THE DELAWARE-LEHIGH AMATEUR RADIO CLUB, INC.

NEWS

RD #4
GREYSTONE BUILDING
NAZARETH, PA
18064

* * * *

Letter From the President
HOW ABOUT A NEW AMATEUR RADIO GAME?

Tired of the old Amateur Radio game? Tired of the usual repeater usage game? Then, how about a new radio amateur game?

This is a game about winners and losers. The rules are simple: Make up your own and don't tell anyone. Then, when you play, you will always be a winner. For example, let's say you want to cause interference to someone on the local repeater (a bit childish, and illegal, but a fun game). All you have to do is wait until the victim is talking, or perhaps trying to program a control funtion on the repeater controller (one of the best times to play the game!). Just grab your trusty handie-talkie (or any rig for that matter...remember, you make the rules!) and "interfere."

But what if the victim doesn't want to play the game? So, the victim quits. Well, I guess that makes you an instant winner! After all, it's "your" repeater. You have rights, just like any other user (or is it, abuser?). You are a winner!

Now. Let's change a few rules. Just for the fun of it! First, let's make the repeater "our" repeater. Then, let's make the potential victim a Ham at the scene of a serious traffic accident. This is much better than before, because the victim is the only source of communication to summon help! (Boy, what a game!) This Ham may also be our repeater repair person.

But wait a minute! What if our machine is off the air and we no longer have a repair person as a result of the persistence of this game? And what if an innocent person dies because help can't be summoned while the interference continues? Are you a winner or a loser?

We all know the rules of the true, legal Amateur Radio game. Like it, or not, we must abide by and police those rules. If we don't, our game will be taken away from us and given to others. Please use your "toys" wisely.

KU3K

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Secretary's Report

The June meeting of the DLARC found 39 members and guests present. Two new members were welcomed into the club. They were Russ Hobby, WA3LGG and Francis Lisicky, W3IYG. Bob, KU3K presided over the meeting.

It was announced that Don W3LR has resigned from the repeater committee due to long standing problems of interference. Those members who have indicated an interest in the technical committee will be contacted in order to have a group of people able to maintain the repeater and controller.

Members were reminded of the Club Banquet on June 6 at Alan's Stockyard.

Field Day was discussed. We will have 3 stations operational.

Barry KU3X reported from the Activities Committee. Upcoming contests were announced. Work was done on the W3OK station antenna. The need for 160 meter traps was expressed. A motion was made to purchase the traps. The motion was seconded and passed unanimously.

The Derriere in the Delaware will be held July 19 from 9AM to 4PM. Clarence W3PYF is chairman. Persons interested in participating should contact him.

Future club programs were announced by Bob W2CCE. They are:

July -	Satelite earth station by Dave Porter K2BPP
August -	Midwest DX Association movie.
September -	Undersea Cables (AT&T) by Bob KW3W
October -	Hugh Turnbill W3ABC

The meeting was adjourned and Joel, K9TBD gave a presentation on high speed code. Thanks to all who took the time to attend the Club Banquet. Hopefully every one had an enjoyable evening; I know I did.

de Diane NB3L

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Contest Calendar

July 4-5	Venezuelan SSB Contest
July 11-12	IARU World Championship
July 18-19	CQ WW VHF Contest
July 25-26	Venezuelan CW Contest
July 25-27	MARAC County Hunters CW
Aug. 1-2	New York State QSO Party
Aug. 1-3	Two Meter QSO Party

de Barry, KU3X-ray

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FROM THE OLD MAN
by Clarence W3PYF

Well, two of our club members made it in the last month to EXTRA class. N3EBH, Tom and KA3MNY, Roy passed their extra tests and have already applied to help with the VE testing. Both mine and the clubs congratulations to both of these members. [PS, wish I was smart enough].

For those of you who attended the annual club dinner during the month of June, you will all agree that the food and the talk were both the top of the line. Dave Porter, K2BPP, did an excellent job of telling of his experiences in the area of the North Pole. For those who missed it, Dave will be talking on Satellite reception at the next club meeting on July 2, and this should be very interesting as he is now in the group of ATT who handle this at the Halley, PA installation. It may pay to show up a little early to watch and help with the set-up of the dish.

By the time you read this Field Day will be a thing of the past but we have two activities coming up that should be noted. EMA, and RACES will participate in two activities in the Easton area. On July 5th we will furnish the communications for the Heritage Day activities in Easton. I had a call from the Chief of Police of Easton with the request for our services. Several have already volunteered for this worthwhile event, we will use the County Communications Van as a base of operations.

Then on July 19 we will be participating in the "Derriere in the Delaware", in which we have participated in for the past years, with as many as possible to act as safety watchers for the benefit of the Red Cross. Contact me if you can be available for either of these events, if you have not done so already.

For your information, Wally, W3YXS is now a control operator of W3OK repeat and you may hear him on there from time to time doing control functions.

Bill, KA3NRJ now has a 450 mHz repeater on the air on 444.10 with 151.4 PL. If you are interested in using the phone patch connected to that unit please call him at 346-7781, his residence. It is an open repeater on a very high location, with great coverage. The PL is the same as W3LR/R on 444.300 and the W3OK/R on 444.90. It is great to see that most of the Lehigh Valley 450 repeaters are changing to this PL. Larry, K3LZ is considering it.

For your information, Charley Adams, K3HKZ will be putting a 450 repeater at Northampton County EMA at the W3PYF, 145.11 site in about a month, it may be tied to the 2 meter repeater and can simulcast, the same as the 450 on '70.

Lets all try something new for the coming months, when you push the button on your transmitter on .70, give your call letters. Lets stop the cherchunking on the repeater without call signs, at least if that happens we know that there is no trouble with the repeater.

W3GQQ, Bob of Northeast Electronics has put a 220 repeater on the air and it is available to those in the area interested in that band. It operates on a frequency of 224.8. This will be an open repeater, a help to the novices in the area as well as others as it has auto-patch on it, but membership is required for autopatch use. Contact Bob or Amy for information.

73's
Clarence, W3PYF

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VE Testing Schedule for Remainder of 1987

Aug. 7 - Code testing begins
Sept. 4 - at 7:00 PM.
Oct. 2 -
Nov. 6 - Theory tests begin after
Dec. 4 - completion of code tests.

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June 5 Test Results

6 Hams took tests. 4 passed. There were 2 Extras, 1 Advanced, and 1 Technician.

DLARC Members upgrade- Tom, N3EBH upgraded to EXTRA. Congratulations Tom.

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YOU KNOW IT'S GOING TO BE A ROTTEN DAY:

WHEN YOUR TWIN BROTHER FORGETS YOUR BIRTHDAY!

THE TRANSMITTER LOADER
by W3TDF

What is an 'Antenna Tuner' , sic? There is no such thing! What is a 'Transmitter Loader? Now there is a fair question. The Transmitter Loader is the 'box' that goes between the transmitter and the load. It is quite often referred to as an Antenna Tuner!!

How do you tune something? You adjust it, or some component of it, to get the desired result. With a tuned circuit, LC that is, you change either the capacitance or the inductance. When you tune an antenna you change either the length or the diameter, if it happens to be a dipole. If it is a verticle, or such, you can change the resonant frequency by adding a loading coil or capacitor to it. Then the loading coil or capacitor becomes a part of the radiator and it radiates also! (Because it is now part of the antenna).

I really get a charge out of hearing an amateur say that he would not operate a solid state transmitter without the box in there. By 'box' I mean the transmitter loader, (referred to by some as the 'antenna tuner'). Anyway, I become even more amused when I hear another ham running a high power amp on 2 meters, but he surely doesn't have a box in between. How the devil does he keep from blowing up the linear amp, which is most assuredly solid state??

Getting back to the subject at hand, I remember seeing an article in CQ (I think), about 30 years ago, where a ham (who was also a machinist) built a beam antenna which he could remotely tune by the use of small motor driven cables that actually changed the length of the elements. That is and was the only 'Antenna Tuner' that I ever heard of. So what does this box, which I refer to as a transmitter loader, actually do? It matches the feed impedance of the antenna system. Maybe at this time I should explain that the antenna system includes the feed line.

Feed line (coax or whatever) can be used as a matching device. A half-wave length of the stuff has the same impedance at the far end as at the fed end. A quarter-wave length can be used as a stub, because one end acts like a short-circuit (zero impedance), while the other end has infinity impedance. Therefore a piece of feed line, if cut to the proper length can match different impedances which provides th e maximum transfer of energy to the radiating

element. NOTE that this only occurs at one frequency!! If you change frequency without changing the length of the feedline or the antenna then you no longer have a matched system.

Now I am going to state something that even confuses me, but then that isn't difficult. IF the antenna is self resonant at the operating frequency then the length of feedline is of no consequence. The feedline impedance however, must be the same as the antenna feed point as well as the same as the output impedance of the transmitter. A change of length of the feedline in this instance only changes the phase of the signal being transmitted!!!

So, why do I want to call this box a Transmitter Loader. To be truthfull I could also call it an impedance matcher.

An antenna of a given length coupled through a feedline of a given length (the antenna SYSTEM), is impedance resonant at one and only one frequency. Any deviation from that frequency results in a mismatch. Now you need a device (box) to re-match the new system impedance. Does the feedline also radiate in systems that are not impedance resonant? I don't know the answer to that, but My opinion is afirmative.

Typically speaking then, with the existing solid state, state of the art equipment, if the antenna is resonant at the operating frequency and the impedances at the transmitter and antenna match that of the feedline, then you don't need that box... B U T, don't change frequency by more than a few kcs (or is it khz?).

As an afterthought, you must realize that the antenna does not have to be fed in the center. The impedance will be different and may or may not be acceptable. Take note of the different feed points and impedances shown for the Delta Loop antenna in the June club bulletin written up by Barry, KU3X.

Ray, W3TDF

Commodore I/O Ports Explained
PART 2
by: Wally Green, W3YXS

Input ports are addressed similar to the Output ports explained last month. Again you must remember to go to the DDR and put a "0" in the register to make the ports inputs. POKE 56579,0 will make all of the ports input. When we have the DDR set up we can now have the computer check if there has been any action from the outside world. We now check the port for a "0" or a "1". To do this we use the following formula: x=-((PEEK(56577)AND64)=0). There are two new commands introduced in the input mode. The PEEK command is used to look in memory locations to see what is going on at a certain time in your program, and the AND command is used to make sure that you see either a "0" or a "1". The AND command is explained in figure 2.
Examples:

```
10 H=56579:L=56577
20 POKE H,0
30 x=-((PEEK(L)AND64)=0
40 IF X=1 THEN GOTO 60
50 GOTO 30
60 PRINT, "DONE"
70 END
```

Line 10: We assign the DDR and the port to "H" and "L" so we don't have to type in those long numbers all the time.
Line 20: We make the DDR an input register by making the DDR 0.
Line 30: We use the formula and look for PB6 or port K to have a "1".
Line 40 says if X is equal to "1" then go to line 60.
Line 50 puts the program in a loop until PB6 does see a "1".
Line 60 prints DONE.
Line 70 ends the program.

For the computer to see a "1" at port PB6 this port is going to have go to ground. If you had a relay or a switching transistor connected to PB6 and ground, and would activate the relay you would ground the port PB6 which would make that port a "1" and your program would continue. That is the first step in controlling your computer from the outside world.

All of the above holds true for the VIC 20 except you use 37138 for the DDR and 37136 for the ports.

FIGURE 2.

BEFORE GROUNDING PB6

	128	64	32	16	8	4	2	1
PORT B	PB7	PB6	PB5	PB4	PB3	PB2	PB1	PB0
	0	0	0	0	0	0	0	0
AND (64)	0	1	0	0	0	0	0	0
	0	0	0	0	0	0	0	0

"AND" IS USED IN BOOLEAN ALGEBRA. WHEN "AND"ING A BYTE NUMBERS ARE "1", IN THE ABOVE EXAMPLE WHEN YOU GROUND PORT PB6 IT BECOMES A "1" SO BOTH THE PORT AND "AND" ARE "1" AND THAT MAKES X = 1 IN THE FORMULA X = -((PEEK(L) AND 64) = 0)

AFTER GROUNDING PB6

	6	5	4	3	2	1	0
GROUND PORT PB7	0	1	0	0	0	0	0
PB6 (64)							
	0	1	0	0	0	0	0
AND PB6 (64)	0	1	0	0	0	0	0

NBS-1220
(2-87)

1987 SURVEY OF NBS TIME AND FREQUENCY SERVICE USERS

U.S. DEPARTMENT OF COMMERCE
NATIONAL BUREAU OF STANDARDS
OMB NUMBER 0652-0024
APPROVAL EXPIRES JUNE 30, 1987

My responses primarily reflect the view of: ☐ an individual ☐ an organization

Organization name _____ Approximate number of time and frequency users in this organization _____

USE OF CURRENT SERVICES	WWV (MHZ) 2.5	5	10	15	20	WWVH (MHZ) 2.5	5	10	15	WWVB 60 KHZ	GOES SATELLITE 469 MHZ	TELEPHONE WWV	WWVH
How often do you use each of these NBS services? (0=Never; 1=Rarely; 2=Sometimes: 3=Frequently)													
How often do you observe harmful interference when using these services? (0=Never; 1=Rarely; 2=Sometimes; 3=Frequently)													
How would you characterize your usual reception reliability? (0=Extremely poor; 1=Poor; 2=Generally adequate; 3=Excellent)													
Do you usually use these services during daytime or nightime hours? (D=Day; N=Night; B=Both)													

ADEQUACY OF CURRENT SERVICES	WWV	WWVH	WWVB	GOES SATELLITE	TELEPHONE TIME-OF-DAY
Do the current NBS services satisfy your needs for accuracy? (0=No; 1=Marginally; 2=Generally yes; 3=Yes)					
Do the current NBS services satisfy your needs for reliability of reception and ease of use? (0=No; 1=Marginally; 2=Generally yes; 3=Yes)					

FOR USERS OF WWV AND WWVH	VOICE TIME OF DAY	BCD TIME CODE	1-SECOND TICKS	STANDARD FREQUENCY	DUTI VALUES	MARINE WEATHER	GEOALERTS	OMEGA STATUS
Which types of information on these broadcasts do you use at least occasionally? (Indicate by checking each appropriate box)								
How important is each type of information? (0=Not at all; 1=Marginal importance; 2=Important; 3=Very important)								
Is the present quality of the voice announcements of weather, geoalerts, and Omega System status adequate for your needs? (Yes or No)	☐ Yes ☐ No If no, why? _____							

FOR USERS OF WWVB	STANDARD FREQUENCY	TIME CODE
How important to you or your organization is each of these aspects of WWVB? (0=Not at all; 1=Marginal importance; 2=Important; 3=Very Important)		

FOR USERS OF THE GOES SATELLITE TIME CODE

Does interference in your area significantly hinder the usefulness of the satellite time code? (Yes or No) ☐ Yes ☐ No

Do you use the GOES time code status reports by accessing the "NBSGO" file in the U.S. Naval Observatory's Automated Data Service System? (Yes or No) ☐ Yes ☐ No

Do you use the full accuracy of the time code (100 microseconds) via a receiver that automatically corrects for path delay variations? (Yes or No) ☐ Yes ☐ No

Do the occasional time code shifts of more than 100 microseconds at times of satellite maneuvers cause serious problems for your application? (Yes or No) ☐ Yes ☐ No

FOR USERS OF THE WWV OR WWVH TELEPHONE TIME-OF-DAY SERVICES

How often do you encounter busy signals when calling (303) 499-7111 or (808) 335-4363? (0=Never; 1=Rarely; 2=Sometimes; 3=Frequently) ☐

Would the value of these services be decreased if only a high-quality voice time announcement were available without the weather, geoalert, or Omega status information? (Yes or No) ☐ Yes ☐ No

If yes, why? _____

(OVER)

PLEASE FOLD AND TAPE BEFORE MAILING. DO NOT STAPLE!

POSSIBLE FUTURE CHANGES IN NBS SERVICES	ACCURACY	RECEPTION RELIABILITY	COVERAGE AREA	EASE-OF-USE	USER COST
In the development of future time and frequency services which of the following aspects need the most improvement? (Check appropriate boxes)					

If the availability of new services in the future with improved capabilities in terms of accuracy, reliability, coverage, etc. required the payment of an annual user fee of less than $250/year, would you or your organization likely subscribe to such a service? (Yes or No) ☐ Yes ☐ No

Do you need NBS timing signals designed for direct interfacing to computers? If "Yes", what accuracy level is needed? ☐ Yes ☐ No

Accuracy Level _____

What new or improved time and frequency services would you find useful? (Please describe briefly)

_____

USER DATA

Please indicate which of the items below apply to you as a user of NBS services: (✓)

☐ Private Citizen
☐ Government/civilian
☐ Government/military
☐ Radio/TV Operations
☐ Standards Lab
☐ Electric Power Industry
☐ Telephone Industry
☐ Aviation/aerospace Industry
☐ Transportation Systems
☐ Communications Systems
☐ University
☐ Geophysics/seismology
☐ Health Care Industry
☐ Pleasure Boating
☐ Equipment Manufacturing
☐ Jeweler/watchmaker
☐ Amateur Radio

Other (Specify) _____

Please indicate which of the iterns below describe the purposes for which you use the NBS time and frequency services: (✓)

☐ Frequency Calibrations
☐ Watch/clock Setting
☐ Master Clock
☐ Navigation/Position Location
☐ Time Base for Computers
☐ Time Base for Synchronizing or Controlling Operations
☐ Time Base for Data Monitoring
☐ Surveying
☐ Space/missile tracking
☐ Marine Weather
☐ Propagation Information
☐ Astronomy
☐ Hobby
☐ Geolart Information
☐ Omega System Information

Other (Specify) _____

In what state of the United States or foreign country do you use the NBS time and frequency services? (Two-letter state abbreviation or country) _____

Please estimate the annual economic value of the NBS time and frequency services to you or your organization, if possible. $ _____

Additional Comments:

U.S. DEPARTMENT OF COMMERCE
National Bureau of Standards
325 Broadway
Boulder, Colorado 80303

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BRAZIL - 29 June - 5 July. Celebrating Brazil's Fire Prevention week, ZZ8ADV on ssb and ZZ8VMC on cw will be on 10-80. QSL via the '87 CBA of PW8DP.

***

CALF OF MAN - 4-6 July. GD4IOM will lead a DXpedition on a 10-160 outing to this rare Channel-Island that counts for the Worked All Britain Award. The major effort will be on 3795 QSX 3805 KHz (using a Delta Loop). They'll work "split" on 40m, too. On 160 the antenna will be a 500' Zepp. QSL via GD4GWQ.

***

COCOS KEELING I. - 23-30 June. At Presstime we're awaiting the start of 10-40m cw and ssb operation by OH5VD (whose VKØY callsign is awaiting his arrival). QSL to his home CBA.

***

EASTER I. - CEØFFD, Henry, on 28,039 KHz at 2140 UTC, invites daily skeds on 10, 15 and 20m between 2000 and 2359 UTC. QSL with s.a.e. and postage to Box 4, Easter I. ... YL, Patty, CEØGHO is on 14,200-220 KHz weekends between 2300 and 0200 UTC. QSL as above to Box 1, Easter I. (Once-a-week mail delivery slows the QSLing rate)!

***

GIBRALTAR - ZB2FK likes 28,548 KHz from 2300 UTC. QSL via CBA or Buro.

***

GREENLAND - WA2TTI/OX, with the Air National Guard, now has his new OX3GH call-sign and is near 14,200 KHz daily from 2300 UTC. QSL to his WA2TTI CBA.

***

LIBYA - Now to 30 June. 5AØA, preparing to terminate his assignment there, QSYs between his favorite frequencies - 14,025, 14,175, 14,265 and 21,265 KHz - every day from 1400 to 2030 UTC. QSL via SP6BZ (address in Issue 8-87).

***

MONTSERRAT - 4-10 July. Rick, VP2MIU and Alex, VP2MM plan cw and ssb action on 10-160. QSL both via AB1U.

***

NAURU - C21A on 14,185 KHz at 1230 UTC. QSL Ed to Box 17, Republic of Nauru. ... C21FS often joins-in on the same schedule. QSL via G3NOF.

***

NIGERIA - 5NØWRE moves around the 15m ssb band during his daily stints from 1600 UTC and then QSYs to random 20m ssb frequencies from about 1900 UTC. He obviously doesn't like pileups and slides 5 KHz up or down when they occur. QSL via K4JZQ.

***

NO. COOK IS. - Now to 30 July. ZK1XV on 14,220 KHz daily from 1300 UTC and later in the various DX nets. "Bing" invites schedules for cw and ssb on 10-160. QSL via the '86 or '87 CBA of VK2BCH with an s.a.e. and a greenstamp.

***

R. S. A. - ZS1DM, 'way down there near Cape Town, is near 7062 or 7095 KHz working "split" with KDØJL around 7163 KHz most days from 0600 UTC. QSL to Dean's CBA.

***

THE GAMBIA - C53BU, occasionally in the W7PHO Family Hour on 14,226.5 KHz, is otherwise near 14,214 KHz from 2200 UTC. QSL Bekai to P.O. Box 720, Banjul.

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TRISTAN DA CUNHA - ZD9BV is near 21,265 KHz most days from about 1700 UTC. QSL Andy via F6FRU.

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VANUATU - The early mailing of this Issue should give you a few days to catch Ron Wright signing YJØARW with cw and ssb on all bands plus RTTY on 20. He announces his skeds in the Brown Sugar Net on 14,309 KHz around 0300 UTC. QSL to ZL1AMO's CBA.

All Amateur Radio Operators are invited to
participate in the DLARC Nets
on 146.70 W3OK/rpt.
The Nets are held on Sundays at 9:30 AM
and on Wednesdays at 7:00 PM.
The alternate repeater for these Nets
is 145.110 W3PYF/rpt.

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The DLARC NEWS is the Official Publication
of the Delaware Lehigh Amateur Radio Club Inc.

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1987
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CLUB MEETING NIGHT

All regular meetings of the D.L.A.R.C. are held
on the first Thursday of each month at 7:30 PM
in the Greystone Building at Gracedale.
Phone....759-2600

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Any comments or articles contributed to
this newsletter should be addressed to:
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DELAWARE-LEHIGH AMATEUR RADIO CLUB, INC.

NEWS

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NAZARETH, PA
18064

LEHIGH VALLEY, PA 18001
PM
29 JUN
1987

01/01/88

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Amateur Radio News Service