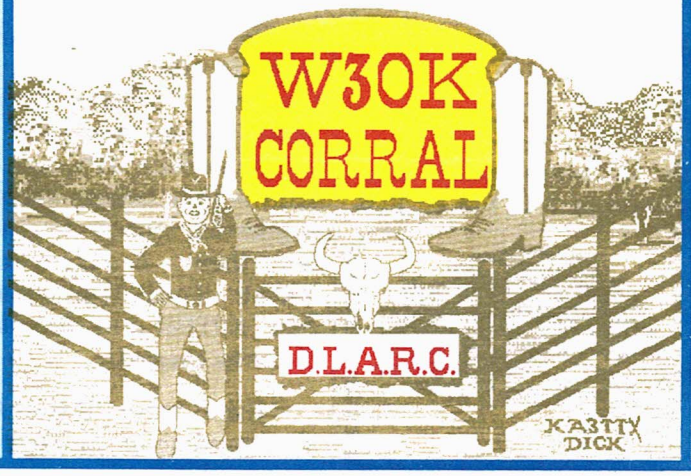
DELAWARE - LEHIGH AMATEUR RADIO CLUB, INC. W3OK

March 1994



SPECIAL SERVICE CLUB

ARRL Affiliated Club

DLARC does it again. No. 1 in PAQSO Pty



DELAWARE-LEHIGH Winner PA QSO PARTY 1993 Amateur Radio Club Inc

The QSO Party TROPHY

by Ray, W3TDF, DLARC PAQSO PTY CHAIRMAN

(The Trophy remains with DLARC for another year) I was on the phone Tue.Jan.18, for about 20 minutes, with Doug(W3HDH), of the Nittany ARC, talking about the PA QSO Party results etc. DLARC is the winner with 1,785,xxx pts. DDXA(Dauberville) had 1,148,xxx; and R.A. of Erie only had 580+K.

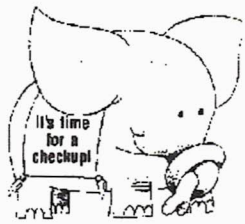
Something of interest that we discussed, as a result of a suggestion by Bob(KU3K), is a picnic, somewhere in central PA, for PA QSO Party participants, to give participants a chance to meet the others with whom they compete against. It's in the talking stage at present, but hopefully, with enough interest indicated, will become a reality.

Other tidbits that I was able to drag out of him; W3LR regained the Lehigh Co record; W3TDF lost the Bradford Co record (held for 5 years), but added Potter! During discussion of log checking, in which he thanked me for the job I do, which saves them time, he mentioned that I had won the single-op portable entry, but only by 180 pts over the runner up!! Wow! Final results will be in the mail early in Feb., at which time we will get all the nitty-gritty. ***de Ray, W3TDF***

Does your HT need a doctor?

by Greg, KB2ANG, program chairman

The March program will feature Marv DeBeque N3NVY, who owns and runs a commercial two-way radio shop in Spring City, PA. Marv will discuss with us the joys and sorrows of running a business radio shop. He'll be bring along a service monitor so that you can have your handheld checked out.



Find what its receiver sensitivity is and what are its transmiting characteristics. See if it's on frquency or not and if any minor adjustments can be made to peek your HT. So bring along your trusty friend and the owners manual and see if all is well or not. **This meeting will again be held at the Bethlehem VOTEC school in the same room that the meeting was held in February.**

Rt. 22 East or West turn South onto 191. Follow 191 for 6 tenth miles to Stop light. At Stop light turn left onto Oakland Rd.

Follow Oakland Rd for 8 tenth miles to four way stop sign. At stop sign turn Right onto Hecktown Rd. Follow Hecktown Rd. for 4 tenth miles to Chester Ave. Turn Right onto Chester Avenue. Follow Chester Avenue for 1 tenth mile, you will see Votech Parking lot.

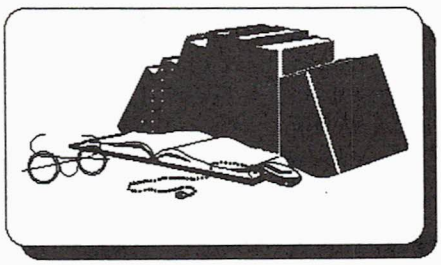
From Newburg, South on 191 to Butztown Rd. Turn left onto Butztown Rd. Follow Butztown Rd. to the four way stop sign. Stop for stop sign, proceed through stop sign. This is Hecktown Rd. you are on. From the four way stop sign you are 4 tenth mile to Votech. Turn Right onto Chester Rd. 1 Tenth mile you will see Votech parking lot. **Listen on 146.70 for directions.**

de Greg, KB2ANG

Just the Minutes

by Bob N3OLH, Secretary

The February meeting of the Delaware-Lehigh Amateur Radio Club was called to order at 7:40 PM on February 3, 1994. There were 75 members and guests in attendance. Clarence, W3PYF, moved and Marvin, KA3TEO, seconded the motion to approve the minutes of the January meeting as published in the February issue of the W3OK Corral. The motion was approved by the membership. Dick, KA3MOU, presented the Treasurer's report which showed a balance in the club treasury of $6,776.10. Tom, N3LLL moved that the Treasurer's Report be accepted as read. The motion was seconded by Marvin, KA3TEO, and was passed by the membership.



Club emblems have been ordered and are expected to be available for sale to the members at the March meeting.

Bob read three thank you notes for gifts given in memory of loved-ones of members.

The following persons were presented for membership:

Leonard Barish, N2BSC
Albert Bauernschmidt N3KPJ
Richard Dean, N3RBL
Frank Johnston, Jr., N3QZN
John Kirk, KB0CZL
Ken Martin, N3RJQ
Tim Reinhard, KD3JP
Joseph Riddle, N3RJS.

A motion to accept these new members was made by Ray, W3TDF, and seconded by Ray, N3RBK. The motion was passed and the new members were welcomed into the club.

Bob, KE3AW, reported that the Executive Committee voted against the proposal by Rich, N3NXF, that applicants for membership must be present to be accepted into membership.

Bob also reported that, because the entire membership should vote on the proposal, the Committee had tabled a motion to donate $400 to a deserving amateur radio club in Southern California. The club to be determined through consultation with the ARRL. Bob also stressed that any action on the proposal should not be considered as precedent setting. A motion was made by Marvin, KA3TEO, to make such a contribution and was seconded by Carl, KA3TEQ. The motion passed without objection.

The Board also recommended that the club continue with its educational goal by distributing more ARRL Operating Manuals to schools and libraries in areas served by our members. Members who live outside of the immediate ABE area should submit names of any schools they believe should receive the book. Members suggesting schools to receive a book will be asked to deliver them. A motion to authorize the expenditure of $400 to distribute more manuals to schools was made by Joel, K9TBD and seconded by Rich, N3NXF. The motion was carried.

Robin reported that General classes are continuing at Gracedale on Monday evenings with about 8 people in attendance. Anyone working to upgrade to General or higher is welcome to attend. Chris reported that a new series of Novice/Technician classes will start on March 14. Flyers announcing these classes are available for distribution to Radio Shacks. Joel suggested that information about the classes be put on local BBS's.

Barry, N3NVA commented briefly on his experiences in contacting satellites and encouraged other to try.

Bill, K3ANS, reminded the members that the hamfest is scheduled for August 14 and that we will again need a lot of volunteers to make the event a great success.

Rich, N3NXF, has volunteered to spearhead a Special Events Station in conjunction with the Canal Museum celebration. Details will be forth coming.

The DLARC 50 Award proposed by George, N3OWG, will be reviewed by the Executive Committee and presented to the membership at the March club meeting.

Ray, W3TDF informed the members that unofficial results of the 1993 PA QSO Party show that DLARC was the winner for the second year in a row. The 1994 event is scheduled for the 2nd weekend in October.

Members were encouraged to send articles via packet for the newsletter and Joel, K9TBD, asked for topic suggestions for his digital column.

The meeting was adjourned at 9:40 PM, after a talk by Rich, N3NXF on a project he worked on while in college, which incorporated the placing of transmitters into the body of salamanders and then tracking them with radio direction finders.

de Bob, N3OLH

HELP DLARC

Are you planning to join **ARRL** or renew your current subscription. Help our club by joining or renewing through the club..

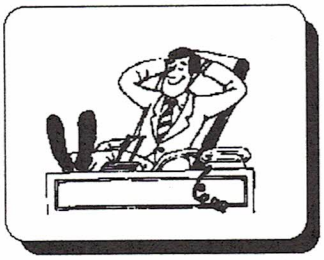
Contact Dick, KA3MOU for details.

The Prez Sez

SPRING WEATHER IS COMING... REALLY!

by Bob, KE3AW, president DLARC

The end of Cabin Fever, soon. About the same time, we'll see several DLARC activities being talked up. Are you a new member, or maybe a veteran member, who is not sure about what DLARC does, other than having the monthly meetings? Or are you wondering if you are welcomed in these activities? Let me answer the last question immediately with a big "YES." Join in the fun.



Here are just a few things to look for in the next few of months. Watch for details in upcoming newsletters or on DLARC nets. Interested? Call either the person in charge, or any member of the executive committee listed in each newsletter. Sign up for all the activities you can. You'll be helping your club, amateur radio, and the community.

DLARC at Nazareth High-Tech Day-

We need members to help set up, or stay at the table to talk up ham radio, on Saturday, March 26, at Nazareth High School. Contact any member of the executive committee.

Hugh Moore Parkway (Canal Museum) Special Event-

Rich, N3NXF, is developing this project. Contact him if you are interested in working with the details to get it set up, or working the actual operation of the special event amateur radio station.

The new DLARC 50 Award Program-

George, N3OWG, is in the process of setting out the rules for this HF operation program. He'll be presenting this at a club meeting and in the newsletter soon. If you can work HF you'll have fun with this program.

Runs/Bike-a-thons/Derriere on the Delaware-

Activities primarily of spring and summer, these are community service activities and fun to work, and very helpful. We are the eyes, ears, and communication for the events to help the activities run smoothly. It's practical experience in working on a 2 meter net, and gives service to the community groups sponsoring the activity. Watch for announcements, charge up your HT, and get ready.

Field Day-

A June event, Saturday and Sunday, this year on June 25 and 26. Come to the Field Day site and help set up the field stations, including the towers, antennas, and the emergency power supplies. Operate during the day or night. A great way to test emergency preparedness. Watch for details from Bob, KU3K. This is a big DLARC event.

PAQSO Party-

The question to be answered in October: "Can we win again?" Why not, if we all pitch in and dedicate as much operating time as possible. Look for the details and hints from Ray, W3TDF.

DLARC Hamfest-

Planning for our annual Hamfest, August 14, has already begun, but it is not too late to add your name. There are many needs in putting together an operation of this type. Whether you want to work with the committee parking, ticket sales, vendors, tailgaters, talk-in, etc., and whether it is an hour or a day you can offer, you are needed! Bill, K3ANS, is our Hamfest Chairman.

DLARC is radio active! Get involved! Enjoy!

Congratulations DLARC

Results are unofficial, but reliable sources say DLARC has again taken the 1993 PAQSO Party First Place Award. Ray, W3TDF, surely will have more details on this. Let me add thanks, Ray, for your continuing leadership and encouragement for DLARC member participation. You did what it takes, and it paid off again! Thanks also to every DLARC member who gave their time, effort, and the scores toward this latest DLARC win.

de Bob, KE3AW

Susan's Quotations

One difference between genius and stupidity is that genius has limits. *_anonymous*

"Never" tempts fate. *_anonymous*

Everybody dies. The difference is what you do till then. *_anonymous.*

Contest Calendar

by Barry, KU3X Contest Editor

Mar 5-6	ARRL DX SSB Contest
Mar 12-14	Kentucky QSO Party
	Wisconsin QSO Party
	QCWA SSB QSO Party
Mar 15	W1AW Qualifying run 10-35 WPM
Mar 15-16	CLARA & Family HF Contest
Mar 19-20	BARTG Spring RTTY Contest
	Bermuda Contest
Mar 23	W1AW Qualifying Run 10-35 WPM
Mar 26-27	CQ WW WPX Contest

CONTEST TIP #22

Packet: Using packet callouts can be a great asset in a contest or just working DX. But if you work one of those callouts, you better listen to who you just worked before you log him. Go ahead and work him but listen closely!

There are a lot of times in a CW contest stations like SK6TY are called out and the call sign is really HK6TY. The same type of mistakes happen on SSB, like VE3GH mistaken for CE3GH. Sometimes the callout is corrected within a minute or two and sometimes not. Be careful and listen closely.

de Barry , KU3X

VE Session, Gracedale, February

by John, WX3C

At the February 4 test session at gracedale, 14 candidates took a total of 24 elements. Suprisingly, several candidates took one one of the code test elements (1A, 1B or 1C).

All but one candidate went home with a new license, upgrade or CSCE.

Those who upgraded were:

Jeffry S Frantx, KA3ZIZ, Extra
Martin O Hoppe, N3RCA Advanced
Gregory S Spak, N3RCB General
Vincent A Prete, new Tech/HF
Jeffry R Fehr, Tech/HF
Urbano C Torres, N3QIA, Tech/HF
George A Morgan, N2VWL Tech/HF
Miguel R Rodriguez, new Tech
Donna L Blaszcak, new Novice

The VE's at this session were:

Robin Moseley, WA3T; Tom Dow, N3EBH; Bob Green, KE3AW;ChrisHornaman, NU3L;BillGoodman, K3ANS; Walt Talbott, N3MWH and John Greenage WX3C, team liason.

We wish to extend a warm welcome to Bill, K3ANS at his first VE session and hope he will continue on with us.The next session at Gracedale will be on March 4 at 7:00 pm. Team 3 will attend.

73 de John, WX3C, Team Liasion.

Packet Yak

PACKET RADIO:: Mode where people who have nothing to say to each other say it anyway.

TXDELAY: Waiting in line to get into the movie theater.

AXDELAY: Excuses given to your wife why you can't cut that dead tree down this weekend either.

DWAIT: D'guy who serves d'food in d'cheap restaurant.

PACKETEER: What you get from listening to VHF packet with the audio turned up too loud.

reprinted from the REMARCS newsletter, of the Mid-Atlantic Amateur Radio Club. WT3P editor.

1994 Hamfest plans



Plans for the **1994 DLARC** hamfest are already under way. The date will be **August 14**, so put that on your calendar. The location will be as last year at **Career Institute of Technology in Easton.** ARRL approval has been received. If interested in being part of the planning group, contact Bill, K3ANS, as soon as possible.

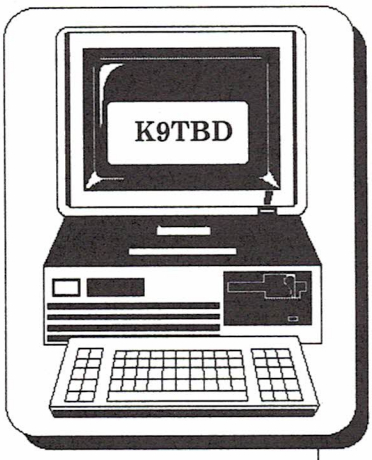


Digital Communication

Digital Errors and Their Control

by Joel, K9TBD

Many of us realize that errors occur while using digital modes of communication, but few understand how they are 'fixed'. This article is a non-mathematical description how digital error detection and correction work.



Redundancy is the primary answer: **"Nw s e tm fr al gd mn t cm t e ad u thr cntry."** This is a common English sentence for which I eliminated some of the redundancy similar to the way in which shorthand is taken - i.e. eliminate most vowels. The answer is later in this article. The point is our natural language has excess information buried in it - one primary use is to "decode" the message even in a noisy room full of party people.

With amateur radio, we indeed are in a noisy party. Lots of QRM, yet we somehow get messages through the pileups. We can take some of these mechanisms to combat voice communication and apply them to digital modes. For simplicity lets think of words as a sequence of characters (the alphabet) and these characters are represented as numbers inside a computer. e.g. a byte (8 bits) may represent one of 256 different characters. Also think of these characters as just a list of numbers - perhaps a set of columns of numbers. An accountant might cross check additions by summing rows and summing columns making a new column of sums and making a new row of sums. If the sum of the new row is the same as the sum of the new column, odds are the numbers in the original table are correct. If these additional (redundant) numbers are sent with the original table and some errors occur in transmission, the receiving station can locate (but not correct) the error by its row and column error sums.

Suppose for every 'line' of text we send to our QSO partner we add up the characters (since they are represented as numbers we can certainly do this) and send the 'line' of text and the redundant information - its sum. The receiving station knows a priori that the text will be followed by its sum (as in packet transmissions). The receiver adds up the text and compares its sum against the one that was sent. If they do not match, one of two things has happened - either some characters) in the body of the message (text) is in error or the sum itself is in error. The outcome either way indicates an error somewhere. The receiver then sends a special message back to the transmitting station to "resend last packet". Hopefully after a number of retries, the message will come in with the "check-sums" in agreement and the receiver tells the transmitter to send the next batch of information.

This is an example of an ARQ (Automatic Request) for retransmission for a corrupted piece of information. If there are many errors with noisy channels, retransmissions may outnumber original transmissions and total 'real' information passing between the stations is minimal. Another mechanism to improve throughput under adverse conditions is to add (redundancy again) more check information in the original message so that the receiving station can actually figure out where the errors occurred and correct them locally without the requirement of asking for a retransmission. This is called FEC (forward error correcting) modes of transmission.

One method of FEC is to always send the same message 'n' number of times and the receiving station takes a 'majority vote' i.e. if it receives the same thing more than 'n/2' (more than half) the time, then accept it as a valid message. This is done by W1AW and other 'broadcast' type message originators where the receiving station can not ask for a retransmission but must try to guess the proper message from that which was provided by the sender. These FEC methods are also used by satellites where the time delay to request a retransmission is prohibitive..

More efficient (but somewhat more complicated) ways for FEC exist than multiple transmissions of the original data. One way is to select only a portion of all possible characters out of our alphabet as those that are considered valid. For instance separating valid letters by two invalid ones (A b c D ...) allows single error detection and correction. If (b) was received, the closest valid member of our restricted alphabet is (A) so we choose (A) as the most likely letter that was sent. Similarly (c) is decoded as (D). If we receive (A) we presume that (A) was sent as it is part of our valid alphabet.

This last technique is called a "minimum distance or closest neighbor or maximum likelihood" error detection and correction scheme. It is used in many wired and wireless communication techniques here on amateur radio as well as celestial communication circuits. Choosing a limited but specific subset of the alphabet we can get error detection and error correction. In the limit these schemes can be much more robust and more efficient than simply sending messages with a full alphabet multiple time.

73 Joel/K9TBD

(answer: *Now is the time for all good men to come to the aid of their country)*

The latest computer viruses

Here are some computer viruses to be aware of. And remember to practice safe computing: put a write-protect tab on that diskette before you insert it into the slot.

Oprah Winfrey Virus: Your 200 MB drive suddenly shrinks to 80 MB and then expands back to 200.

AT&T Virus: Every three minutes it tells you what great service you are getting.

MCI Virus: Every three minutes it reminds you that you're paying too much for the AT&T virus.

Paul Revere Virus: This revolutionary virus doesn't horse around. It warns of impending hard-disk attack--once if by LAN, twice if by C.

Politically Correct Virus: Refers to itself not as a virus, but as an "electronic micro-organism."

Ross Perot Virus: Activates every component in your system, just before the whole thing quits.

Mario Cuomo Virus: Burps, gurgles, and talks a good line, but in the end, your computer refuses to run.

Ted Turner Virus: Colorizes your monochrome monitor.

Arnold Schwartzenegger Virus: Terminates and stays resident. You know it'll be back.

Government Economist Virus: Nothing works, but all your diagnostic software says everything is fine.

New World Order Virus: harmless, but it makes a lot of people mad just thinking about it.

Federal Bureaucrat Virus: Divides your had disk into hundreds of little units, each of which does practically nothing, but all of which claim to be the most important part of the system.

Gallup Virus: Sixty percent of the PC's infected will lose 38 percent of their data 14 percent of the time (plus or minus a 3.5 percent margin of error)

Texas Virus: Makes sure that it's bigger than any other contiguous file.

Adam and Eve Virus: Takes bytes out of your Macintosh.

Michael Jackson Virus: Hard to identify because it constantly alters its appearance. This virus won't harm your PC, but keep it away from children and struggling dentists who would rather be screenwriters.

Congressional Virus: The computer locks up, screen splits, and messages appear on each half blaming the other side for the problem.

Airline Virus: If you're i Dallas, it sends your data to Singapore.

Oedipus Virus: Your computer wants to marry its mother board.

PBS Virus: Stops whatever program is running on your PC every few minutes to ask for money.

NBC " Dateline Virus: Your computer stages a hard-drive crash to get you to pay more attention to it.

Elvis Virus: Your computer gets fat, slow, and lazy--then self destructs, only to resurface at shopping malls and service stations across rural America.

Ollie North Virus: Turns your printer into a document shredder.

Nike Virus: Just Does It.

Sears Virus: you don't get your data back unless you buy new cables, a power supply, and a set of shocks.

Jimmy Hoffa Virus: After a certain date, nobody can find it.

Congressional Virus: Runs every progrm on the disk simultaneously, but doesn't allow you to accomplish anything.

Kevorkian Virus: Enables your computer to pull its own plug.

Imeida Marcos Virus: Sings you a song (slightly off key) on boot up, then subtracts money from your Quicken account and spends it purchasing expensive shoes through Prodigy.

Star Trek Virus: Invades your system in places no virus has gone before.

Health Care Virus: Tests your system finds nothing wrong, then sends you a bill for $4,500.

George Bush Virus: Starts by stating, "Read my test.. no new files!" Proceeds to fill all free space on your hard drive with new files, then blames it on the Congressional Virus.

Bill Clinton Virus II: Invalidates all data in your computer, retroactive to the day you bought it.

Cleveland Indian Virus: Makes your 486/50 MHz machine perform like a 286/AT

Chicago Cubs Virus: Your PC makes frequent mistakes and comes in last in the reviews, but you love it anyway.

from the October '93 IBM ARC (Boca Raton, Florida) "WB4QNZ" -Neal Osborn, N4PYB Editor, and the ARNS newsletter

Novice/Tech classes

begin March 14th

Classes for the Novice & Technician licenses will start on Monday, March 14 and continue for 10 weeks. Classes will be held in the Greystone Building from 7 to 9 PM.



At each session one hour will be devoted to theory and 1 hour to code. For a complete information package please have potential students call the DLARC telephone answering machine at 820-9110. After the messages are finished they should leave their name, complete address, phone number and a brief message. ***de Chris ,NU3L***

for the Educational Committee

Antenna advice for 80 meters

From: J.P. (N3GWR)

(QUESTION From: NN2V) Subj: Antenna Advice For 80 meter operation, I am currently using a full wave horizontal loop antenna (240') fed with RG8 coax. I am thinking about extending the antenna with another full wave 80 meter loop in a figure eight pattern. Considering performance, and use on 160 and other bands with a tuner... Should I center feed in a bowtie or an 8 pattern? Will using 450 ladder or other feed lines be more effective? Anything else? I appreciate your input... 73... Scott

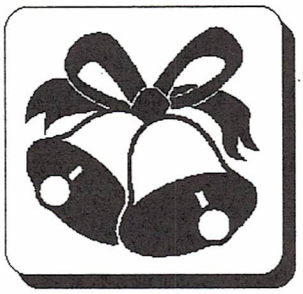
(ANSWER From N3GWR:) Replying to message from NN2V, subject Antenna Advice. In response to your question, "Should I center feed in a bowtie or an 8 pattern?", I say Bowtie. The ARRL Antenna Handbook suggests that is how you make a collinear loop antenna. That Handbook is a valuable addition to the library of anyone who builds antennas. There are antenna modeling computer programs available which could give you a better answer. Next question, "Will using 450 ladder or other feed lines be more effective?" YES. I recommend using the 450 stuff whenever anyone tries to make an antenna play on multiple bands. I has been my personal experience that ladder line is more "forgiving" with untuned antennas. These are general answers only, and are not carved in stone. I have my reasons for believing them, and I would try to expound if you wish, but I do not claim to "know-it-all". Good Luck/

73 -- J.P. -- N3GWR

NEW MEDIA SYSTEMS

The Baby Bells Grow Up

By Joe, W3JD



Last month, I gave an overview of some of the media systems that are experiencing the most rapid change. This article is the first of a regular (maybe even monthly!) series of updates describing the changes occurring in specific systems.

One of the hottest stories is the entrance of telephone companies into the video business. It was only last year that commentators were debating whether this "telco entry" would or should happen. Well, it's happening all over the place. The biggest "Baby Bell" (Bell Atlantic) is waiting on regulatory approval of its merger with the biggest cable operator, TCI--whose president was recently quoted as saying something to the effect that the phone company is better suited to provide and maintain a switched broadband (video-capable) network.

Bell Atlantic is already working on that network. They expect to have broadband service available to 1.25 million customers by 1995, and to 8.75 million by the year 2000. The first step will be a $160 million video-on-demand (VOD) system to be operational this September in 250,000 homes in Virginia and Maryland. With the VOD system, those subscribers will be able to dial up movies and other video features with as much ease as dialing a phone call. What is interesting about this first venture is the fact that video compression techniques will allow the company to use the existing twisted-pair copper system, rather than higher capacity fiber optics.

Ameritech Corp., the Baby Bell serving the Midwest, has proposed spending $29 billion over the next 15 years to build a broadband network that will serve half of its 12 million homes. Two other Bell operating companies have recently announced video service experiments: Pacific Telesis and U.S. West, in California and Denver, respectively.

de Joe, W3JD

For Sale

Kenwood TM-441A 35 watt 440 FM trancediver with TTP Microphone. 20 membory channels. Excellent mobil radio. Asking $325.00. **Kenwood TH45AT 440 HT** with three battery packs, DC adapter, two battery chargers and vinyl soft case. Still in original carton. Asking $225.00.. $525.00 for both.. Call Jim N3EYJ at 610 559-8123.

How to Solder

by Barbara C. Kermeen, formerly WA9JPN

Proper soldering techniques can save much premature failure in the field. Before soldering, all surfaces to be soldered together should be scraped with a sharp instrument, such as a scalpel, x-acto knife or razor blade, so that the surface is roughened to allow solder to adhere more easily and also so that any oxidation present on the metal will be removed. The next step is to pre-tin all surfaces. Pretinning means coating surfaces with molten solder before trying to join any two surfaces together.

Once the surfaces to be joined are pretinned, the remainder of the procedure is simple. Place the two surfaces together, and touch the joint with additional solder and the soldering iron, simultaneously. The pre-tinning will allow the new solder to flow smoothly around the joint. The type of solder used is also extremely important. Only rosin-core solder should be used, never acid core solder, which is intended primarily for plumbing use. If the leads to be soldered are properly scraped, additional flux should not be necessary, however if flux is used, the proper type must have "non-corrosive" on the container.

Reprinted with permission from Radiotelemetry Equipment & Techniques Manual) 1979, AVM Instrument Company; Livermore, CA; Barbara C. Kermeen, President and Author

This work was intended to apply to radiotelemetry equipment, but this is good advice for any soldering job. de Rich N3NXF

QSL BUREAU STATISTICS

In 1993 ARRL members sent about 7.25 Tons of QSL cards to the ARRL outgoing QSL bureau, and the bureau shipped them out. This was 2,182,000 cards for DX destinations.

The US incoming QSL bureau's volunteers sorted just over two million cards in 1993, as well.

Information on the operation of the QSL bureaus is on pages 98 and 99 of QST for January 1994.

relayed from WIAW

How to handle stress

* Jam 39 tiny marshmallows up your nose and try to sneeze them out.

* Use your Mastercard to pay your Visa.

* Pop some popcorn without putting the lid on.

* When someone says "Have a nice day", tell them you have other plans.

* Find out what a frog in a blender really looks like.

* Forget the diet center and send yourself a candygram.

* Make a list of things to do that you've already done.

* Dance naked in front of your pets.

* Put your toddler's clothes on backwards and send him off to preschool as if nothing was wrong.

* Retaliate for your tax woes by filling out your tax forms with Roman numerals.

* Tattoo "Out to Lunch" on your forehead.

* Tape pictures of your boss on watermelons and launch them from high places.

* Leaf through a National Geographic and draw underwear on the natives.

* Go shopping. Buy everything. Sweat in it. Return it the next day.

* Pay your electric bill in pennies.

* Drive to work in reverse.

* Relax by mentally reflecting on your favorite episode of "The Flintstones" during that important meeting.

* Refresh yourself: Put your tongue on a cold guardrail.

* Tell your boss to blow it out his mule and let him figure it out.

* Read the dictionary upside down and look for secret messages.

* Start a nasty rumor and see if you recognize it when it comes back to you.

* Bill your doctor for the time spent in his waiting room.

* Write a story using alphabet soup.

* Stare at people through the tines of a fork and pretend they're in jail.

* Make up a language and ask people for directions.

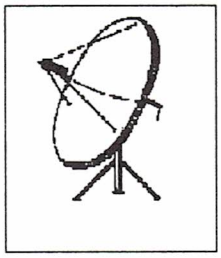
For Sale

Hunter Bandit 2000 Linear Amplifier 80 through 10 meters. Uses Pair of 3-400Z's $250. Call Bob Walsh W3YU, @ 866-0348,

Ham grateful despite blast

By David Black, KB4KCH

Alexander City, Alabama_Friends of Danny Lloyd, KB4MDD, say April 9th just wasn't Lloyd' s time to go. And Lloyd admits he's lucky to be around after what happened.



Good Friday overcast, with scattered light rain. "No bad storms in sight," Lloyd recalls. Lloyd didn't want to be late for work that morning, so he quickly adjusted the satellite dish connected to his 444.525-MHz repeater so he could retransmit audio from a Space Shuttle mission.

"I had been outside with the satellite dish, which is 15 feet from the tower, turning the metal crank to peak the Space Shuttle signal," Lloyd recalled. "Then, about five minutes after I left the repeater site, I saw a big bolt of lightning. I was transmitting on my mobile at the time, but when I unkeyed, the repeater made no courtesy tone." "The repeater has battery back-up, so something had to be broken. I went back to the repeater site and, when I opened the door to the shock, the smell of burning electronics almost overcame me

." Lloyd said the first sign of serious damage was the telephone cord between the wall jack and his repeater controller. "It looked as if someone had taken a pair of scissors and cut off both ends. It had separated from both the controller and the wall." Investigating further, Lloyd saw the extent of damage and realized the lightning bolt had scored a direct hit.

"I walked around the building to the main power source. The breaker wasn't just blown; it had disintegrated and the main power box was ten feet away, across the yard. "Thus began a day of rounding up parts," Lloyd said. Three surge supressors were destroyed. "One of them was in pieces all across the shack." The suppressor prevented damage to the repeater power supply, but Lloyd's power amplifier didn't survive. The strike's intense heat even melted the building's main incoming power cables together. Lloyd's biggest loss was his Advanced Computer Controls RC-96 controller. "It literally blew up. I took the top off and shook parts out of it." Lloyd's remote base equipment and digital voice recorder sustained heavy damage. "I'm still waiting to hear whether the two- meter and 220-MHz remote-base radios can be repaired, " he said. The repeater's transmitter and receiver were damaged too. Deciding to check his back-up batteries, When Lloyd pulled the stainless steel cover away to check the batteries, he saw that both of the 115-Amp-hour batteries had exploded. Lloyd estimated damage at $3,000.

" The strike also destroyed two television sets, two well pumps and a neighbor's satellite dish," Lloyd said. He believes the lightning bolt entered via the power line's neutral wire and jumped to the telephone circuitry. Lloyd muses on the difference five minutes made. " I don't believe I'd be here to tell the story. I can't imagine what it would sound like to have two marine batteries blow up. And those well pumps had their casings blown right off the motors." "It was just good luck that I left before it hit. "The lightning strike was low. It produced a tremendous boom, and I know why. I honestly believe it lit that place up." Despite the loss, Lloyd looked back on the strike with thankfulness. "I'm extremely grateful. Just the thought of being where the destruction occurred _" Lloyd had his repeater up again on low power just days after the strike. *from the July '93 "Magnolia Report"_Hank Downey, K5QNE, Editor and Jim Waltress, N5JPX, Publisher*

For Sale

Steve, K3DEM, has the following for sale:

New:

Palomar RX Antenna Noise Bridge	$70.00
Vaneco SWR/Field Strength Meter	10.00
Micronta SWR/Field Strength Meter	10.00
Nova 10 (8 ohm) headphones	10.00
Pioneer SE-205 Stereo headphones	20.00
Sony tape recorder	15.00
Shure BG-4 Studio mike electret condensr, runs on one 1.5 v battery for 10,000 hours	90.00

In Mint condition:

Astatic 10DA mike head	20.00
Heil Equalizer EQ-300	25.00
Vibroplex Brass Racer Iambic key	50.00
Realistic Electronic Reverb	15.00
HamTrac Message Memory keyer & Ham Iambic key	30.00
W2DU Beam Balun.	15.00

If interested in any of these items call Steve, K3DEM @ 610 863-0650.

Please Note!!!

The directory which accompanies this newsletter is not being shipped to any one but club members.

de Clarence, W3PYF, editor

IMA LIDD

Resonance

By Van K3CP

Ima Lidd asked Elmer about resonance. Elmer said that it was a very important subject as it impacted on many aspects of ham radio.



There are several definitions in the dictionary, but the one that applies more closely to electronics states that to resonate is to reinforce oscillations because the natural frequency of the device is the same as the frequency of the source.

When a piano tuner tunes a piano he strikes a tuning fork of a known frequency and then adjusts the corresponding key on the piano until it sounds the same. The two devices are said to be resonant. If he had two identical tuning forks and struck one the other would vibrate as well. The second one, being resonant, receives its energy from the sound waves generated by the first one.

When you want to tune your amplifier to the 20 meter band you adjust the tuning capacitor to resonate the tank circuit to the desired frequency. The frequencies that the tank circuit tune are limited by the values of the capacitor and inductor. This problem is overcome to some extent by using a band switch which changes the inductance. Limitations of this practice are what makes it impractical to have an amplifier that works on UHF and HF.

Ima wanted to know what was meant by a resonant antenna and why it was necessary to have an antenna that was resonant.

Elmer said that the purpose of having a resonant antenna was that like the two tuning forks example above, you wanted the antenna to receive energy from your transmitter. If your transmitter is operating in the 20 meter band its output circuit is tuned to that frequency. Now if the antenna is resonant at the same frequency, it will receive the maximum amount of power from the tank circuit.

A tank circuit contains resistance and inductive and capacitive reactance. They are lumped together in a relatively small area. An antenna also contains resistance and inductive and capacitive reactance just like a tank circuit, however they are distributed along its length. It has been established that capacitive reactance is negative and inductive reactance is positive. When the two are equal, they cancel each other leaving only resistance. Any circuit, including antennas, are resonant when their reactance is zero. Antenna resistance is a fictitious figure. It cannot be measured with an ohmmeter. It is equal to the resistance of a conventional resistor that is dissipating the same amount of power. Antenna resonance is adjusted by varying its length.

Radio waves travel at the speed of light which is 300,000,000 meters per second. One wave length therefore is equal to 300,000,000 divided by the frequency in hertz. We can change this formula to 300 divided by Mhz. We can find the wave length of 4.0 Mhz. by dividing 300 by 4.0. which equals 75 meters. A charged particle of the positive cycle of a 4.0 Mhz. wave would travel to the end of a wire that is 75 meters long. During the negative cycle the particle would return to the starting point. Remember that a radio wave is AC. That means its polarity alternates from positive to negative. These alternations represent a change in direction of current flow.

In the above example the particle travels the wire twice, down and back. This is not necessary. Once is enough. So we can reduce the length of our antenna by one half. Hence (Elmer likes to say 'hence') the term half wave antenna. The formula now becomes 150 divided Mhz. Since the United States is not on the metric system of measurements, we must convert the above units to our system. (Yards, feet or inches.) It would be nice to use a measuring rule that had centimeters and meters on it. Then we could measure 20 meters with our rule and have the length of a half wave antenna for 40 meters.

Changing to our units and making some other adjustment to compensate for the fact that our antennas are not in free space we come up with this formula for a half wave antenna:- Length (in feet) is equal to 468 divided by frequency in Mhz.

It will be a good day for all of us when we convert to the Metric system. ***de Van, K3CP***

EDITORS NOTE: *Van would like to know of any subject you would like to hear about. Why not let either Van or me know, and he will be glad to write about your needs.*

Coming attractions

by Jerry, W3BRZ and Jim, AG3Y

Considering the general direction that Amateur Radio seems to be heading and the climate that exists at the FCC, I propose the following to be used as the official examination form by the year 2001...

FCC Examination Form
For All Classes of Amateur
Radio Operation Jan 1, 2001 **Pick one or more of the answers as appropriate.**

1) A "ham" is:

A. A delectible dish served for Christmas or with eggs for breakfast.

B. An uplifting phrase found in Operations Manuals for Japanese amateur equipment, meaning,"Honorable AMerican," usually applied to the operators of said equipment.

2) A "rig" is:

A. A device used to dig wells, usually for water, but if you are lucky, perhaps for oil.

B. A device used to send electrical signals around the world.Archaic definition "used to communicate with CW, RTTY, AM or SSB" (See Glossary at bottom of page for more help) Note: Because communication has long since ceased to be an objective of Amateur Radio, we at the FCC will not consider either answer to be incorrect. This is a freebie, not a trick question.

3) An "antenna" is:

A. A wire strung between the rafters in your attic.

B. A "flagpole" with a strange black box attached to the base.

C. A large array of tubing, wire and insulating material held 50-200 feet in the air by a device called a "tower." Because of widespread ordinances, these are extremely rare, and found only in the remote corners of the desert Southwest.

4) "TVI" is:

A. Any form of interference whatsoever that is blamed on the operation of an Amateur Radio station. This can occur whether the station is on the air or not.

B. An abbreviation for the Tennessee Valley Inquisition, a fierce battle for tower rights that took place in the late 1990s.

5) "Guy" is

A. A person you meet on the street and ask about the time, as in "Hey, Guy, what time is it?"

B. A wire used to hold up a tower in winds of 25 mi/hr or less. Its use is considered optional by most amateur operators.

6) "Ground" is:

A. What a tower crashes into when the winds reach 30 mi/hr or more.

B. What keeps Japan from being line of sight from here in the good ol' US of A!

7) "Packet" is:

A. A grand experiment in digital communications that started in the early 1980s, but ground to a halt because of too much infighting among SysOps.

B. Something you put your letters into when you really want the message to get where it is supposed to go. Stamps are applied to the outside of this packet, and in a few days it arrives at its destination. Just like magic!

8) A "computer" is:

A. A device that has lured potential Amateur Radio operators away from the hobby by the thousands.

B. An enormous waste of time and energy, but, like women, "You can't live with them, ya can't live without them!"

9) A "printer" is:

A. Someone who works for the newspaper.

B. A device attached to a computer to accurately translate the tones received from the sending station into all the typos, misspellings and grammatical errors as they were originally entered by the operator.

10) "Electronics" is:

A. A mystical art that no one understands anyway, so why try to define it?

B. All of the above

C. None of the above

Congratulations! If you gave any answer to 70% of the questions above, you are qualified to become an Amateur Radio operator. Just fill out the form on the other side of this exam and send it in to the FCC offices shown at the bottom of the form. Glossary: Oh heck, it's too much trouble to define SSB, AM, CW, RTTY, etc, because these modes are absolutely obsolete anyway and no one cares.

Prepared for Amateur Radio by Jim Stanicek , in hopes that * C. None of the above * will be true by the year 2001! Happy New Year and 73 from Jim, AG3Y, Hagerstown, MD 21740 AG3Y @ W3KDC.MD.USA.NA

FUTURE SHOCK! Prepared and conceived by Jerry, W3BRZ

British radio eavesdroppers get busted

Both the San Francisco Chronicle (12/28) and Chicago Tribune (12/27) newspapers reported on a rather amusing story involving British ham radio operators. (The story originated over Reuters newswire.)

It seems British cops set up a sting operation to catch ham radio operators in Northern England who break the law by illegally using police radio transmissions. The police issued a phony broadcast about aliens landing nearby and then arrested those who showed up to see the people from outer space. The eavesdroppers ".could hardly believe their ears - aliens were invading planet Earth. Doncaster to be exact." Several people were charged with acting illegally on information contained in police broadcasts.

Another spoof broadcast said bags of money had been discovered in woods and large sums were blowing around. Within two minutes, a first car of eavesdroppers arrived in the hopes of picking up some of the booty. South Yorkshire police ordered "Operation Marconi" when they suspected that criminals were benefiting from information gleaned from the airwaves.

While it is not illegal to listen to police radio transmissions in Great Britain, it is against the law to act on any information heard when monitoring police frequencies. It should be pointed out that in England, scanner operators are also considered amateur radio operators.

The preceding from The W5YI Report.

de KD3OA ARRL EPA Bulletin Manager

THE RADIO AMATEUR CODE

***CONSIDERATE**...Never knowingly operates in such a way as to lessen the pleasure of others.
***LOYAL**...Offers loyalty, encouragement and support to other Amateurs, local clubs, and the American Radio Relay League, through which Amateur Radio in the United States is represented nationally and internationally
***PROGRESSIVE**...With knowledge abreast of science, a well-built and efficient station and operation above reproach.
***FRIENDLY**...Slow and patient operating when requested; friendly advise and counsel to the beginner; kindly assistance, cooperation and consideration for the interest of others. These are the hallmarks of the Amateur Spirit
***BALANCED**...Radio is an avocation, never interfering with duties owed to family, job, school or community.
***PATRIOTIC**...Station and skill always ready for service to country and community.

from the ARRL

State weather exercise March 24th

by Clarence, W3PYF EC/RO
Northampton County

The annual State of Pennsylvania weather exercise will be held on Thursday March 24th beginning at about 9:00 AM.

With W3OK, as the net control and observers from the State of Pennsylvania watching we want to put a good show to show our capabilities during emergencies.

Mr. Nick Tylenda, EMA director will be in charge, and we will have a call up sometime during the drill and see how many stations can be raised.

I hope to have both 2 meters and 75 meter positions actuated. In addition we may have a portable packet setup there as well.

Congratulations to Paul Ryan, N0KIA

At a meeting of the Lehigh Valley ARC, Walt Jones, KB3QW, SEC for EPA section presented Paul, N0KIA the award of Emergency Coordinator of the year in the ARRL EPA section.

Swifities

"I can't sent 'SOS' anymore; the transmitter is broken," Tom said remorsefuly.

"Hold this cable," Tom said coaxingly.

"Okay class, who knows what current times voltage is?" Tom projected powerfully.

"I tightened down all the little screws, because they were loose," Tom sang out-of -tunefully,

"This is the name I use on CW, "Tom said dashingly.

from the October '93 IBM ARC (Boca Raton, FL) ""WB4QNX" Neal Osborn, N4PYB, Editor and the ARNS.

Ignorance

The reason there is so much ignorance is that those who have it are so eager to share it.

author unknown

DELAWARE-LEHIGH AMATEUR RADIO CLUB INC.

DIRECTORY

NAMES
CALLS
ADDRESSES
TELEPHONE NUMBERS
AUTODIAL NUMBERS



February 11, 1994

CALL	AD	PHONE	LNAME	FNAME	STREET	CITY	ST	ZIP
		610-866-8242	DISBROW	ROB W.	3690 TEMPLE CT	BETHLEHEM	PA	18017-2048
		610 691-8756	DOLLAK	FRANK J.	225 MT. AIRY AVENUE	BETHLEHEM	PA	18018-4621
			JENNINGS	BRUCE K	1070 LOWER SO. MAIN ST	BANGOR	PA	18013-2836
		610 776-0339	KELLY	CHRIS M.	1632 N MAIN ST	ALLENTOWN	PA	18104-2435
		610 253-3119	MCCLARY	JOHN P	114 WILDEN DRIVE NORTH	EASTON	PA	18042-5625
		610 264-7155	RIDDLE	JOSEPH	811 THIRD ST	WHITEHALL	PA	18052-6623
		610 258-9689	SPAFFORD	WILLIAM A	536 BROAD ST PO BOX 47	TATAMY	PA	18085-0047
KY2A		908-859-3742	METZ	ARCHIE	RR#1 BOX 46	STEWARTSVILLE	NJ	08886-9705
N3ACZ	47	610 966-3002	GRANGER	ED	P.O. BOX 53	ZIONSVILLE	PA	18092-0053
KB3AEB	135	610 437-9921	DANIELS	JOHN H	1850 BRIARCLIFF TERRACE	ALLENTOWN	PA	18103-9675
KB3AEY		610 683-6369	CRUMBLISS	CHRISTOPHER	144 NOBLE STREET	KUTZTOWN	PA	19530-1716
K3AGK	123	610 868-9817	BURATTI	RALPH	RD#3 STONETHROW RD.	BETHLEHEM	PA	18015-9801
KA3AHO	183	610-837-6895	HARTMAN	JAMES H.	2825 DELPS ROAD	DANIELSVILLE	PA	18038-9668
WB4AIR		610 258-9140	CHRISTENSEN	KEN D	729 WASHINGTON STREET	EASTON	PA	18042-4339
KB3AIU		610 258-7035	SMITH	EDWARD R	912 SOUTH 24TH STREET	EASTON	PA	18042-5374
KB3AJF		610 982-5474	MARTIN	CHARLES J	PO BOX 34	UPPER BLACK EDDY	PA	18972-0034
KA3AJG		610 767-3045	DEIBERT	HARRY	ROOM 1006A ONE MASONIC DR	ELIZABETHTOWN,	PA	17027-2149
KB3ALG		UNLISTED	SCHAEFFER	RICHARD T	3216 GEORGIAN LANE	EASTON,	PA	18042-4839
KB3ALK		610 868-0957	MOSER JR.	WILLIAM	905 VERNON STREET	BETHLEHEM	PA	18015-2922
WB3AMY		717 992-3871	WALSH	ROBERT J.	RD#1 BOX 6426	STROUDSBURG	PA	18360
KB3ANE		610 681-6633	YOUNG	DONALD A	PO BOX 306	GILBERT	PA	18331-0306
KB2ANG	113	610-250-7162	PIOPPI	GREGORY	736 FERRY STREET	EASTON	PA	18042-4324
K3ANS	127	610 258-5063	GOODMAN	WILLIAM	765 YOUNG'S HILL ROAD	EASTON	PA	18042-9232
W3APE		610 588-1366	GIGLIOTTI	EDMUND J.	920 OAK STREET	BANGOR	PA	18013-2330
KA3APO		610 588-7405	GOLDEN	DENNIT D	45 SOUTH BROAD STREET	EAST BANGOR	PA	18013-2209
KD3AT	97	610 867-1819	WILLIAMS	ISHMAEL	255 WEST GREENWICH STREET	BETHLEHEM	PA	18018-2332
KE3AW	18	610 432-8286	GREEN	ROBERT A.	346 CREST DRIVE	WHITEHALL	PA	18052-7204
N3AWT	81	610 253-6571	MIDLAM	RAYMOND	2344 SILO DRIVE	EASTON	PA	18042-9334
WA3AWX		610 588-0529	JENNINGS	EARLE	201 WASHINGTON BLVD	BANGOR	PA	18013-2743
KB3AZR	166	610 264-8343	PETRUNO	MARK G	120 CHURCH STREET	CATASAQUA	PA	18032-2513
WM3B		610 868-8188	CELANI	VICTOR J.	4467 APPLE TREE LANE	BETHLEHEM	PA	18015-9001
WA3B		610 538-1714	DEILY	DONAVAN	RD 2 BOX 2088A TODD DRIVE	LEESPORT	PA	19533-9653
WW1B		610 966-2404	DOUGLAS	DANA	3800 BROOKSIDE ROAD	MACUNGIE	PA	18062-1734
W3BAL	94	610 258-3350	MARAZI	JOHN	ROUTE #1 BOX 123	EASTON	PA	18042-9213
WB3BAO		610 253-0555	NEWHARD	JACK	1203 SULLIVAN TRAIL	EASTON	PA	18042-1352
K3BCT		610 866-5582	REED	ROBERT J.	730 W. BROAD STREET	BETHLEHEM	PA	18018-5224
K3BCV	46	610 432-2805	ROYER	CHARLES	847 N. LACROSSE STREET	ALLENTOWN	PA	18103-1953
WB3BEJ	52	610 258-3942	MCCLUSKEY	FRANK	2040 LEHIGH ST., APT 421	EASTON	PA	18042-3844
N3BIB	29	610 767-1150	TANZOLA	WILLIAM	387 VALLEY HIGH COURT	WALNUTPORT	PA	18088-9655
WB3BJL	13	610 282-4459	CURTIS	JANICE	6415 NEW STREET	CENTER VALLEY	PA	18034-9576
K3BKR		610 381-2941	COWELL	BRUCE A.	P.O. BOX 516	SAYLORSBURG	PA	18353-0516
WA3BOM	35	610 868-5783	FRITZ	EARL	323 FRANKLIN STREET	BETHLEHEM	PA	18018-5337
W3BPP	104	610 253-1039	HANSEN	ARNOLD J.	3576 SOUTHWOOD DR.	EASTON	PA	18042-5851
W3BPZ		610 437-1608	DRESSELL	ROBERT C.	1039 NORTH 21ST STREET	ALLENTOWN	PA	18104-3707
WD5BRP		610 253-3775	FOSTER	DAVE W.	2120 HILLCREST DRIVE	EASTON	PA	18042-2257
WA3BRW		610-866-7207	STEININGER	ROBERT J	505 PINE TOP TRAIL	BETHLEHEM	PA	18017-1830
N2BSC		610 682-1763	BARISH	LEONARD J.	769 TOPTON ROAD	KUTZTOWN	PA	19530-8705
N2BSK		717 421-0667	WALES	M. WESLEY	212 E. BROAD STREET	E STROUDSBURG	PA	18301-2308
N3BTJ	186	610 691-5437	ZIMMERMAN	HARRY G	2536 LAFAYETTE AVENUE	BETHLEHEM,	PA	18017-4024
WX3C	181	610 767-4778	GREENAGE	JOHN	6711 PA ROUTE 873	SLATINGTON	PA	18080-3239
WG3C	173	610 797-3945	OSTAPENKO	ALEXANDER	2485 S. CHURCH STREET	ALLENTOWN	PA	18103-6786
W2CCE	25	610 967-1393	DICKINSON	BOB	BOX 297	ZIONSVILLE	PA	18092-0297
N3CDO	40	610 863-5873	VARGA	CARL	24 WATER STREET	WIND GAP	PA	18091-1341
W3CE	22	610 262-6977	WIEMANN	AL	4782 SYLVAN DRIVE	NORTHAMPTON	PA	18067-8965
W3CJI	45	610 433-4485	BROWN	RICHARD	2705 ANDREA DRIVE	ALLENTOWN	PA	18103-4601
WA3CLC		610 866-3715	KRAVITS	RICHARD	1808 SNYDER STREET	BETHLEHEM	PA	18017-5328
WA3CLD		610 838-8895	DIMMICK	RAY R.	2018 WIRTH ROAD	HELLERTOWN	PA	18055-1229
K3CP		610 691-5979	VAN HORN	WILLIAM	1454 KELCHNER ROAD	BETHLEHEM	PA	18018-1517
KC3CR	56	610 759-0294	PEISCHL	RICHARD	RD #1 161 HOFFMAN RD	WIND GAP	PA	18091-9801
N3CXP	101	610 398-1050	DANIELS	TOM	2167 SCHERER RD.	ALLENTOWN	PA	18104-9728
KB0CZL		610 967-2893	KIRK	JOHN	22 S FAIRVIEW ST	MACUNGIE	PA	18062-1609
WX4D		610-967-2020	MORGAN	JAMES V.JR	316 CHEROKEE ST.	EMMAUS	PA	18049-1711
AI7D	182	610 681-6776	PORTER	JEFFREY F	PO BOX 985	BRODHEADSVILLE	PA	18322-0985
NQ3D	163	610 253-2239	SCHOOLEY	MICHAEL J.	315 MOYERS LANE	EASTON	PA	18042-6949
WA3DAY	89	610 797-8542	STOECKEL	GERHARD	114 E. MOUNTAIN ROAD	ALLENTOWN	PA	18103-5857

K3DEM		610 868-0650	KRALICK	STEVE F	2136 LINCOLN STREET	BETHLEHEM	PA	18017-4947
KB3DJ		610 694-0583	SNYDER	JAMES P	921 BEVERLY AVE	BETHLEHEM	PA	18018-3238
WB3DJZ		610 398-9179	NAUNAS JR.	ROBERT	5021 CORNERSTONE DRIVE	WESCOSVILLE	PA	18106-9462
N3DRZ		610 965-5174	HOFFMAN	NED W.	940 WALTERS	BETHLEHEM,	PA	18017-6024
N3DSP	60	610 252-5442	MENTESANA	JOHN	2032 WASHINGTON BLVD	EASTON	PA	18042-3802
K3DVF		610 868-0127	DADAY	JOSEPH	528 8TH AVENUE	BETHLEHEM	PA	18018-5009
KE3DZ		610 395-8705	LEDDY	JOE F.	1410 S. KROCKS ROAD	WESCOSVILLE	PA	18106-9626
N3EBH	49	610-759-6116	DOW	THOMAS	1425 CHURCH RD.	WIND GAP	PA	18091-9754
W3ECT	117	610 866-4556	KAVCAK	ANDREW	1311 NORTH BLVD.	BETHLEHEM	PA	18017-4031
KA3EED	61	610 759-6306	FIELD	KEN	5632 SULLIVAN TRAIL	EASTON	PA	18042-9008
W3EFL	42	610 262-6662	SCARCIA	VAL	3625 PARK AVE	WHITEHALL	PA	18052-2821
W3EGY		610 252-6935	STOUT	KEN	3205 HIGHLAND DR.	EASTON	PA	18042-2011
WA3ENE	32	610 253-8584	LOHRMAN	LESTER	35 JEANNETTE STREET	EASTON	PA	18042-7007
N2ESQ	162	908 859-2971	BRIGLIA	TIMOTHY J	30 BRANARD STREET	PHILLIPSBURG	NJ	08865-2817
WB3ESQ		610 799-4657	SHAUB	BARRY	2738 RISING SUN ROAD	SLATINGTON	PA	18080-4048
WB3ESR		610 838-6939	STAUFFER	GILBERT J	420 BIRCH ROAD	HELLERTOWN	PA	18055-1902
W3EUD	21	610 262-2801	LUISSER	ALFRED	1830 LAUBACH AVE.	NORTHAMPTON	PA	18067-1537
N3EWV	63	610 264-1008	MUKICS	FRANK	3365 BARKLEY ROAD	WHITEHALL	PA	18052-3540
K3EX	131	610 866-4286	GEORGE	DARYL	1838 RICHMOND AVENUE	BETHLEHEM	PA	18018-3315
N3EYJ	99	610 559-8123	DITURSI	JAMES	1330 WASHINGTON ST APT C-30	EASTON	PA	18042-4774
N3EYT	112	610-974-8749	BLANKENSHIP	DAVID	1832 EASTMAN AVE.	BETHLEHEM	Pa	18018-1645
K3FEA		UNLISTED!	HILDENBRANDT	LAMAR	718 HICKORY STREET	EASTON	PA	18042-5053
N3FEA	109	610-758-9747	MEINHART	DONALD	4101 PINEL LN.	BETHLEHEM	PA	18017-4521
N3FER		717 992-4466	NACHMAN	MARK	P.O. BOX 319 ROUTE 209	BROADHEADSVILLE	PA	18322-0319
N3FGM	141	610 865-4988	COWAN	COUNCIL	1220 SHELBOURNE DRIVE	BETHLEHEM	PA	18018-2229
WA3FJG		610 395-0889	JOHNSON	ROBERT O.	343 TAMARACK DRIVE	ALLENTOWN	PA	18104-4445
KB3FN	126	610 391-1614	DEHART	LYNN W	618 INDEPENDENT ROAD	BREINIGSVILLE	PA	18031-1918
N3FNW		610 886-8849	WILLIAMS	DAVID L.	P.O. BOX 382	GLENSIDE	PA	19038-0382
N3FSR	128	610 820-6380	SOTTOLANO	DANE A.	30 SOUTH BERKS STREET	ALLENTOWN	PA	18104-6304
W3FVT		610 866-2487	BUSH	ELMER R	2036 DOGWOOD LANE	BETHLEHEM	PA	18018-1110
KA2FVT		610 868-3580	JANOSKI	FRANCIS S	1806 HAMPTON ROAD	BETHLEHEM	PA	18017-4534
WB3FXG	116	610 691-6027	MARTIN	FRANCIS T.	1527 LUZERNE STREET	BETHLEHEM	PA	18017-6222
KE3FY	182	610 681-6776	PORTER	DEBORAH	P.O. BOX 985	BROADHEADSVILLE	PA	18322
W3FYK		610 691-0963	WERNER	WILLIAM	1569 SECOND STREET	BETHLEHEM	PA	18017-6406
WB3GAW		813 763-0557	KINNAMAN JR	JOHN	2417 SOUTH EAST 32ND STREET	OKECCHOBIE	FL	34974-6710
N3GBD		610 861-5902	HAAK	ROBERT G.	422 TAYLOR STREET	BETHLEHEM	PA	18015-1766
KA3GEE	59	610 262-9685	SARNICKY	VINCENT J	18 SHORT LANE RD	NORTHAMPTON	PA	18067-9003
W3GGE	144	610 865-4682	SHAY SR.	EARL	3554 CHESTERFIELD LANE	BETHLEHEM	PA	18017-1561
W3GKC		610-253-1703	SELBY	RICHARD L.	4821 HENRY ST.	EASTON	PA	18042-4824
N3GLZ		610 435-3268	LASHER	JOHN W	2408 KRIS DRIVE	ALLENTOWN	PA	18104-1210
N3GMI	147	610 262-9500	BAIR, JR.	ALLEN	5426 OSWEGO DRIVE	BETHLEHEM	PA	18017-9120
W3GMN		610 866-4050	BIRO	ZEKE D.	738 BLAIR ROAD	BETHLEHEM	PA	18017-2404
N3GOC	155	610 253-4409	FALCONE	NICK	1157 MERION AVENUE	EASTON	PA	18042-5644
K3GOX	114	UNLISTED	LEARN	ROBERT J	41 SCOTTTIE LN UNIVERSITY HT	BETHELHEM	PA	18015-4405
N3GRE		610 867-6933	BORGO	MARC A	1620 BEST PLACE	BETHLEHEM	PA	18017-3276
N3GRH	156	610 967-5759	HINKEL	DAVID A.	4741 LINDA LANE	EMMAUS	PA	18049-9614
N3GRK	33	610 837-6357	SCHAFER	CARL R.	5609 SNYDERS CHURCH RD.	NORTHAMPTON	PA	18067-9727
KE3GV	177	610 253-4234	FRENCH	ANNE A.	3043 SWANSON STREET	EASTON	PA	18042-1967
N3GWR	167	610-987-3697	FOX	J P	47 FORGEDALE RD.	FLEETWOOD	PA	19522-9759
N3GXW	70	610-262-8415	DANIEL	NORMAN S	5440 TOWANDA DRIVE	BETHLEHEM	PA	18017-9102
W3GYJ	55	610 867-3653	STINE	RODNEY D.	BOX 400	CENTER VALLEY	PA	18034-0400
AJ3H	180	610 398-2359	BENSON	M. STOKLEY	1192 DIVOT DRV.	WESCOSVILLE	PA	18106-9620
WO4H	159	610-559-1836	KRENSAVAGE	ALAN S	404 OAK TREE LANE	EASTON	PA	18042-1260
WF3H	143	610 261-9137	PUHARIC	BOB	4461 AMMON WAY	WHITEHALL	PA	18052-1121
N3HCG	131	610-866-4286	GEORGE	RUTH ANN	1838 RICHMOND AVE.	BETHLEHEM	PA	18018-3315
N3HES		610-965-9248	PETRO	EDWARD G	4884 LIMEPORT PIKE	COOPERSBURG	PA	18036-9303
W3HFI		610 868-4671	PETERSON	LEONARD	3973 KENRICK DRV.	BETHLEHEM	PA	18017-4559
W3HFT	19	610 262-2063	LUISSER	STEVE	1756 MAIN STREET	NORTHAMPTON	PA	18067-1543
W3HHC		610 395-2180	FRITCH	PAUL W	4251 OAKLEIGH ROAD	ALLENTOWN	PA	18104-4419
N3HKX	175	610-398-3424	CHECK	DENNIS J	1218 LITTLE CREEK CIRCLE	BREINIGSVILLE	PA	18031-1233
K3HKZ		610 258-2257	ADAMS	CHARLES F.	117 APPLEWOOD DRIVE E.	EASTON	PA	18042-5803
KA3HLO		610-588-3381	CALVIERO	LEON J.	620 CALVIERO CT.	ROSETO	PA	18013-1207
N3HQE	17	610 258-2523	EVANS	DAVID C.	1324 FERRY STREET	EASTON	PA	18042-4012
N3HQF	20	UNLISTED!	NORTON	WILLIAM J	1421 GARDEN AVENUE	ALLENTOW	PA	18103-8310
WA3HVR	111	UNLISTED!	EISENBERG	DAVID	4167 WINCHESTER RD.	ALLENTOWN	PA	18104-1951
WB3HVT	41	610-759-7892	SARLEY	CHARLES L.	443 CHERRY HILL RD.	NAZARETH	PA	18064-8837

N3HWN		610-826-5509	NAIL	ROBERT J.	RR 1 BOX 1258	PALMERTON	PA	18071-9604
WA2HXQ	102	610 867-3596	GRIFFIN	ROGER	1457 CLIFTON AVE	BETHLEHEM	PA	18018-1508
N3HZB		610-826-5509	NAIL	DEBRA A.	RR 1 BOX 1258	PALMERTON	PA	18071-9604
KN3I		610 469-0131	ROCCARO	JOHN	RD1 BOX 385 BARTOLET SCHOO	SPRING CITY	PA	19475-9801
N3IBW	115	610 965-5103	PARSONS	WINFIELD L	809 BROOKFIELD CIRCLE	MACUNGIE	PA	18062-1158
W2IBX		908 859-3324	EHRHARDT	PAUL	350 RIDGE ROAD,HARMONY	PHILLIPSBURG	NJ	08865-2142
N3ICH		610 770-0147	ARMANDO	MOYA	115 RIDGE AVENUE	ALLENTOWN	PA	18101-1921
W3IDD	37	610 863-6370	D'AVANZO	JOHN	RD #1	PEN ARGYL	PA	18072-9801
W3IDZ		610 838-0694	WETZEL	GREG S.	P.O. BOX 116	COOPERSBURG	PA	18036
KB3IF		610 865-2230	HONTZ	RONALD	3915 CARTER ROAD	BETHLEHEM	PA	18017-9715
WB3IFV	64	610 759-0264	KROMER	KEN	486 E. LAWN RD.	NAZARETH	PA	18064-1209
N3IGA	43	610-837-7487	HOLMES	JOHN A.	RD3 BOX 1A	BATH	PA	18014-9086
WA3IHX		610 262-5265	PESARCIK	WILLIAM	5133 LINCOLN AVE	WHITEHALL	PA	18052-2150
KC3II		610 252-5696	HOLMES	DON	4720 WM PENN HWY	EASTON	PA	18042-4847
W3IKB		610-866-8131	KANUCK	GEORGE	1529 SPRING ST.	BETHLEHEM	PA	18018-4727
W3IKQ		610 262-3408	NEUPAUER	ALBERT	4226 MAIN STREET	WHITEHALL	PA	18052-1610
N3IPT	130	610 395-9716	SHERER	JEFF A.	1481 RED MAPLE LANE	ALLENTOWN	PA	18104-2009
N3IQD	57	610 740-0666	TROPIANO	VICTOR A.	331 N. 9TH STREET	ALLENTOWN	PA	18102-3256
W3IRX	65	610 294-9216	LARSEN	WENDELL M.	RD #1 BOX 415	UPPER BLACK EDDY	PA	18972-9610
N3ISM		610 837-0161	SHOEMAKER	BRUCE	7494 FRANKS FRIVE	BATH	PA	18014-8919
N3IUW	177	610 253-4234	FRENCH	HARLAN S.	3043 SWANSON STREET	EASTON	PA	18042-1967
WB3IWH		717 629-3840	BARROW	DEBBIE	P.O. BOX 631	STROUDSBURG	PA	18360-0631
W3IYG		610 264-3982	LISICKY	FRANCIS A.	918 RACE STREET	CATASAQUA	PA	18032-1121
N3IYX		610 759-9215	GRUVER	KENNETH E.	1419 HILDENBRANDT ROAD	WIND GAP	PA	18091-9727
N3IZG		610 432-4605	UHL	EILEEN M.	3837 ROSEWOOD LANE	WHITEHALL	PA	18052-3333
N3IZK		610 837-0439	TIETZ	WALTER F.	229 CHRISTMAS AVENUE	BATH	PA	18014-1603
NS3J	103	610 866-1406	NEWMAN JR.	WILLIAM J.	932 SULLIVAN STREET	BETHLEHEM	PA	18015-3515
W3JD	80	610 799-0337	CHUK	JOE R	4232 LAKESIDE DRIVE	COPLAY	PA	18037-2250
N3JGX		610 264-2287	VOGEL	DAVID G.	4220 AIRPORT RD.	ALLENTOWN	PA	18103-9434
KD3JP	168	610 865-2416	REINHARD	JIM R	525 N CLEWELL ST	BETHLEHEM	PA	18015-2643
K3JSQ		610 432-1730	KAPO	RON A.	912 EAST ELM STREET	ALLENTOWN	PA	18103-2630
N3JUD	111	UNLISTED!	EISENBERG	LAURIE .	4167 WINCHESTER ROAD	ALLENTOWN	PA	18104-1951
N3JVE	95	610 866-4758	FRIEDRICH	ROBERT	1249 RUSSELL AVE.	BETHLEHEM	PA	18015-4011
KA3JWE		610 252-3063	REAMER	DONALD W	265 SKYLINE DRIVE	EASTON	PA	18042-7024
KU3K	66	610 866-5879	KRATZ	ROBERT	1938 W. BROAD STREET	BETHLEHEM	PA	18018-3210
KB2KAT	51	908-454-9826	MCDONALD	PATRICK T	323 ANN ST	PHILLIPSBURG	NJ	08865-3303
N3KEC	169	610 838-9841	CHECK	BART A	214 CONSTITUION AVE	HELLERTOWN	PA	18055-2311
N0KIA		610 760-1635	RYAN	PAUL F.	6359 OPOSSUM LANE	SLATINGTON	PA	18080-9754
WA3KIF	174	610 865-9183	MILLER	MARK	5508 HALE AVE	BETHLEHEM	PA	18017-9035
WB3KIL		610 783-5683	RESNIK	NEIL	PO BOX 145	VALLEY FORGE	PA	19481-0145
N3KIS	170	610 432-4225	LINDENMUTH	MICHAEL A	2025 LIVINGSTON STREET	ALLENTOWN	PA	18104-3719
KE3KN		610 967-4238	BREISH	CHRIS	5712 NINA CIRCLE	COOPERSBURG	PA	18036-9418
N3KPJ		610 770-9221	BAUERNSCMID	ALBERT H	1163 EDWARD AVENUE	ALLENTOWN	PA	18103-5353
N3KWN	138	610 588-0585	LEONE	PHIL	203 MILLER STREET	BANGOR	PA	18013-2811
NU3L	28	610-965-4151	HORNAMAN	E. CHRIS	2225 RIVERBEND RD.	ALLENTOWN	PA	18103-9681
WZ3L		610 432-4605	UHL	HAROLD C.	3837 ROSEWOOD LANE	WHITEHALL	PA	18052-3333
N3LAI	164	610 258-9689	SPAFFORD	CHARLES S	536 BROAD STREET PO BOX 47	TATAMY	PA	18085-0047
KA3LAM	125	610 691-3597	MORGANELLI	THOMAS J.	922 WEST MARKET STREET	BETHLEHEM	PA	18018-5017
N2LAT	50	908 995-7218	STEINBERG	ROBERT N.	90 MT. JOY ROAD	MILFORD	NJ	08848-1751
N2LAU	50	908 995-7218	STEINBERG	DANNY G.	90 MT. JOY RD.	MILFORD	NJ	08848-1751
KA3LEM		610 258-9621	SCHAFFER	DALE	2627 SEIP AVENUE	EASTON	PA	18042-2440
KB2LHI		201 335-9463	WALSH	JOE M.	P. O. BOX 268	CEDAR KNOLLS	NJ	07927
N3LIY		610 588-1366	GIGLIOTTI	LOIS J	920 OAK STREET	BANGOR	PA	18013-2330
N3LKT		610 398-3761	PARKES	RICHARD N.	1535 SPRING CREEK CIRCLE	MACUNGIE	PA	18062-9442
N3LLL	139	610 395-4327	FROBASE	THOMAS L	1541 CHERRY LANE	MACUNGIE	PA	18062-9424
W3LPB	68	610 867-2847	TURZANSKI	MERL J.	1998 COLLINGSWOOD DR	BETHLEHEM	PA	18018-1511
KA3LPG	69	610 770-0598	MOYER	NOEL R	2905 PENNSYVANIA ST	ALLENTOWN,	PA	18104-2819
W3LPM			BRANCH	GEORGE	2478 ELLENDALE DRIVE	LANCASTER	PA	17602-1443
K3LPR	12	610 866-6277	RAYMOND	RONALD	225 E. GOEPP STREET	BETHLEHEM	PA	18018-4134
N3LQV		610 967-4238	BREISH	JAY J.	5712 NINA CIRCLE	COOPERSBURG	PA	18036-9418
W3LR	13	610 282-4459	CURTIS	DON	6415 NEW STREET	CENTER VALLEY	PA	18034-9576
KA3LSI	187	610 759-6050	PFLUGLER	WILLIAM L.	537 MOORESTOWN DR.	BATH	PA	18014-9194
KB2LSV		908 995-7218	STEINBERG	MICHAEL B.	90 MT. JOY ROAD	MILFORD	NJ	08848-1751
N3LVA		610 791-1319	MCGEE	HAROLD	1328 PEARL AVENUE	ALLENTOWN	PA	18103-8434
KD3LW		610 437-7949	ZELLA	RICHARD A	217 NORTH 13TH STREET	ALLENTOWN,	PA	18012-3776
N3LWY		610 253-2804	FRANKENFIELD	DAVID J.	1014 W. NESQUEHONING STREE	EASTON,	PA	18042-6335

N3LXF		610 837-1782	OSBORNE	CHARLES J	8220 AIRPORT RODAD LOT#3	NORTHAMPTON	PA	18067-9733
K3LZ		610 252-1587	ZUCKERMAN	LAWRENCE	P.O. BOX 828 GAFFNEY HILL RD.	EASTON	PA	18044-0828
KO3M		717 386-2797	KEISER	ANNE M.	229 KEISER LN.	MAHONING TWP	PA	18235-9552
WU3M	124	610 759-8125	SUNFLOWER	BEORN W.	2371 W. BEST ROAD	BATH	PA	18014-9602
N3MAW		908 722-0908	METZLER	ALLAN S	PO BOX 1183	EASTON	PA	18044-1183
N3MDV		610 437-2097	GULDIN	JOHN C	2112 TILGHMAN STREET	ALLENTOWN	PA	18104
N3MFT		610 776-0339	KELLY	JEFFERY J.	1632 NORTH MAIN STREET	ALLENTOWN,	PA	18104
K3MGP	88	610-866-3766	HEACOCK	EARL	3941 NORFOLK DRIVE	BETHLEHEM	PA	18017-4535
N3MHW		610 760-1732	TALBOTT	WALTER R	3903 CEDAR DRIVE	WALNUTPORT	PA	18088-9533
W3MIU		610-966-5865	WETZEL	CHARLES O	51 SYCAMORE ST.	MACUNGIE	PA	18062-1515
N2MIX		610 252-3873	BASSETT III	RICHARD M	109 NORTH THIRD STREET APT2	EASTON,	PA	18042-1882
N3MKZ	151	717 992-6890	BRUE	JOSEPH	BOX 33	BROADHEADSVILLE	PA	18322-0033
N3MLA		610 681-4987	BOJKO	WALTER	RD2 BOX 209	KUNKELTOWN,	PA	18058
KA3MLX		610 757-5341	MACRIPO	PETER D.	527 WALKER AVE.	PENNDEL	PA	19047-5125
KA3MND	92	610 262-4919	LETTIE	DARYL D.	60 SO. THIRD STREET	COPLAY	PA	18037-1317
KA3MOB	11	610 252-1237	FAUERBACH	CURTIS A.	4200 WILLIAM PENN HWY.	EASTON	PA	18042-5065
KA3MOU	26	610 837-1585	DECH	RICHARD A.	120 MCILHANEY AVENUE	BATH	PA	18014-1612
KA3MQI			KENNA	FRANK J.	7801 S.E. SHENANDOAH DRIVE	HOPE SOUND	FL	33455-5920
N3MSK		610 252-6193	KITA	EDWARD F.	530 PACKER STREET	EASTON,	PA	18042-6337
KA3MTY	82	610-433-8096	ELINE	PAUL J.	1912 HANOVER AVE.	ALLENTOWN	PA	18103-8140
N3MUP	152	610 776-1081	RODRIGUEZ	LUIS J	129 SOUTH HALL STREET	ALLENTOWN	PA	18102-2205
WA3MVQ		610 866-2683	SCHROETER	GLADE G	1852 LIVINGSTON STREET	BETHLEHEM	PA	18017-6221
N2MWQ		908 454-1497	PAULUS	JOHN J.	333 LIBERTY BLVD.	PHILLIPSBURG	NJ	08865-3806
N3MXG		717 386-3216	LOUGHMAN	CHRIS P.	BOX 87 RD 3	TAMAQUA	PA	18252
N3MYY		610 683-6369	CRUMBLISS	RONALD O.	144 NOBLE STREET	KUTZTOWN,	PA	19530-1716
WA3MZO	158	610 865-1704	HANCIK	ROBERT	645 LEIBERT ST. APT 305	BETHLEHEM	PA	18018-5418
WT1N		207 465-3212	FINKEL	JEFFERY	RT #1 POND ROAD BOX 4690	OAKLAND	ME	04963
KY3N		610-845-8431	KLINE	WAYNE L.	RD#1 BOX 589	ALBURTIS	PA	18011-9743
N3NBL	154	610 432-8089	HILLIARD	MARK W	523 N. LAW STREET	ALLENTOWN	PA	18102-2961
N3NDY		717 588-3238	MASURE	RANDY M	1064 PINE RIDGE	BUSHKILL	PA	18324-9779
N3NEJ		610 865-5135	CHAFFIER	MICHAEL	259 VALLEY PARK SOUTH	BETHLEHEM,	PA	18018-1352
N3NEK		610 433-3626	NICOL	ROBERT	232 N. 16TH STREET APT #2	ALLENTOWN	PA	18102-3612
N3NET	146	610 264-8621	GILSON	ROBERT S	312 EDWARD LANE	CATASAQUA	PA	18032-1339
KA3NGH		610 264-5631	GOOD	ANTHONY E	208 2ND STREET APT 3	CATASAUQUA	PA	18032
N3NGL		610 395-0021	MAURER	CARL M.	2255 NEW STREET	OREFIELD	PA	18069-9546
KA3NGW		610 264-7073	RUFE	CARY R.	901 BATH AVENUE	CATASAQUA	PA	18032-1218
KD3NH		610 797-5121	ROMIG	EDWARD R.	786 BENTON STREET	ALLENTOWN	PA	18103-5702
N3NJE		610 759-0495	SEAROCK	JASON F	46 SOUTH WHITFIELD STREET	NAZARETH	PA	18064-2147
N3NJF		610 966-4152	SNYDER	WALTER M	5215 CHESTNUT HILL ROAD	CENTER VALLEY	PA	18034-9756
KA3NJR	66	610 866-5879	POPE	JANICE	1938 W. BROAD STREET	BETHLEHEM	PA	18018-3210
N3NLA		610 252-1985	DUDISH	ANDY	3020 WINDSOR STREET	EASTON	PA	18042-1955
N3NLM		610 433-6899	DAUGHERTY	DAVID R	441 NORTH OTT ST.	ALLENTOWN	PA	18104-4834
WB7NNC	110	610 252-5261	KILBANKS	ROBERT	47 N. 10TH STREET	EASTON	PA	18042-3307
N3NNH		610 759-3284	YOUNG	ANDREW R	519 CLEARFIELD ROAD	NAZARETH	PA	18064-9491
N3NNI	132	610 258-6644	CUMMINGS	DARREL L	218 TRISHA STREET	TATAMY	PA	18085-0116
WA3NPB		610-866-7207	STEININGER	MARGE L	505 PINE TOP TRAIL	BETHLEHEM	PA	18017-1830
N3NRB		610 867-1472	KLAUS	ROBERT T	2314 CATASAQUA RD N-6	BETHLEHEM,	PA	18018-1057
KA3NRJ	185	610-346-7781	ELOVSKI	WILLIAM J	1337 STATE ROAD	COOPERSBURG	PA	18036-9629
WA3NSX	148	610 366-1442	ADAMS	LEE A	4055 WALNUT STREET	ALLENTOWN	PA	18104-5829
N3NUE	48	610 346-6127	DANCEY	JOHN J.	2251 ROUTE 212	COOPERSBURG,	PA	18036-9660
N3NVA	58	610 863-7204	VOGT	BARRY A	313 HELLER AVENUE	PEN ARGYL	PA	18072-1013
K3NWM		610 398-7497	DONIO	MICHAEL	5644 WOOD LANE	WESCOSVILLE	PA	18106-9548
N3NXF	160	610 759-8654	SHEVALIER	RICHARD W	1249 CHURCH ROAD	PEN ARGYL	PA	18072-9751
N3NXS		610 481-9489	NAGY	JEFFERY J	1133 DYLAN DRIVE	ALLENTOWN	PA	18104-3360
K3NZ	16	610 799-4044	ZOLTACK	NORMAN	4333 LOCUST DRIVE	SCHNECKSVILLE	PA	18078-9342
N3OBR	93	610 437-4783	HUNT	KENNETH	1445 TIGHLMAN STREET	ALLENTOWN	PA	18102-2139
N3OBS		610 740-6275	WOLFE	MARK A	P0 BOX 246	BATH	PA	18014-0246
N3ODB		610 252-6193	KITA	ELAINE A	530 PACKER STREET	EASTON	PA	18042-6337
KA3ODF	44	UNLISTED!	SCHAFFER	ROBERT M.	604 E. LYNNWOOD STREET	ALLENTOWN	PA	18103-5220
KA3ODI		610 679-8935	MCCRAE JR.	ALBERT	4045 CAMPBELL ROAD	PENNSBURG	PA	18073-9706
KA3ODM	134	610 588-0529	JENNINGS	RUTH	201 WASHINGTON BLVD	BANGOR	PA	18013-2743
KA3ODN		610 863-9028	JENNINGS	RANDY	BOX 116	BANGOR	PA	18013-0116
KA3ODO		610 863-9028	JENNINGS	MARY	BOX 116	BANGOR	PA	18013-0116
KA3OEG	34	610 253-0729	BROAD	BILL	742 BROAD ST.	TATAMY	PA	18085-0193
KA3OIL		610 253-2194	SCHMITT	WILLIAM C.	3566 BETHMAN ROAD	EASTON	PA	18042-3023
WA3OIO		610 759-2677	CORRELL	JOHN	650 CREAMERY RD.	NAZARETH	PA	18064-8822

N3OJT	189	610 250-8807	COLEMAN	TERRY L	707 SEITZ STREET	EASTON	PA	18042-6545
N3OLH	118	610 868-8200	GERST	ROBERT	900 WEDGEWOOD ROAD	BETHLEHEM	PA	18017-3039
KA3OLN	53	610 867-2393	CARBALLO	RAMO'N	1624 E. 8TH STREET	BETHLEHEM	PA	18015-2216
KA3OLO	67	610 865-5772	RIVERA	EDDIE	2514 TENTH AVENUE	BETHLEHEM	PA	18017-4332
KA3ONZ	76	610-682-4512	HULL	BRUCE E	R.D. #1 BOX 836	ALBURTIS	PA	18011-9801
K3OO	71	610 863-4971	SAEGER	RICK	1330 JACOBSBURG RD.	WIND GAP	PA	18091-9716
KA3OPX		717 454-2700	YAKUBISIN	DANIEL	700 GARFIELD ST.	HAZLETON	PA	18201-3456
N2OTI		908 454-0102	BABCOCK	ROBERT G	903 PENNSYLVANIA AVENUE	PHILLIPSBURG,	NJ	08865-4041
N3OUC	136	610 966-3685	STANTON	MICHAEL J.	5580 N. WALNUT STREET	MACUNGIE	PA	18062-1323
N3OWE		610 799-4780	LESS JR.	VICTOR H.	4418 ROUTE 309	SCHNECKSVILLE	PA	18078-2515
N3OWG	119	610 588-4729	COOK	GEORGE C	RD #3 BOX 3385 A	BANGOR	PA	18013
N3OWH	121	610 434-4006	BRADER	BRIAN	505 S. BRADFORD STREET	ALLENTOWN	PA	18103-2713
NC3P	24	610 865-6234	FAHS	BILL	3976 KENRICK DRIVE	BETHLEHEM	PA	18017-4557
WB2P		914 897-4175	KAZMAKITES	TONY	179 WINDSOR ROAD	FISHKILL	NY	12524-3407
N3PDR		610 285-2421	WEBER	JEFFREY L	8507 MOHR LANE	FOGELSVILLE	PA	18051-1924
N3POE	138	610 588-9585	LEONE	DEBRA A	203 MILLER STREET	BANGOR	PA	18013-2811
N3POZ		610 865-6514	NICHOLS	TRACEY E	2014 13TH STREET	BETHLEHEM	PA	18017-5836
W3PTG			HAAK	GUSTAV	32 CLOVER LANE	MALVERN	PA	19355-2867
KA0PUF	171	610-398-8686	VASSILAR0S	DANIEL L	5582 KART DR.	ALLENTOWN	PA	18106-9501
KB2PUQ		908 859-4995	BALL	IRVWIN W	99 WASHINGTON STREET	PHILLIPSBURG	NJ	08865-2359
N3PUW	96	610 264-9899	HAVASSY	JAMES A	PO BOX 9A	ALLENTOWN,	PA	18105-0009
N3PWS	54	610 433-2373	LAGLER	WILLIAM E	275 EAST FAIRVIEW STREET	ALLENTOWN	PA	18103-2735
W3PYF	10	610 252-2109	SNYDER	CLARENCE	717 PORTER STREET	EASTON	PA	18042-1548
N3PYU	105	610 759-3790	EMERY	ANTHONY S	6 WOODVIEW COURT	BATH	PA	18014-2108
KA3PZI	137	610 691-8273	WEIERBACH	JUDY	1286 SEIDERSVILLE ROAD	BETHLEHEM	PA	18015-9301
N3Q3K		610 863-5825	STACKHOUSE	NEIL B	133 ROOSEVERT STREET	WIND GAP	PA	18091-1016
N3QHZ		610 799-5406	SHAFFER	JOHN	5236 GRANGE DRIVE	SCHNECKSVILLE	PA	18078
N3QIA		610 435-2254	TORRES	URBANO C.	514 GORDON STREET	ALLENTOWN	PA	18102-3307
N3QIL		610 865-0938	DUFF	JAMES A	3308 DELONG AVE	BETHLEHEM	PA	18017-2842
N3QLU		610 434-3235	LANSHE	FREDERICK	630 WASHINGTON STREET	ALLENTOWN	PA	18102-1606
N1QNV		802 258-2520	SCHNEIDER	DAVID E.	35 WILLIAM STREET	BRATTLEBORO	VT	05301
KC3QO	120	610 759-2366	SNYDER	TIM	223 SOUTH WHITFIELD ST	NAZARETH	PA	18064-2832
KA3QOM		610 797-4388	LETTICH	JAMES F.	1328 E. EMMAUS AVE	ALLENTOWN	PA	18103-5934
N3QSR	85	610 866-9162	YANKOVITCH	ROBERT C	750 E 4TH ST	BETHLEHEM	PA	18015-1838
KA3QWO		610 767-7801	EAST	TIMOTHY H.	5639 SELL ROAD	SCHNECKSVILLE	PA	18078-9643
W3QX	140	610 868-1908	MILLER	ROBERT R.	929 SIXTH AVENUE	BETHLEHEM	PA	18018-3705
N3QZN		717 839-3007	JOHNSTON JR	FRANK D	424 STERLING RD	TOBYHANNA	PA	18466-3906
N3QZS		610 588-2339	WOOF	JAMES A	516 MARKET ST	BANGOR	PA	18013-1802
N3QZT		610 863-8507	KELLER	JEFFREY L	259 NORTH BROADWAY ST	WIND GAP	PA	18091-1212
NQ9R		317-578-0689	CIRILLO	JOSEPH A.	7505 CAPE CODE CIRCLE	INDIANAPOLIS	IN	46250-1841
NX3R		610 252-3387	SMITH	HENRY F.	RD 4 BOX 4225	BANGOR	PA	18013-9227
KA1RAH		610 559-0713	POMEROY	BRAD S.	LAFAYETTE HILLS APT 8B	EASTON,	PA	18042-1163
KA3RBH	142	UNLISTED	BIGG JR.	WILLIAM M.	1713 COTTAGE AVE	BETHLEHEM	Pa	18018-4813
N3RBK		610 691-1810	DENNISON	RAYMOND S	349 EAST MACADA ROAD	BETHLEHEM	PA	18017-2523
N3RBL		610 498-3142	DEAN	RICHARD L	RD2 BOX 2204B	BANGOR	PA	18013
N3RCA		610 264-3466	HOPPE	MARTIN O	591 CEDAR HILL DRIVE	ALLENTOWN	PA	18103-1021
N3RCB		610 770-0448	SPAK	GREGORY S.	214 SOUTH SAINT LUCAS ST.	ALLENTOWN	PA	18104-6435
N3RDI		610 966-5500	BUCHIN	MARGARET	21 EAST MAIN STREET	MACUNGIE	PA	18062-1308
KB3RI	36	610 253-7710	MULROONEY	ROBERT	2402 BUTLER ST.	EASTON	PA	18042-5303
N3RJQ		610 866-5143	MARTIN	KEN C	201 HILLMOND ST APT B-2	BETHLEHEM	PA	18017-4748
K3RL		610 282-4072	MOSKO	MIKE	415 CARRIAGE DRIVE	COOPERSBURG	PA	18036-1334
N2ROD		914 476-2121	SALOTTO	PAT C.	25 LEROY PLACE	YONKERS	NY	10705-4533
W0RSJ		610-252-3956	MURPHY	WILLIAM T	338 PAXINOSA ROAD W.	EASTON	PA	18042-1322
KA2RTI		UNLISTED	CRAMER	THOMAS G.	153 LIBERTY BLVD	PHILLIPSBURG	NJ	08865-3834
KA2RUA		610 264-3980	SMITH	RICHARD	1331 LINCOLN STREET	N. CATASAQUA	PA	18032-2118
W3RYE			NEWMAN	WILLIAM F.	GRACEDALE (NORTHAMPTON C	NAZARETH	PA	18064-9213
WB2SAW	108	610 759-7673	SERFAS	DAVID	139 W. BEIL AVE	NAZARETH	PA	18064-9526
KA3SCS	158	610 865-1704	HANCIK	SHERRY	645 LEIBERT STREET, APT 305	BETHLEHEM	PA	18018-5418
WD8SCX		610 262-3785	STAHL	JOHN H	3690 CANELLA DRIVE	NORTHAMPTON	PA	18067-9266
KA3SIT	145	610 437-7089	SARLEY	CHRIS	718 W. CEDAR STREET	ALLENTOWN	PA	18102-1541
W2SPK		610 861-0623	BARTOLACCI	RIVO	1649 LOIS LANE	BETHLEHEM	PA	18018-1742
KD3SQ		610-866-4714	DRAKE	CHARLES L.	3834 FAIRFAX RD.	BETHLEHEM	PA	18017-7538
WA3SUM		610 253-1310	ROCCARO	LEONARD	130 W MILTON STREET	EASTON	PA	18042-6687
KA3SWN		610 974-9731	BUSS	EVELYN	1142 NORTH NEW STREET	BETHLEHEM	PA	18018-2718
WU3T		610 266-9007	BALLINGER	E. P.	BOX 224	WHITEHALL	PA	18052-0224
WA3T	27	610 820-0944	MOSELEY	ROBIN C.	1371 HIGHLAND COURT	ALLENTOWN	PA	18103-6025

AE3T	130	610 395-9716	SHERER	HOWARD M	1481 RED MAPLE LANE	ALLENTOWN	PA	18104-2009
K9TBD	73	610 252-1515	ELSTON	JOEL	3601 SOUTHWOOD DRIVE	EASTON	PA	18042-5727
W3TDF	14	610 346-7313	BILGER	RAYMOND P.	1706 STATE ROAD	COOPERSBURG	PA	18036-9626
W3TEB	133	610 966-5500	BUCHIN	HARRY	21 E. MAIN STREET	MACUNGIE	PA	18062-1308
KA3TEO	149	610 866-3106	NAVARRE	MARVIN	2505 JACKSONVILLE ROAD	BETHLEHEM	PA	18017-3616
KA3TEQ	39	610 437-1871	ETTL	CARL P.	3119 ELM DRIVE	ALLENTOWN	PA	18103-3625
KA3TER	178	610-433-8780	GIFFORD JR	ROBERT G	828 N. PLYMOUTH ST.	ALLENTOWN	PA	18103-2320
KA3THJ		610-838-9383	O BRIAN	CALVIN J	1223 WILHELM RD.	HELLERTOWN	PA	18055-1224
K2TI		610 866-8242	DISBROW	ROBERT P	3590 TEMPLE COURT	BETHLEHEM	PA	18017-2048
KD3TI		717 386-3513	ZIMMERMAN	AMY HESTER	2077 MAHONING MOUNTAIN ROA	LEHIGHTON	PA	18235-3812
KA3TIU	150	610 433-6056	NAVARRE	BRUCE	611 N. 12TH STREET	ALLENTOWN	PA	18102-2232
KA3TMR	153	610 691-6915	KEHS	LEO C.	1001 CHEROKEE STREET	BETHLEHEM	PA	18015-4114
KB3TS		717 424-8865	BATCHLER	LAING T	RD 1 BOX 1128	STROUDSBURG	PA	18360-9731
KA3TTX	165	610-252-3813	KLINE	RICHARD L	2884 OREGON ST.	EASTON	PA	18042-7149
WA2TWS		908 782-3369	BROWN	ROY C.	247 KLINESVILLE ROAD	FLEMINGTON	NJ	08822-5579
K3TYL		610 759-1834	LOCKE	LARRY	404 HERITAGE LANE	NAZARETH	PA	18064-9639
KR3U		UNLISTED!	KROMER	DENNIS D.	34 SYCAMORE DR.	BATH	PA	18014-2154
N2UAF		908 996-7410	REEVES III	MAYNARD W.	64 TRENTON AVENUE	FRENCHTOWN	NJ	08825-1221
KA3USK	170	610-432-4225	LINDENMUTH	DAVID J.	2025 W. LIVINGSTON ST.	ALLENTOWN	PA	18104-3719
KA2UUU	31	908 859-6168	NOWICKI	DONALD	571 MEMORIAL PARKWAY	PHILLIPSBURG	NJ	08865-1533
N2UVV		908 995-2140	DIPPLE	GREG	16 PHYLIS LANE	MILFORD	NJ	08848-1117
KA3UZO	27	610-820-0944	MOSELEY	WENDY M	1371 HIGHLAND COURT	ALLENTOW	PA	18103-6025
KA2VEM		908 859-5654	BUTTNER	WILLARD C.	PO BOX 135	PHILLIPSBURG	NJ	08865-0135
WA3VFW		610 262-3774	LUISSER	THOMAS	932 WASHINGTON AVENUE	NORTHAMPTON	PA	18067-1729
WA3VHL	176	610-398-7345	BLOCK	GLENN	1375 DOE TRAIL ROAD	ALLENTOWN	PA	18104-2054
KA3VJI	173	610-797-3945	OSTAPENKO	BARBARA C.	2485 S. CHURCH ST.	ALLENTOWN	PA	18103-6786
KA3VRQ		610-691-7895	RYAN	PETER M.	1027 ELM STREET	BETHLEHEM	PA	18018-2933
KA3VRR		610-398-8686	VASSILAROS	PATRICIA W	5582 KART DRIVE	ALLENTOWN	PA	18106-9501
K3VUM		610 746-1173	SEMPER	CLEMENT E	175 W. NORTH STREET #404B	NAZARETH	PA	18064-1432
WA3VVG		610 797-4172	LUNDBERG	ROBERT H.	3707 HAWTHORNE DRIVE	CENTER VALLEY	PA	18034-9713
KX3W	23	610 867-5361	LULIS	ROBERT P.	1739 KLINE AVENUE	BETHLEHEM	PA	18015-3913
KW3W	74	610 865-1641	NEIFERT	ROBERT	3 FINADY AVENUE	BETHLEHEM	PA	18015-2710
KD3WH		610 398-7524	KNAPP	JOHN E.	9936 TREXLER ROAD	BREINIGSVILLE	PA	18031-1740
W3WIY		610 866-2827	HUTCHINSON	RICHARD A	1705 KAYWIN AVENUE	BETHLEHEM	PA	18018-1738
KA3WJF		610 252-0335	MILBURN	ROBERT E.	2644 SPRING GARDEN STREET	EASTON	PA	18042-2625
KA3WLP		610 250-0124	FOSS	MATHEW	909 OLD MILL ROAD	EASTON	PA	18042-1028
KA3WLQ	111	UNLISTED	EISENBERG	ERIC H.	4167 WINCHESTER ROAD	ALLENTOWN	PA	18104-1951
KA3WOB	149	610 866-3106	NAVARRE	DELORES M.	2505 JACKSONVILLE RD.	BETHLEHEM	PA	18017-3616
K3WPI		717 629-3840	BARROW	ROBERT	P.O. BOX 631	STROUDSBURG	PA	18360-0631
KA3WRO	170	610 432-4225	LINDENMUTH	JAMES M.	2025 W. LIVINGSTON STREET	ALLENTOWN	PA	18104-3719
KA3WRP	30	610 797-0355	LOUX	ROBERT W.	2701 SW 28TH STREET	ALLENTOWN	PA	18103-7401
KA3WSL	188	610 481-9606	TOLAND	EARL L	1037 L VILLAGE ROUND	WESCOSVILLE	PA	18106-9781
KU3X	75	610 691-8888	KERY	BARRY G.	2028 RIVERSIDE DR.	BETHLEHEM	PA	18015-9537
W3XM		610 965-9660	ROSSANESE	ANDREW L	704 FURNACE STREET	EMMAUS	PA	18049-3603
WC3Y	137	610 691-8273	WEIERBACH	KENNETH W.	1286 SEIDERSVILLE ROAD	BETHLEHEM	PA	18015-9301
K3YD	38	610 865-0687	BATES	BLAIR E.	1132 STAFORE DRIVE	BETHLEHEM	PA	18017-1032
KA3YGF		UNLISTED	ENNIS	GUY	949 WOOD STREET	BETHLEHEM	PA	18018-4439
W4YID	184	610-433-6991	TAMM	ALBERT BUD	304 S. 18TH ST.	ALLENTOWN	PA	18104-6717
KA3YIU		610 847-2475	BECKER	JOHN S	PO BX 8 BEVERLY DR	FERNDALE	PA	18921-0008
KC3YN	90	610 252-2028	WERKHEISER	RONALD W.	1400 MERION AVENUE	EASTON	PA	18042-5615
W3YU		610 866-5752	WALSH	ROBERT S	1846 TACOMA STREET	ALLENTOWN	PA	18103-1118
KA3ZAT		610 767-0125	HOMAN	DANIEL W.	5258 ROUTE #873	SCHNECKSVILLE	PA	18078-2216
KA3ZBE	179	610 395-4724	SWAYZE	BURTON W.	3803 BROADWAY	ALLENTOWN	PA	18104-5219
KA3ZDA		610 395-0803	REMINGTON	JOHN L.	1015 H. VILLAGE ROUND	WESCOESVILLE	PA	18106-9778
WA2ZGO		908 454-3724	HUTCHINSON	JAMES	130 GARRISON ROAD	PHILLIPSBURG	NJ	08865-2126
KB3ZH		UNLISTED!	WILLIAMS	JOHN	4600 CHARLES STREET	EASTON	PA	18042-4812
W3ZIF		610 797-9406	KRAMER	ROYAL W.	740 S. CARLDON STREET	ALLENTOWN	PA	18103-3406
KA3ZIZ		610 826-4126	FRANTZ	JEFFERY S	916 EDGEMONT AVENUE	PALMERTON	PA	18071-1015
KA3ZOY		610 866-1131	POPLASKY	EDWARD B	525 FILLMORE STREET	BETHLEHEM	PA	18015-3439
KA3ZQN		610 253-7185	WILSON	TIMOTHY J	2223 GRUVER AVENUE	EASTON,	PA	18042-2807
WA2ZQS		610 759-2826	KROMER	KIM D.	59 W. HIGH STREET	NAZARETH	PA	18064-1413
WA3ZRO		610 797-1327	LEIBOLD	JAMES	1966 SO LAW STREET	ALLENTOWN	PA	18103-8613
KA3ZSS		802 258-2520	SCHNEIDER	ALEXANDRA	35 WILLIAM STREET	BRATTELBORO	VT	05301
K3ZTJ	79	610 865-9947	KAUFFMAN	GILBERT H.	309 W. 4TH ST	BETHLEHEM	PA	18015
KA3ZWT	129	610 261-0403	SEIER	CARL	5234 PLATA DRIVE	COPLAY	PA	18037-2565
N5ZXN		610 882-5487	AMOS JR.	CHARLES D	1301 MAIN STREET	BETHLEHEM	PA	18018-2313

AMATEUR RADIO WORD SEARCH
by Dick, WA7QCC

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S J J A A X S I S A A O E Y I S P N L Z A B Q P S O Q N I O
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L A T C K N R I O O C L Q O P R R E C Y I E F Y R P Q B N R
Z K O E E U M P C J M U L A A T N C D E V N R R I Q B M X A
R E R U U B E A C O N O C E E U X E H L E C R D J A Q B J N
A R T E L E V I S I O N U H T D W G F Z R Y S T A T I O N E

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de Dick, WA7QCC

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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
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