, if attendance has been lagging. Programs are great!

Upgrade your station for 160 meters (or at least 75/80 meters) for enjoyable operating during the downside of the Sunspot Cycle 22.

Take another look at the FCC Rule book: brush up on proper operating procedures.

Work on awards: DXCC, WAS, PAQSO Party (and other QSO Parties), CW Sweepstakes, etc. Set a personal goal in contesting.

Operate the DLARC club station.

Volunteer and work on a DLARC committee.

Volunteer and work on at least one DLARC regular activity you have not worked on before such as Field Day, the DLARC Picnic, communication for a race or a parade, the ARES/RACES/DLARC net, or the club's special event station.

Learn more about at least one area of amateur radio which is new or of special interest to you; packet, SSTV, SAREX, EME, etc. Design or build a new antenna.

Offer an article to the W3OK Corral.

Clean your radio shack. You might have yearlong positive effects at home from this one! You might even find that connector, book, article, QSL card or list you misplaced.

These are just some ideas for starting 1994 in amateur radio. You may have your own different personal goals. Whatever they are, may they bring you an enjoyable and fulfilling year in amateur radio. Happy New Year!, ***de Bob, KE3AW***

The Odd Phrase

Roger Barber, N9CQQ

Through the years I have collected comments from foreign operators where something was misconstrued, or lost in the translation. Thought these might bring a chuckle

- In the meantime I work and do nothing...
- My antenna is 15 meters up to the ground..
- Your frequency is off, come up a little down..
- I must QRT because now comes thunderlight..
- Once again I can spell my name...
- I can't listen to you - can you listen to me?
- My English is no good but don't worry about it...
- What state is your state in?
- I thank you for the short nice talking...
- The rig is made home...
- This blond woman is for some reason middle aged...
- His daughter is married at the moment. She is normally married in England.
- Much of the rivers are out of the rivers...
- I was built in 1920. When were you built?
- I hope to talk to you again in the next future...

from Worldradio December 1993



URGENT!!

Do you have a four wheel drive vehicle with radio in it?

Nick Tylenda, Northampton County EMA Coordinator would like to have a list of any amateurs that have this type of vehicle.

In case of an emergency such as last year's snow storm, it will be great to have the list available ahead of time.

Contact me, Clarence, W3PYF if you have this type of vehicle.

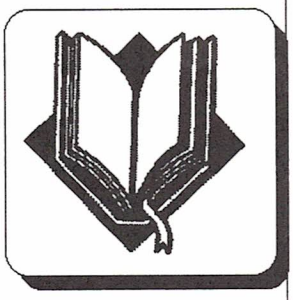
I would like to get this information as soon as possible.

73 Clarence, W3PYF, Radio Officer

Just The Minutes

by Chris, NU3L, acting Secretary

The meeting of the Delaware Lehigh Amateur Radio Club was called to order by president Bob Green, KE3AW at 7:40 PM on December 2, 1993. 100 members and guests were in attendance. W3PYF moved and KA3TEO seconded that the minutes of the November meeting be approved as printed in the December issue of the W3OK Corral. The motion carried. The treasurers report as presented by Dick Dech, KA3MOU. The balance in the club treasury is $4762.88. KA3TIU moved and N3ZAT seconded that the report be accepted as read. The motion was passed.



Jackets with the DLARC name and insignia are available for $49.95; contact Dick Dech if you are interested.

Sign up for the Christmas City special event station was solicited by Bob Green, KE3AW.

N3IGA resigned as secretary; the executive committee will appoint a new secretary. Volunteers will be appreciated.

A motion by N3ZAT seconded by W3APE was made to elect several new members into the club. The following new members were voted in unanimously:

Gregory Spak, call pending;

Mark Petrund, call pending;

Urbano Torres, N3QIA;

John Shaffer, N3QHZ

Henry Smith, NX3R

Richard Zella, KD3LW

Raymond Dennison, call pending;

Jeff Kelly, N3MFTl

Harold Uhl, WZ3Ll

Eileen Uhl, N3IZG.

VE testing will be held on Friday, December 3 in the Greystone Building at Gracedale. Team 4 will be on duty.

General classes start Jan 17. For more information see the article elsewhere in this newsletter.

Bill, K3ANS, reported on upcoming programs. See the article elsewhere in this newsletter for details. Our condolences to Bill, who broke a leg while on a hunting expedition into the wilds of northern Pennsylvania.

The DLARC Hamfest will be held on August 14, 1994 at the Career Institute of Technology. Volunteers are needed; if you would like to help contact Bill Goodman, K3ANS.

Ray, W3TDF, reports that we scored approximately 1.83 Million points in PA QSO party. The count is close to the score reported by Erie.

A very interesting program on the law and ham radio was presented by Dave Eisenberg, WA3HVR.

de Chris NU3L

International Signs of Our Times

Following are actual signs found when traveling around the world:

In a Hong Kong supermarket: For your convenience,we recommend courageous, efficient self-service.

In a Bangkok dry cleaner's: Drop your trousers here for best results.

In an East African newspaper: A new swimming pool is rapidly taking shape since the contractors have thrown in the bulk of their workers.

In a Vienna hotel: In case of fire, do your utmost to alarm the Hotel.

In a Copenhagen airline ticket office: We take your bags and send them all directions.

In a Yugoslavian hotel: The flattening of underwear with pleasure is the job of the chambermaid.

In a Czechoslovakian tourist agency: Take one of our horse-driven city tours -we guarantee no miscarriages.

In a Bangkok temple: It is forbidden to enter a women even a foreigner if dressed as a man.

In a Japanese hotel: You are invited to take advantage of the chambermaid.

In the lobby of a Moscow hotel across from a Russian Orthodox monastery: You are welcome to visit the cemetery where famous Russian and Soviet composers, artists, and writers are buried daily except Thursday.

In a Rome laundry: Ladies, leave your clothes here and spend the afternoon having a good time.

On the door of a Moscow hotel room: If this is your first visist to the USSR, you are welcome to it!

from the El Rancho Gazzette from WD5BRP

Waist Management

(Not to be confused with Waste Management)



1. Eat things that have fruit content. Examples: pineapple upside down cake bananas Foster, cherries jubilee and apple fritters.

2. Eat things that have vegetable content; examples: carrot cake, zucchini bread, potato pancakes and rhubarb pie.

3. Recognize that foods that are the same color contain the same number of calories such as spinach and green creme de menthe, cauliflower and white cake with white frosting, Harvard beets and cinnamon candy.

4. Drink all the beer you want but pour it out of the can or bottle, so the calories can escape during the transfer.

5. Drink all the wine you want but do it in conjunction with eating cheese and crackers so the calories in the wine can be absorbed by the cheese and crackers.

6. Eat only food you can't stand. If you don't like it, it must be good for you.

7. Don't exercise. Exercising makes you hungry and you'll eat more which you don't want to do.

8. When attending a party or reception, eat all the snacks and hors d'oeuvres you can so that you won't be hungry at dinner time.

9. Food eaten at a sporting event, such as buttered popcorn, ice cream, and so on doesn't count as your metabolism runs faster. This is particularly true if your team is losing.

10. Eat all the Oriental food you want, but only use one chopstick.

Anyone who thinks this was written for the benefit of our treasurer, Dick, KA3MOU, is correct.

Supplied by Dave, WD5BRP, author unknown

JOIN OR RENEW YOUR MEMBERSHIP IN THE ARRL BY CONTACTING DICK DECH, KA3MOU OUR TREASURER. DLARC BENEFITS FROM THIS

Remember ARRL is not just a Magazine Subscription

Questions!!!

HOW OBSERVANT ARE YOU??

Here's a quiz that will "open your eyes".

Supplied by Dave, WD5BRP

1. In which direction do revolving doors turn?

2. What two letters of the alphabet do not appear on a telephone dial?

3. When you walk, do your arms swing with or against the rhythm of your legs?

4. Name the file colors on the Campbell' soup label.

5. On most traffic lights, is the green on the top or the bottom?

6. In which direction do pieces travel around the Monopoly board? Clockwise or counter-clockwise?

7. What's in the "center" on the back of a $1.00 bill?

8. On the American flag, is the uppermost stripe red or white?

9. How many matches are in a typical pack?

10. In which hand does the Statue of Liberty hold her torch?

11. How many channels are on a standard VHF television dial?

12. Which side of a woman's blouse has the button holes on it -- from her view?

13. How many sides are there on a standard pencil?

14. The names of what things are "hidden" on the back of a $5.00 bill.

From the Rocky Mountain Gazette

Answers elswhere in this newsletter

In the Face of Adversity.....

By trying, we can easily learn to endure adversity--another man's, I mean. --*Mark Twain*

Diplomacy"

The art of letting someone else have your way..



Why HI

by Tom Mansfield, G3ESH

'HI HI' (why?)

Use of the plural '73s' instead of the singular '73' may merely annoy other operators whereas the frequent use of **'HI'** or **'HI HI'**, and particularly the phonetic 'aitch eye' may dangerously inflate the blood pressure of the purist. Presumably those who use **HI,** or its variants, take refuge in the lists of abbreviations published in the ARRL and RSGB operating manuals, which define **HI** as meaning laughter. When sent by CW, **HI** is meant to conjure up a picture of the sender having a good chuckle to himself. However, the use of **HI**, etc., in 'phone QSOs is rarely preceded by anything approximating humour and appears to be nothing more than a habit in the same sense that speech emphasizers, such as 'there', are tacked on to the end of a statement.

Or perhaps it is the receiver who is supposed to laugh in response to **HI;** but this suggests the receiver is either too thick to recognize a gem of humour when he hears it or is conditioned to respond to Pavlovian stimuli. It is interesting that the Concise Oxford Dictionary defines **HI** as an interjection or ejaculation_hardly a definition of laughter_whereas HO, or HO HO, is said to be an expression of surprise or derision. This says something about the Hollywood stereotype of Father Christmas waving his collecting box in the streets.Also, in the Phillips Code For Steno-Telegraphy (l879, revised 1945)_that definitive list of more than 4,000 abbreviations for professional telegraphists_**HI** is shown meaning 'high,' HO as meaning 'hold,' and LAF as meaning 'laughter.'

How then did **HI** come to mean laughter in amateur radio terminology?

Here is my theory for what it is worth:

In the original code devised by Samuel Morse, and in the subsequent American Morse Code, the letter 'O' comprised two dots with a slightly lengthened pause between them (y y) which could be mistaken for 'I' if not sent exactly. Old time telegraphers adopted HO as an abbreviations for laughter in their informal chats while retaining LAF for message traffic.

The more relaxed atmosphere of the informal exchanges led to the 'O' sounding more like 'I' at high speed, so **HI**, rather than HO, was carried over into the International Morse Code. It was subsequently picked up by early radio amateurs, of whom many were professional telegraphists, and remains to this day.

I shall be pleased to hear from anyone who can confirm or refute this theory with solid evidence_one insubstantial theory being more than enough, **aitch eye!**

from Groundwave, journal of the Wimbledon & District ARS, August 1989, via the June 1993 Morsum Magnificat (Americans interested in Morse Code history, equipment, and practice can subscribe to MM by sending 21.50 to Wise Owl Worldwide Publications, 4314 West 238th St., Torrance, CA 90505-4509.

Bad Language Sometimes Helps

by Ronald Vattimo, KC3PC

One of the things I enjoy most about monthly VE sessions is the chance to talk to new hams taking the tests, as well as some of the seasoned hams among the other VE's. John Boyce, K3JB, falls into the latter group.

Fifty years ago, in December 1943, John left The States from Maine, stopped at Iceland, then continued to Scotland by air. The pilot's mistaking the Isle of Man for Scotland should have been a warning as to what was coming.

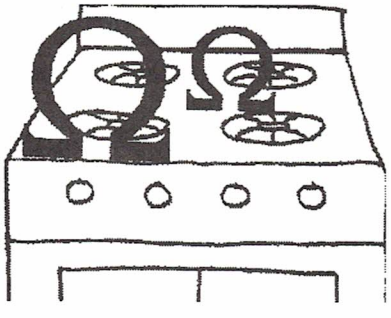
John was a radio operator aboard a B-17 bomber. Returning from a mission over Germany, his airplane took a hit. The crew nursed the plane back toward England, but the situation worsened along the way. As flames from an engine fire flickered outside, the pilot yelled at John to determine their position and radio it to a shore station quick, before they ditched. The pilot tried diving to extinguish the fire, but to no avail.

John called one of the British navigation station_called "darkies stations"_but got no answer Again and again he called, "Hello darkie, this is Kimbolton," but still received no reply.

Finally his composure slipped and John made reference to deaf "limeys" amid a string of profanity. That did the trick and John managed to send the plane's position before they ditched.

After their rescue, John met the shore station operator and demanded an explanation for the slowness to answer. The man answered, "I thought you were a German trying to get our position to bomb us. But when you began to curse me, it became obvious you were a Yank."

from the August '93 Penn Wireless Assn. (Langhorne, Pa) "X-Mitter"_Dave Heller, K3TX, Editor



'Ohm, ohm on the range..."

from the October 1993 IBM ARC of Boca Raton, Fla "WB4ONX," Neal Osborn,.N4YPB Editor

New Fine Schedule from FCC

The FCC has released its updated schedule of fines that it can charge you for violating its rules. When you hear the new numbers you will likely think twice before willfully breaking any Part 97 regulation.



We will start from the bottom of the monetary forfeiture list and work our way up to the big money. On the low end of its fine schedule, the FCC has added a new category called "assorted minor violations." Breaking any of these carries a $625 price tag. Failure to identify your station is now a $1,250 offense and using unauthorized equipment can cost you five thousand greenbacks.

But that's nothing in comparison to the next three. Running excessive power, failing to respond to an FCC communication or operating on an unauthorized frequency now carries a $10,000 price tag. Transmitting material or words that are deemed to be legally indecent will cost $12,500, being the source of malicious interference to another ham is now a $17,500 monetary forfeiture and failing to permit the FCC to inspect your station now has a hefty $18,500 price tag.

And if you really want to help reduce the national debt, just get caught sending out a false SOS. Misusing a distress or safety frequency or issuing a false distress communication is now the kind of an activity that brings with it a $20,000 fine for each transmission!

And we should also remind you that these dollar amounts are what the FCC calls "base fines" - the recommended amount for a first offense. And while the Commission does reserve the right to make downward adjustments if a violator cooperates and shows good faith, it can also raise the amount by up to 90 percent if it can prove that the violation was intentional or that it caused substantial harm. In simple terms, you could be dinged as much as $38,000 for something as simple as jamming an emergency call on a local repeater.

This is only part of a very long list of violations for which the commission can issue monetary forfeitures. Most are aimed at commercial users of the radio spectrum, but the FCC notes that any can and will be applied to personal radio users as well. Tnx Newsline.

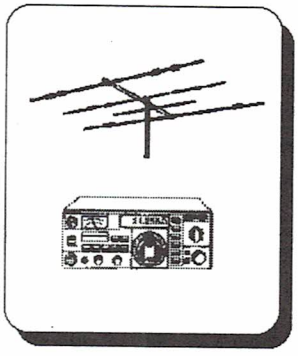
The preceding from The Westlink Report.

73 Chris KD3OA

ARRL EPA Bulletin Manager

Choosing a Feedline

by Tim Low , N6ZUC



You've purchased a new rig, bought or built the antenna of your choice, and you're ready to put it up. But you need a way to deliver the signal from the transmitter to the antenna. Selection of the proper transmission line affects the overall operation of your station and, armed with a little information, you can make the right choice. But you should be aware of some factors. First, what range of frequencies does the antenna cover? All transmission lines are not created equal. If you look at the manufacturers specifications, you'll see that each transmission line type has a certain loss, in dB per 100 feet, at some specified frequency. But as the frequency rises, loss increases. Sometimes this can be critical. Other factors to consider are the shape of the transmission line, and what its conductors and its dielectric (insulator) are made of. The physical size of the transmission line can be important.

The smaller the cable, the higher the loss and the less power it can handle. Loss in transmission line is what generates this heat. Loss also increases if you run high SWR, which happens when the cable "characteristic impedance" is greatly different than the antenna's "terminal impedance." Normally a tuner would be used on the transmitter side of the line. Of course you can use a tuner to make your transmitter "see" a good match, but that doesn't reduce the SWR in the transmission line between the tuner and the antenna.

The length of line you need is an important factor in your choice. If the run is long, you may need a higher quality, larger-diameter_which costs more. If your antenna feedpoint is to the shack, you'll probably be able to use lower-cost cable. The cost of a long run at UHF frequencies, say over a hundred feet, can get downright unreasonable. But in the HF bands you have many economical choices. Normally the cable characteristic impedance should be similar the antenna terminal impedance. But putting a 50-Ohm cable on a 75-Ohm cable doesn't produce enough SWR to worry about_at least on HF. Some antennas have much higher terminal impedances, like 200 Ohms. For these, use a transformer balun to bring the impedance down to 50 Ohms (in this case, a 4:1 balun).

Actually in many respects, especially when it comes to loss, open-wire feedlines are superior coaxial cable. You can even use 300-Ohm TV "ribbon line, if you run less than a few hundred watts. You can put a 4:1 balun under you eaves, to convert to coax for the last few feet, or use a tuner with balanced output. The beauty of open wire lines is that you can make your own. They're not at all difficult, and many articles published over the years show how. How much power do you intend to run? This is another determining factor in transmission line selection. The excess current that results from putting too much power through a line can overheat it, causing the insulation to melt_the most likely failure mode. Don't overlook connectors. The typical PL-259 connectors are fine for HF, but even for two meters consider type-N connectors. At 70 cm, you really must use type-N or similar connectors to avoid serious losses. And don't forget to weatherize your outdoor connectors; when water gets in, coax gets lossy_in a hurry.

from the July '93 Stanislaus ARC (Modesto, Calif.) "The Readout"_Bob Pinheiro, WA6ZLO, Editor

December VE Session

At this session, 19 candidates took a total of 31 elements. There were two up-grades, five new tech's, one new tech w/hf and one new novice.

The up-grades were:

George C Cook	**N3OWG**	**Advanced**
Michael J Giersson	**N3NHV**	**General**

The new licensee's are:

Dennis M Moran	**Tech w/hf**
Brandon V Izzo	**Tech**
Robert W Gersitz	**Tech**
Kenneth C Martin	**Tech**
Robert S Kratzer	**Tech**
Joseph C Riddle	**Tech**
Victor A Izzo	**Tech**
James R Winburn	**Novice**

The volunteers at this session were:

Robin Moseley, WA3T; E P Ballinger, WU3T; Ray Bilger, W3TDF; Walt Talbott, N3MHW and John Greenage, WX3C.

The next session at Gracedale will be on January 7, 1994 at 7:00 pm. Team 1 will be attending.

73 de John, WX3C, Team Liason

For Sale

Kenwood TS830S, Kenwood Antenna Tuner AT230 Kenwood Matching Speaker, an Kenwood Mc80 Microphone. All in Mint condition.. Price **$700.** complete Call Jack, WB3BAO at 215 253-0555 or 215 258-8835.

Brand New 2 Meter Solid State amplifier and receive preamp for sale. In original box.. Mirage B 2516-G rated at 160 Watts out for 25 Watts in. Bought new several weeks ago for $265.. Will sell for **$200.**

Call David WA3HVR, at 215 437 -1510 Weekdays only.

10 Commandments of Human Relations

1. Speak to people. There is nothing as nice as a cheerful word of greeting.

2. Smile at people. It takes 72 muscles to frown, only 14 to smile.

3. Call people by their name. The sweetest music to anyone's ears is the sound of his/her own name.

4. Be friendly and helpful. If you want to have friends, be a friend.

5. Be cordial. Speak and act as if everything you do were a genuine pleasure.

6. Be genuinely interested in people. You can like everybody if you try.

7. Be generous with praise and cautious with criticism.

8. Be considerate with the feelings of others. It is always appreciated.

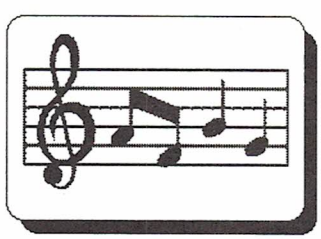
9. Be thoughtful of the opinion of others. There are three sides to a controversy -- yours, the other person's and the right one.

10. Be alert to give service. What counts most in life is what we do for others.

author unknown... From the El Rancho Gazettte, El Rancho, Co.

Country music singer also Amateur Radio Operator

Country music star Patty Loveless, is not only a chart topper, but she is also a newly licensed ham rdio operator.



Her call is KD4WUJ and she is a dedicated CW fan. She lives in Dallas., Georgia with her husband Emory Gordy Jr., W4WRO. The Kentucky-born singer, whose cousin is Loretta Lynn, was active in this years ARRL Field Day, and the group used Patty's call sign for its Novice sation.

Any body want to check the logs? Maybe you may get a QSL card.

Courtesy QST....

** CONTEST CALENDAR **

by Barry, KU3X, Contest Editor

Jan 8-9 North American CW QSO Party
ARRL RTTY Roundup
Midwinter Contest, CW (DYLC)
Minnesota Frostbite Falls Beach Party
Midwinter Contest, SSB (DYLC)

Jan 15 Winter NW QRP Sprint

Jan 15-16 North American SSB QSO Party
HA DX Contest
Hunting Lions in the Air Contest
Meet the novices and Technicians Day

Jan 22-23 ARRL VHF Sweepstakes
W1AW Qualifying Run, 10-35 WPM
CQ WW 160 Meter DX Contest

Jan 29-30 REF French Contest, CW

Jan 29-Feb 6 ARRL Novice Roundup

CONTEST TIP #20

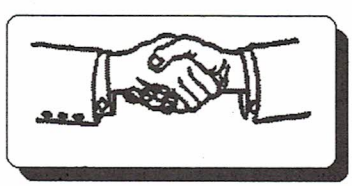
Contest entry class: There are a few different classes in some of the contests that you can use. QRP and 100 watt classes are just two of the ways. Try entering a WW DX contest on just one band. You may have a great antenna on 40, 80, or 160 meters. Try using just one of those bands. Who knows, you may come in first in your class!

de Barry KU3X

Amateur Radio, Friend Maker

by George N3OWG

Every once in a while I get a chance to stay home during the week and "play radio". I like to listen to the Old Timers on their nets and little coffee clutches. I even got invited to join in on the NARFE net once (National Association of Retired Federal Employees). And I often wondered how these long time fast and warm friendships developed.



Today my friend Randy KB2PLW from up in Trumansburg NY came over today to go hunting. Nothing real serious just a little squirrel hunting in the woods around my house. It was a good time. We talked about radio, we talked about our jobs, we talked about all the things that two guys that go hunting talk about. The weather was warm and I guess that we talked too much, because we came home squirrel-less. But we had a good time. After darkness fell here on the Blue Mountain we had some chicken noodle soup and retired to my shack to play with my 40 meter QRP rig.

Randy and I started our Ham Radio careers about the same time. We are both re-married middle aged guys with average jobs and average kids living in similar rural communities. Separated by about 200 air miles.

Oh yes I almost forgot to add in the interesting part. Randy and I had never met before. Well we had never spoken before anyway at least not verbally. See about the time we both got that 5 wpm code test passed we found out that No. Bangor, PA and Trumansburg, NY are on an almost highway for 80 meter CW! We met up with each other about 5 times before we decided to make it a weekly thing, a sked. Well now Randy is an Advanced and I'm a General, and our sked is still in place (well we moved off of the Novice SubBand).

I work a lot of Hams on a lot of frequencies using a lot of modes. But tell you the truth there is only one I really look forward to. Mondays at 8 am I know my friend will be sending my call. Calling and listening. And he knows I will be there to re-cap the week. And some times while I copy that perfect cadence of code that I have come to know so well my mind drifts..... ..... I daydream of some old gnarled fingers tapping out brass to an equally old set of ears. I wonder is this the scene of those Old-timers I listen to on my days off or a forbearance of things to come?

I was truly tired as I went to bed tonight. My wife said to me "George you look like you had a good day today." I said "Yes hon I did." And as I drifted on towards sleep I said to her "You know what Bonnie I really like these friends I've met on ham radio. As a lot they seem to be about the best folks I've ever met."

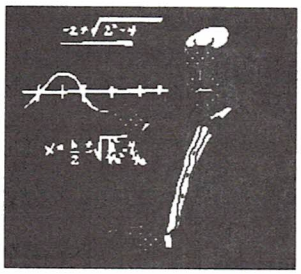
de George, N3OWG

Ima Lidd

Antenna Gain

by Van, K3CP

Ima Lidd has just asked his Elmer about antenna gain.



Antenna gain is simple to understand. The word "gain" means to increase in amount. In this discussion dB is considered to be +dB (although some antennas have a -dB rating) and is generally a desirable feature in an antenna. So it becomes a selling point for some antenna manufacturers. Some will advertise their antennas as having, for example, 6 dB of gain without stating with what it is compared.

An antenna is a passive device which means that it does not alter the signal by amplification. To accurately state antenna gain we must establish a standard reference point. A commonly used reference is the isotropic antenna (a half wave dipole is also used as a reference). An isotropic antenna is a theoretical antenna. It doesn't exist but is considered to be a point in space. This isotropic antenna radiates equally well in all directions. It's a point inside a hollow sphere whose radiation strikes the inside surface of the sphere equally. This antenna has a gain of one (unity). There is no more signal received at one spot in the sphere than in any other. All receivers in the world would receive the same strength signal from this antenna.

Now if we replace our imaginary antenna with a real one we achieve some gain. Let's look at a common half wave dipole antenna. It radiates better off its sides than off its ends. If the dipole runs north and south, stations to the west and east will receive stronger signals than stations to the north or south. So it may be said that the antenna has gain toward the west and east. Actually a dipole has about 2.14 dB gain over an isotropic reference. The gain comes from focusing (beaming) the power into a beam. We don't get this for nothing, though, as stations to the north and south get less signal.

We can improve on this focusing by using even better designs such as the rhombic, yagi, log-periodic and quad antennas. The beam of these designs is so narrow that it is necessary to rotate the antenna to fully utilize its gain in all directions. Gains of 6 to 10 dBd (dBd signifies that the gain in dB is compared to a dipole, dBi is compared to an isotropic) are common on the high frequencies and even higher gains are practical at VHF and UHF. Vertical antennas can have gain too. A 5/8 wave vertical has gain when compared to a 1/4 vertical. This gain is achieved, not by beaming the signal horizontally, but by restricting the radiation in the vertical plane. In other words there is more useful radiation at an angle to the horizon and less of it straight up.

Suppose we are running a rig that has one hundred watts into a half wave dipole and the station we are working gives us an honest S 9 signal report. We then change our antenna to a yagi having 10 dBd gain. Our signal report should now be S 9 plus 10 dB. That's equivalent to adding an amplifier and increasing our power to one kilowatt. There is the additional benefit of the same increase in the other station's signal as now received at our end.

It is a coincidence that 10 dB of gain is equal to 10 times the power. It is a logarithmic function so we cannot say 3 dB is equal to three times the power. 3 dB is actually equivalent to doubling our power. It is generally accepted that it takes a change of 6 dB to produce a change of one S unit on our S meter. So if you gave a station you are working an S 5 report and he adds a KW. amplifier, his signal strength on your meter should now be an S 6 to 7. Be careful when you give reports. They can be misleading and can cause the other amateur to make unnecessary changes.

There are other factors affecting antenna performance and they should be considered as well. These are antenna efficiency and radiation angle. The efficiency is a measure of the power radiated versus the power fed into it and can vary from approximately 90 percent for a half wave dipole to less than 10 percent for a mobile whip. The angle of radiation determines the skip distances. It is affected by height above ground and antenna design. Angles of approximately 10 to 30 degrees are generally considered good for DX operation.

Reputable dealers will state the gain of their antennas either as compared to an isotropic (dBi) or dipole (dBd). If the ad. says the antenna has 10 dB of gain without any reference, then you can't compare it to antennas in other ads. _***de Van, K3CP***

Digital Communications

by Joel K9TBD

Practical PACTOR



A year ago in this column, PACTOR (combination of Packet and AMTOR) was discussed in some technical terms. This year, as a graduation present, my brother WA9FIO, Van, gave me PACTOR software by G4BMK. This is only one alternative to getting on pactor as both Kam and AEA offer upgrades to your existing systems.

Simply put pactor is a combination of packet (AX.25) and AMTOR and has the best characteristics of both. It is becoming prevalent on the lowbands as the preferred mode of digital communication. Low band packet suffers dramatic collisions and retries and nearly is useless on the lowbands. AMTOR does not have full error protection. Pactor combines the good throughput of amtor with the error correction of packet. It is a derivative of most of the modern communication enhancements. It uses data compression techniques (Huffman encoding), retransmission of corrupted packets, and dynamic throughput adjustments dependent upon band conditions. It allows not only full upper/lower case ASCII but pure binary transfers.

The operation is extremely easy to understand. The operation will be from the perspective of my system - called BMK-MULTY, however others are similar. It works much like amtor or packet in the way you connect to one another. I listen for a CQ and when one is seen, the system captures the call sign of the caller for me and displays it on the screen. All that is required is to punch a single button to initiate the connect. To turn it over to the other fellow the sequence is one keystroke which is similar to the +? sequence of amtor. To terminate the contact another single keystroke. Logging is also included with a single keystroke. Here is a feel of a QSO on pactor.

Perhaps I called CQ (this is in FEC mode like amtor) and someone answered. The bursts coming through are longer than amtor but shorter than packet - say a few words at a time. Every burst is acknowledged by the QSO partner. Then all of a sudden things are working twice as fast. This is the automatic detection and negotiation of both ends saying that the band conditions are good and go into the experimental 200 baud mode up from 100 baud initial contact. The user doesn't do anything. If there is some QRM the two stations will automatically decide to throttle back for a higher reliability mode.

My QSO partner says hang on a minute for a sandbox run. Then all of a sudden a picture of an outhouse with a half-moon comes across my screen. This is drawn in full ANSI escape sequences such as you might see on the fancy land-line BBS systems. Since everything is captured in my log file, I can go back and extract that nice little picture for future use. While the other station is at the sandbox, I send my "brag tape" and punch a button to make this QSO permanent in my "logbook". After exchanging pleasantries for a while we decide that I will send my partner a DOS program - a little editor for instance. After a while there is a little beep and my screen says file sent.

My partner shells to DOS, executes the little editor to see if he got it ok, and types to me that it worked just fine. This is all without dropping the link. We conclude our QSO and he sends me a pretty colored graphics 73. I leave my system in auto-standby mode in case he wishes at some other time to leave me a little message - sort of like a mini-mailbox.

Here is what I like about pactor - (1) It is inexpensive compared to Clover, (2) supports upper/lower case full ANSI graphics and binary transfers, (3) more robust than amtor, (4) faster than packet, (5) the operation is easy with modern software touches, (6) it takes advantage of modern communication enhancement strategies, and (7) its taking over like a giant wave on the lowbands as the preferred mode.

PACTOR has all the attributes of fun rag-chewing, file transfers, message drops, error detection and correction, good throughput (faster than I can type), graces of modern software, state of the art communication, and operator acceptance. I believe it will be the preferred choice for lowband digital communication for some time to come. ***73 Joel, K9TBD***



DUES ARE DUE!

The new DLARC directory will be going to press with the February Issue. Important that you get your money to treasurer Dick Dech by the end of January. If not this will be your last issue of the OK Corral and all Autodial numbers issued will be removed: Make out your check to **DLARC.**

Mail your check or bring your money to Dick at the January Meeting. His address: **Richard A. Dech, Treasurer, 120 McIlhaney Avenue, Bath, PA 18014-1612.**

FCC, VECs COOPERATE IN EXAM PROBE

Licenses pulled, examiners suspended in California

The FCC has invalidated the licenses and license upgrades of 21 people after an investigation of irregularities at four volunteer examiner test sessions in southern California in June and August, 1993. The sessions involved both the ARRL and W5YI VECs and a number of volunteer examiners have had their accreditations suspended as a result.

The ARRL-VEC has suspended the accreditation of four volunteer examiners at the FCC's request, and that of three additional VEs involved in one of the test sessions after finding irregularities in the records from one of the suspect test sessions.

The FCC thanked the VECs for their help in the investigation and lauded volunteer examiners for their hard work and dedication.

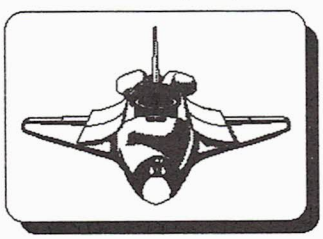
John B. Johnson, chief of the FCC's Personal Radio Branch, said:

"I'd like to commend the ARRL-VEC for working together with W5YI-VEC to uncover irregularities at several recent sessions in the Los Angeles area and suspend the VEs involved. Your action will prevent further occurrences and assure that amateur licenses are granted only to those who are truly qualified. You've also sent a strong signal that ARRL-VEC is vigilant in its oversight to keep the volunteer testing system at the highest level of integrity.

"I know," Johnson said, "it takes time and effort to scrutinize test materials and contact applicants and VEs concerning a suspect session, but it's occasionally necessary for the good of amateur radio. The volunteer testing system is a great success. Your oversight validates and supports the hard work of the many dedicated VEs who participate in testing -- as well as the hams who passed their tests and are now making the contributions to society for which amateur radio is so justly renowned."

Next SAREX STS-60

* The next shuttle SAREX flight, STS-60, is scheduled for January 27, 1994. Several members of the 6-man crew are studying for amateur licenses. Mission Specialist Sergei Krikalev is a veteran of the Russian MIR space station and has swapped his UZ3AK call sign for U5MIR. Whether or not he will be able to operate from space has still not been settled.Four U.S. and one Russian school have set schedules with STS-60. SAREX Configuration C is planned, allowing robot packet mode for most of the flight with voice operation by the crew as time permits.



The preceding from The ARRL Letter.

73 Chris KD3OA ARRL EPA Bulletin Manager

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

How Observant Are You

Answers

1. *Counter-clockwise*
2. *Q & Z*
3. *Against*
4. *Black, white, red, gold, and yellow*
5. *On the bottom*
6. *Clockwise*
7. *The word one*
8. *Red*
9. *Twenty*
10. *Right*
11. *Twelve (there's no channel 1)*
12. *Right*
13. *Six*
14. *You need a magnifying glass to see them, but the names of 26 states can be found on the back of a $5.00 bill.*

QSL Cards and How to Get Them

by Doug, N3ADL/TO5MM



This is addressed to the new QSLers trying to confirm countries for DXCC. I am in the process of sorting some 2200 incoming QSL's from my recent dxpedition to Martinique and I'd like to pass along some tips to keep your card from going into the circular file and increase your chances of getting that card on the wall. The follow are simple "facts of QSLing" and are my own experiences and observations. I also manage a dx station and I see an average of 400 cards a month come in so I'm fairly busy at this.

1.) Make certain you log correct time,date,and year of QSO.

A. Time should be recorded in UTC.If you record the time in EDT or PDT then your going to be off several hours in my log. If I'm not computerized then I may tire of searching and your card winds up in the circular file.

B. Remember that the date changes at 0000 utc. If I can't find you on a date you specified...Your card may wind up in the circular file....

C. The year is pretty easy but a bunch of folks mess it up and wind up in the circular file....

2.) Include a self addressed stamped envelope with return postage affixed to the envelope or appropriate funds to cover cost of mailing your card back to you.

A. The majority of DX stations or the managers who handle the QSL chores will not respond to a qsl request from anyone they don't need for their own dxcc awards without an SASE or SAE with return postage currency.

B. For direct response from a DX station it is best to use a IRC which stands for International Reply Coupon and is available from the post office. IRC's come in two varieties...One is an airmail IRC which costs 95 cents and covers airmail return to you and a surface irc which costs about 50 cents and cover surface (or sea) return to you that can take months to get to the destination.

C. If IRC's are not for you or the DX station is not a member of the International Postal Union then us currency in the amount needed in his country for airmail return to you. One dollars covers most foreign postage but there are exceptions that need 2 US dollars.

D.Failure to comply with the above and your cards wind up in the circular file..Sad but true! You have to remember that in 99.9 % of the time no one needs your card. You need his! Those are the very basic rules but I have a couple of suggestions to add.

3. Postcard type QSL's with 19 cents postage go in the circular file.

4. If you fold your return envelope make sure you put the fold down so the envelope is not cut in two with a letter opener.

5. Don't send several cards for different contacts on the same band/mode and expect several cards back. That's not the way the game is played.

6. If you're sending several cards for different contacts, it would be a good idea to have the post office weigh it and see if the postage for return postage is enough. It doesn't take much to go over the 1 ounce limit.

7. Be patient!! Mail sent half way around the world to a working stiff may take several months to get to return from it's destination. Overnight express mail from Martinique has taken a month to get here as it travels first to France and then makes it's way across the Atlantic. No kidding!! Hope this helps you increase your return rate and speeds you to the DXCC award.

My return rate is 96%, with the vast majority of the 4% being from South America, where frequently mail is stolen for suspected money inside. The outgoing ARRL QSL bureau is another way to qsl and they will be happy to inform you of requirements to use that route

De Doug//N3ADL//TO5MM
Frankford Radio Club.

Bring a Friend to the Next Meeting

Dallas Ham Pleads Guilty To Interference Charges

A Technician Class licensee has admitted to interfering with a restaurant's wireless intercom.

On October 27 Terry Van Sickle, WB5WXI, of Dallas, saying that between January 1992 and at least August 22, 1993, he would "broadcast his voice over the drive-thru speaker and interrupt the customer's order and willfully interfere with the authorized and licensed radio communications of the restaurant on its assigned frequency."

Van Sickle, 34 and a TV news photographer, admitted to at times being "accompanied and aided by an acquaintance," who was not identified in court papers and has not been charged.

The investigation was conducted by the Federal Bureau of Investigation on a complaint from a McDonald's eatery in suburban Dallas. Van Sickle agreed to the surrender of evidence seized by the FBI, which included radio equipment from his vehicle.

Van Sickle is scheduled for sentencing January 12, and could face a year in prison and a fine of up to $100,000.

The preceding from The ARRL Letter.

73 Chris KD3OA ARRL EPA Bulletin Manager

Radio Call For Assistance on Public Safety Frequency Gets FCC's Attention

BOYER VS. FCC:

The San Diego Union Tribune reports that a ham in that area wants his hand-held radio back after previously agreeing to surrender it to the FCC after using it to place an emergency call to the county sheriff. The FCC says that Chris Boyer, KC6UQG, did violate its regulations when he showed up on a Sheriffs Department administrative channel seeking assistance for a friend who had been injured in a cycling accident.

Boyer contends that he made a responsible decision to use the Sheriffs' frequency only after exhausting all other communications options.

Boyer was given a choice of facing prosecution in federal court for using an unauthorized radio channel or forfeiting the hand-held to the government. He chose the latter.

Many hams and most of the public believe that any citizen can use any radio on any frequency to report an emergency situation and request aid. That used to be the case, but back on October 18, 1984, the FCC modified its rules in Docket 83-991. Part 90.47(a) now reads: "Persons or organizations maintaining an eligibility in isolated areas where public communications facilities are not available and where the use of radio is the only feasible means of establishing communications with a center of population, or other point from where emergency assistance might be obtained if needed, are eligible to hold authorizations to operate radio stations for the transmission of messages only during an actual or impending emergency endangering life, health, or property for the transmission of essential communications arising from the emergency. The transmission of routine or non-emergency communications is strictly prohibited."

In other words, the FCC rules clearly prohibit the indescriminate use of radio to call for assistance unless the radio and its operator are properly licensed for a given frequency, no matter what the peril is to life or property. This appears to be the regulation that the San Diego Sheriffs Department found to use in the case of good Samaritan Chris Boyer, KC6UQG.

The FCC acknowledges that at Boyer's request the case has been reopened but the agency has declined any further comment at this time.

The preceding from The Westlink Report.

73 Chris KD3OA ARRL EPA Bulletin Manager

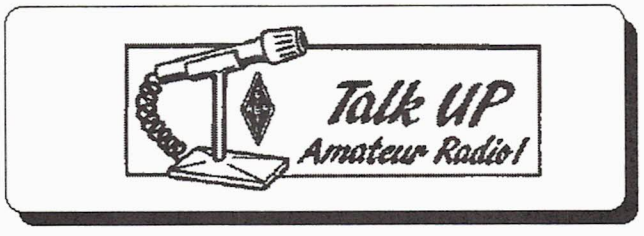
LITTLE LIMERICKS

I'd rather have fingers than toes; I'd rather have ears than a nose; And as for my hair, I'm glad that it's there. I'll be awfully sad when it goes.

A certain young lady named Hannah Was caught in a flood in Montannah As she floated away Her beau, so they say Accompanied her on the piannah.

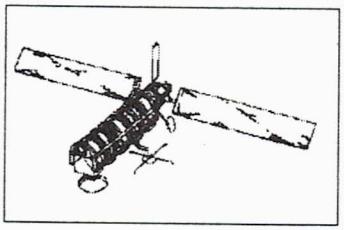
A newspaper writer named Fling, Could make copy from most anything; But the copy he wrote Of a ten-dollar note Was so good he is now in Sing Sing.

from the El Rancho Gazette, El Rancho, CO.



More MIR Contacts

by Barry , N3NVA



We left you last month with How I Connected to the Astronauts and MIR On a Shoestring Budget.

Since the article their has been a lot of activity in this area. When I started working the BIRDS solo I soon was accompanied by Bruce **KA3ONZ** . The frequency is now very busy as seen by the Packet Heard list. On the average on a good pass you will find a bout 7 to 10 others in NJ and the Pa area trying to work the MIR ship (shooting the Bird) as I call it.

As said in the last article, you can work the Space Ships on modest equipment, which is being proven time and time again lately.

The following stations have been active on 145.550 passes: **N3NVA** Barry has packet STS-56/ packet , digi to NC., and voice with MIR. **N3OUC** Mike has voice contact with STS-56/ and packet with MIR **KA3ONZ** Bruce has packet with MIR and many BUSY connects. **KA3MOU** Richard has packet via **N3IGA**`s digi, and packet digi via R0MIR to **KA3ONZ-3** and packets direct with MIR N3IGA John has packet and voice with MIR. **N3IQD** Vic has packet to MIR. **N3OLH** Bob, new comer **KA1RAH** Brad, new comer

Some of the guys have been setting their alarm clocks to try the early morning connects...

So as you can see, you to can have the excitement we all have gotten working the Birds too. You don't need an antenna that changes elevation, go for the lower passes, 15 degrees has been very good passes for me. I have used both my Yagi and home made "J pole" with great success with both. A suggestion is to monitor the receive frequency by hearing the audio while watching your packet screen in case the pass would be a voice pass. As common practice, we have not been sending out packets until we see R0MIR-1 show on the screen then start shooting at it.

Have fun and who knows, you to could be talking out of this world too. ***de Barry, N3NVA***

Twice in One Day

by John, N3IGA

It all started with Barry, N3NVA, getting a contact with the Space Shuttle. Since I usually chase Special Events, I thought about giving this a try. At one time, I had the Insta-Trak program, but I deleted it, thinking I had made a copy. Well, I didn't. So I had to wait for my buddy Vern, N5IEP, to stop in to get the program again.

Well, I finally got the program. I had been hearing Barry and Bruce, KA3ONZ, talking about Mir. So I decided to try for Mir, too. I did make a connect, but Mir went over the horizon and I lost contact before getting a chance to send a message. I decided that over the Thanksgiving vacation, I was going to get a contact.

Saturday morning, Nov.27, I got up at 5:30 am for the 5:47 pass. I got everything all set up and waited. I heard a packet burst that I recognized as Mir. I fired off a connect. I received 38 busy signals from that pass. I checked my tracking program and wrote all the times and positions for the passes for the whole day. I went upstairs, made another cup of coffee, came back down and waited. As the next pass was starting, around 1229 UTC(7:39 am), I heard packet burst. Since I still can hear with packet on, I heard a voice with an accent calling "CQ WF1F." I waited a minute, then called **"R0MIR, this is N3IGA."**

I was shocked to hear **"N3IGA, this is R0MIR.** I said good morning to ALex and he proceeded to tell me that he was calling WF1F to set up a schedule to talk to some children. I apologized to him for breaking up his attempt to reach WF1F. I then signed with him. I was really surprised that I made a voice contact. Now I was determined to make a packet connect. The next pass, I only got 4 busy signals. I was disappointed, but I noticed there had been more activity.

Well, I had to do some running before the next pass, so I got busy. I did my running around and got my son, Thomas, and I headed home. We came downstairs, and I turned the equipment on. I was telling Thomas about the voice contact. I heard Mir's packet burst and fired off a connect. I got a busy signal. Fired off another connect. This time my connect bell went off. It was at 1542 UTC(10:42 am). I sent **"S R0MIR".** It came back with **"SUBJECT?"** I answered with **"GREETINGS"**. Mir came back with **"MESSAGE:"**. I sent back **"TNX FER CONTACT...GOOD LUCK...73...JOHN, N3IGA FROM BATH, PA."** After I hit the return and sent a Control Z to end message, I then received **"Message saved as Msg #592**. I then disconnected. I was going nuts with joy, and my son was just as excited. I told him that this was one of the best special events I ever got.

So I guess the old saying, "If at first you don't succeed, try, try again," really says it. Keep trying, you'll hit the bird too!

de John, N3IGA

A Look at Amateur On-line Service

By Kelly Bruce, WD4DAT

With the increased use of home computers, many hams have purchased modems to allow them to connect to informational systems over the telephone. This month, we will look at just a few of the commercial services with dedicated amateur radio sections.

Prodigy Prodigy informational Service has been around for about four years. It. is a joint project of IBM and Sears. Prodigy has grown to be one of the largest services due to the fact of increased local number access and low cost. Most systems charge a fee per minute of use, where Prodigy's fixed monthly rate ($14.95), allows unlimited use of their system. On Prodigy, you can access amateur radio information in the "Homelife" bulletin board system. Type "Hobbies," then select "Radio Hobbies" to get into the amateur radio section. Once in, you can select from more than 300 amateur radio topics and take part in discussions. One item not available on Prodigy is downloading of programs. There is no software available in the amateur radio section to acquire. You can leave messages, catch up on the latest happenings in the ham world and meet friends from all over the world. You can select messages by subject and from what date to begin so it will pick up from where you left off. Prodigy is good for general discussions and keeping informed of what is going on, but with its lack of downloadable software, it is rated fair to good. Prodigy is very graphically oriented. It utilize its own software to access its system, and it is very colorful and easy to use. As changes are made to the software, they are automatically downloaded into your computer.

America On-Line America ON-Line is the newest of the commercial services. Its user base has increased over the last year. Initial Membership America On-Line (AOL) is free, and they provide the software to access their system. As with Prodigy, AOL is graphically oriented. It looks somewhat like Windows and is better if you have a mouse and HD to use the system. They are currently working on a Windows version. There is a dedicated Ham Radio Club on AOL, and it is supported by two sysops, one of whom is ARRL official Luck Hurder, KYIT. One of the nice things about AOL is downloading of programs and the quick access to ARRL bulletins. There are several software databases to get goodies on AOL. You can get general or program files, packet radio, SWL, bulletins, scanner files, etc. It has a very good collection of programs that is updated daily. You can leave messages as well as take part m general discussions of the day. All ARRL bulletins are placed on AOL as they are released thanks to Luck. You can get space news and scanner frequencies, as well as hundreds of programs for both the IBM-PC and the Macintosh. The cost is $6.00 per hour, on a per-minute basis_lower than most. I rate AOL high, considering the overall access cost and the content. Anyone wanting good ham information at a reasonable cost should try AOL.

Compuserve Compuserve, the granddaddy of all of the commercial systems, has the largest user base. Compuserve is also the most expensive, over $12.00 per hour. Compuserve has just about everything you could want in an information system, including a dedicated amateur radio section, "Hamnet." You have complete up and download software capability as well as a message database. The software is divided into subjects like news, scanner, SWL, packet, satellites, swap shop, etc., to name a few. They also have vendor support from several manufacturers. They provide a person you can leave messages to about your specific equipment problems or inquiries. Vendor support has AEA. MFJ, ICOM, Alinco, Drake and others. This provides you with a company representative you can deal with one-on-one with problems or for just a request for information. The programs number in the thousands and go back many years. When something is happening in the ham radio world, you usually see it quickly on Compuserve. Scott Loftesness, W3VS, is the sysop on Compuserve and provides a very good overall system for the on-line ham. The only negative point is the high cost compared to other on-line services. The content is great, but your connect bill can be high with frequent access. These systems give today's amateur access to information never before available. They offer the latest news and access to thousands of amateur radio shareware programs, from CW training to packet support. Anyone with a computer and a phone modem can open doors to further enjoy this hobby. Hundreds of BBSs around the nation provide support and specific topics on amateur radio. You can get information within minutes on every subject a ham could want. I encourage you to look at some of these services.

from Beaming South West Alabama ARS via the March '93 Magnolia Report_Hank Downey, K5QNE Editor

Political Manifesto

I'm glad that I'm American;
I'm glad that I am free;
But how I wish I were a dog,
And Congress were a tree!

author not given from the July '93 Detroit ARA "DARA Bulletin"_George Goldsotne, W8AP, Editor

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==

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--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
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