1989

THE DELAWARE-LEHIGH AMATEUR RADIO CLUB, INC.

NEWS

RD #4
GREYSTONE BUILDING
NAZARETH, PA
18064

NEXT MEETING APRIL 6th

600 KW TRANSMITTER AND HOW IT GREW

BUILDING THE BIG ONE

The program for the April 6th club meeting will be given by Bob Dickinson, W2CCE. Bob spent several years with Trans World Radio an international Christian broadcasting organization. TWR has stations around the world and utilizes transmitters with powers up to a megawatt, broadcasting in nearly 100 languages. Bob directed many projects including the design and installation of one of the world's largest parasitic arrays. This array has five elements on 800kHz handling over 600kW on the island of Bonaire, Netherlands Antilles (where he held the call PJ9BF).

Bob will describe the station and the details of this antenna system. The project was undertaken an a relatively low budget and therefore included a good deal of improvisation with which we all can identify. There will be slides and a time for questions.

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NOVICE CLASSES START APRIL 14th

As announced at the last club meeting, Novice classes will start at the Club meeting room on Friday night April 14th.

With Daryl, K3EX leading the classes, the sessions will take about 10 weeks. If you have any friends interested, have them call Daryl and let him know.

The club will buy the course materials and sell them at cost to those who take the class. It will consist of Tune in the World and the FCC rule book, and they will cost $20.00.

There is no charge for the classes.

Lets try to get some new and young blood into our hobby. Tell your friends and neighbors.

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BOARD MEETING NOTES

Several very important topics were discussed at the special board meeting of the club on March 9th. With every board member but one attending many very important decisions were made regarding the activities of the club. First, the principal capital expenditure this year will be the upgrading of the 450 input to the repeater. The growth of interest in the band has made this necessary.

It was decided that at the club picnic to be held on August 20th, there would be a club sponsored auction.

Field day activities this year will again be held at Hackett park, but because of the possibility of the loss of many of the enclosures, we will opt to use the pavilion as well. Arrangements with the City of Easton have already been made.

Tony, N3CVH has agreed to take over the clean up of the club station, but help is needed to straighten out the equipment on the table in the room. If you will help, contact either Tony or W3PYF. Bill, K3ANS will be filing the forms to the State of Pennsylvania in an attempt to get a tax exempt status for our organization, to aid in the purchasing equipment for training and instruction.

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DELAWARE-LEHIGH
AMATEUR RADIO CLUB
ANNUAL BANQUET
Saturday, May 13th, 6:00 PM
Alan's Stockyard, Easton
$17.00 per person (cash bar)

A FEW MINUTES WITH NQ3D

The monthly meting of the DLARC was held at the Greystone Building, Nazareth. on March 2nd. There were 50 members and guests present. The meeting was called to order by club president, W3PYF. The minutes of the February meeting were read and approved. Treasurer KA3MNY reported a club treasury of $5284.69. Roy also announced that the club accounts have been transferred to the Second National Bank of Nazareth.

New members elected included:

KA3UCK....John Gray
KA3UCR....Beatrice Gray
N3GQT.....Osamu "Sam" Yamada
KA3UCS....Norman Daniel

Daryl, K3EX, announced that the Novice license classes will begin April 14th with classes to be held every Friday evening at 7:00PM. The club will order 20 sets of study material and these will be made available at a nominal cost. The classes will be advertised in local Radio Shacks, newspapers, etc. If you know of anyone interested, please contact K3EX. A discussion on the possible move of the meeting location to another location in the Gracedale complex was held, and as soon as the labor dispute is completed at the facility, is rectified, we will again try.

Under new business:

KU3K, K3YD and KU3X will initiate a study to recommend needed club projects. The funds available in the club treasury will be used for the expense of the projects.

W3PYF announced that there will be a questionnaire in the April Newsletter for members to express their likes and dislikes with the newsletter. Clarence extended the membership's thanks to Bill, NC3P, for keeping the club data-base up to date. It was stated that the list would be available ONLY to club members, not outside interests for mailing lists etc. "PYF" also asked for the opinion of the membership concerning the possibility of selling space in the Newsletter to outside concerns for advertising The cost would be $25 per 1/4 page and $100. per full page per month. It was felt that this would be a worthwhile venture and could possibly make our Newsletter "cost-free" in the future. the club's "non-profit" status would not be affected.

It was announced that N3ELM, will be installing a new repeater on 147.285 atop a tower in Forks Twsp. This repeater, with the call N3DZM could possibly cover a 200 mile area.

Bill, K3ANS, reported the club banquet will be held May 13th at Alan's Stockyard on Rt 611, north of Easton. The facility can only seat 100, so please contact Bill or Ray, W3TDF ASAP if interested!

The meeting was adjourned and Tom Daniels N3CXP, presented an excellent explanation of amateur satellite communications.

de Mike, NQ3D, secretary

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HUMOR AND MORE HUMOR

Reprinted from the "Ground Wave", the St. Paul Radio Club.

I can't remember just a line to say, I'm living that I'm not among the dead though I'm getting more forgetful and mixed up in my head. I got used to my arthritis to my dentures I'm resigned, I can manage my bifocals but OH! how I miss my mind.

For sometimes I can't remember when I stand at the foot of the stairs, if I must go up for something or have I just come down from there.

And before the fridge so often my poor mind is filled with doubt, have I just put food away or have I come to take some out.

And there are times when it is dark, with my nightcap on my head, was I just lying down or just getting out of bed.

So if it's my turn to write you the's no need for getting sore, I may think that I have written and don't want to be a bore.

So remember that I love you, and wish that you were near, There I stand beside the mailbox with face so very red.

Instead of mailing your letter, I have opened it instead.

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DON'T FORGET!, ANNUAL DINNER AT THE ALAN'S STOCKYARD, NORTH OF EASTON ON MAY 13TH..Call W3TDF with your reservation. Seating will be limited. Only room for 100...

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FCC REVOKE'S LICENSES

The FCC on February 3 issued an Order of Revocation and Affirmation in the case of a group of 11 amateurs from Puerto Rico who, according to the FCC, committed fraud in obtaining amateur licenses or upgrades, or who fraudulently certified that others had passed examinations for amateur licenses.

The Order says that the violations arose in connection with three W5YI VEC sessions held in Guaynabo, Puerto Rico on August 16, August 30 and October 4, 1986. The FCC found that the examiners for those sessions, NP4E, NP4H, WP4U, KP4FW, KP4KB and KP4IN had assisted others in obtaining amateur licenses by fraudulent means, and had misrepresented material facts to the FCC. The candidates, WP4FOG, WP4FOF, NP4ZN, WP4GAW and NP4ZM,were found to have obtained amateur licenses by fraudulent means. Two of the 11 amateurs, NP4ZN and WP4GAW, had earlier surrendered their licenses for cancellation, rendering their cases moot. Three of the examiners, WP4U, KP4FW and KP4IN, due to what the Commission described as their exemplary cooperation, had their operator license suspended for six months, and their station licenses were not revoked. The remaining six amateurs had their operator licenses suspended for the remainder of the license term and their station licenses revoked. These investigations were carried out by the FCC field office in San Juan, Puerto Rico.

From the ARRL Newsletter

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HIGH FREQUENCY PACKET

Here is a snap-shot of what is happening on 20 meters on the weekends - this happens to be packet but the rest of the modes offer as much interest - the date and time are 21:45z 5.02.1989 from K9TBD monitoring 14.106 #mHz.
Calls heard: WB9TYT, KI1BT, XF3R, 4X1RY, EA3BVS, TF3KB, W4MWP, W7LAU, AA5CQ, V34PBS, K4YZU, K4BBK, N6OA, N3EMZ, EA3ABW, N1DRS, VE2JA..... The list goes on. Join the digital challenge on 20 meters - Fax, RTTY, Amtor, CW, Packet..... I know that you will enjoy all these
modes. 73's Joel - K9TBD..

THE PREZ SEZ
by Clarence, W3PYF

I am going to ask you now as editor of this Newsletter, what you like and what you think should be changed in this publication. I have been at it now for almost two years now and I would like to make sure that we are doing what you want in Your Newsletter.

Please help me to give you the type of news you want to read. The other members of the staff and I will try to give you what you want to read.

Now to put on my other hat and that is as president of our club.

I am very pleased to see the cooperation we are getting from the membership in all the projects we have underway. It is a source of satisfaction to all the members of the board to see everyone pitching in to help on our projects.

Now, comes the part that I want your opinion on. There is a big push now from many amateur circles to open a "NO CODE" license for amateurs. What's your opinion?

Apparently, even organizations such as AMSAT and TAPR, are asking for a no code type of license to be used on frequencies over 220 Mhz. What are your thoughts? Please let me know IN WRITING at the next meeting if you think this will open a can or worms, or help to get younger members of the population into Amateur Radio and swell our ranks. There would be no change in the entry testing, except that there would be something added to include VHF and Satellite communications.

ARRL is asking us for our feeling on this matter and I would like to have a report to send to them, telling them of the feelings of the Delaware-Lehigh Amateur Radio Club.

As shown in other sections of this newsletter, things are going strong, with Daryl, K3EX and his committee beginning Novice classes on April 14th and the club Banquet set for May 13th, with Chairman W3TDF doing his thing again. This Banquet will be held on the Saturday before Mother's Day at Alan's Stockyard, just north of Easton and it will give all a chance to take heir Spouse out to for Mother's day. The entertainment will be great.

de Clarence, W3PYF

ELECTRICAL SYSTEM GROUNDING
by Jim KA3AHO
(Part 2)

continued from last month

One might ask "How do I properly ground my incoming electrical system so that I may sleep well and know that my home and equipment is safely protected from electrical damage?"

1. It is well-known by knowledgeable people that the National Electrical Code is not a do-it-yourself instruction manual but that it is very specific about what should be done in order to protect life, property, and equipment from electrical hazards.

2. That grounding was one of the most important matters discussed in the code inasmuch as proper grounding and bonding provides maximum protection against damage from electrical malfunctions.

3. That electrical malfunctions (next to smoking) result in more fires than any other single cause. Also that by following the code requirements, one can be assured of maximum safety from electrical fire.

The National Electrical Code requires that ALL electrical services are required to be grounded. Virtually all services to residential properties are single-phase, three-wire systems and are fed from a transformer located not too far away. Residential services are usually 100-Ampere, 200-Ampere, or 400-Ampere, single-phase, three-wire services. These services ALL get grounded in the same way.

It used to be that the incoming cold-water system to a property was installed in steel pipe and later in copper pipe. With the advent of the "plastic age", plastic itself has become increasingly popular and is now used in a high percentage of installations.

The incoming service consists normally of three conductors made into a cable assembly and mounted on the outside wall of the dwelling. This cable goes into the meter socket and the same type of cable usually comes out of the bottom of the meter socket, through the dwelling wall and into the service panel. The cable assembly usually consists of two insulated conductors of the proper size and a smaller, uninsulated conductor of aluminum strands which is wrapped around the other two conductors and then encased in a thermoplastic covering.

The uninsulated conductor terminates in the neutral bar which, in turn, is electrically connected to the panel board steel through a long machine screw or a special jumper. This is called the "main bonding jumper" and is REQUIRED in every SOLIDLY-CONNECTED "Y" service. The other two conductors go to the line side of the "main circuit breaker" which is required by the code to "simultaneously open all ungrounded conductors" so as to disconnect the panel from the source of supply.

At the transformer which supplies the power, the secondary winding of the transformer is center-tapped. This center-tap feeds the neutral conductor and each end of the winding feeds one of the other conductors in the service cable. Additionally, the utility company connects a ground wire to the center-tap and connects it to a driven ground rod at the pole.

At the service panel, the resident is required to install a ground rod and run a conductor from the ground rod to the neutral bar previously discussed. In addition, a conductor is required to be connected to the cold-water distribution system in the house so that it is at the same potential as the neutral bar at all times. As a matter of fact, the code requires that all interior piping be bonded to the neutral bar as well. This has caused quite a furor with the gas company and this has not, as yet, been resolved.

To be concluded next monght. issue of this newsletter.

TVI Problems - Part 3
By Van, K3CP

Ima Lidd has eliminated his TV interference problems. He did it using sound fundamental procedures. Following his Elmer's suggestion he concentrated on a plan outlined in the book. He did not pursue the rare and mysterious causes that he had heard about. You know what he's talking about - the rusty rain gutter, the gold tooth filling, the radio set in the attic -- "and the radio wasn't even turned on". He knew these things did happen sometimes, but that they were the last things to look for after he had followed the simple approach. Let's summarize what Ima Lidd has learned about his TVI troubles from the books and from his Elmer:-

1. You should always assume you are causing TVI until you have proved otherwise. Take a TV set (and maybe an FM broadcast receiver as well) into the shack or where you can see and hear it while you are operating on the HF bands.

2. Minimize the variables. Pick an operating frequency - 20 meters is a good place to start. Don't change antennas or rotate beams during the testing period. Keep a record of the procedures and the results.

3 Observe the TV picture and sound on channels 2 through 6. The problem is fundamental over load if there is interference on all five channels. This must be eliminated at the TV set.

4 The problem is harmonics if the interference is only on channels that are multiples of your operating frequency. This must be cured at your station.

5 Interference to non RF devices is not the fault of your transmitter. These include telephones, garage door openers, touch lamps, PA systems, electronic organs - the list goes on. They were not designed to receive radio signals. If they do they are defective. They must be corrected by a person who services them. You could offer advice if asked, but be an assistant only.

6 Keep your antenna as far from power and telephones lines as possible. Only use enough power to maintain a good signal level.

7 Is the TV antenna, cable, distribution amplifiers and other accessories properly installed by competent service men? Or have they been hay wired by Herbie Glutz? On the other hand you are licensed to pursue your hobby. Your equipment is installed and operated in keeping with good engineering practice and it is probably F.C.C. approved.

Elmer was pleased with his protegees's accomplishments. He said "Ima, you did a good job. You are learning slowly but surely. Keep up and some day you will be an Elmer. de Van, K3CP

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SOLAR FLARES AND POWER LINES
by Randy, N3ET

Solar Magnetic Disturbances (SMD) such as we are currently seeing cause havoc to more then radio propagation. Power companies report unusually large currents flowing on transmission lines causing protective relays to operate and large power transformers to saturate.

The net effect is seen as ground currents. Ground currents are usually caused by an imbalance in three phase bulk power transmission (69kv and above) and makes for a relatively easy way to monitor power transmission lines for faults.

There have been many unusual events in power generation and transmission, most notably loss of large hydro generation plants in Ontario, Canada, which have gone unstable during efforts to restart.Locally, in eastern Pennsylvania, sensitive fault recorders are being triggered by ground currents and bulk capacitor banks have been tripping off line by relays sensing unbalanced neutral currents.

It is hard to imagine solar activity this strong. But it is real and has a real impact on more then we would expect.



DIGITAL COMUNICATIONS
by
Joel A. B. Elston, K9TBD

This digital letter is a review of some significant activity in Packet Radio by the Italians. It is a review of the very recent IEEE Journal on Selected Areas in Communications, Vol. 7, No. 2, February 1989.

For those unfamiliar with the IEEE (Institute for Electrical and Electronic Engineers) publications - these are the most prestigious publications in the field, only the latest, greatest, etc. articles are published - this time a bunch of Italian hams hit it with Ama-teur Packet. In my humble way I will try to translate the 'meat' of this very technical article; It has significance in the direction that Amateur Packet may go.

The title of the article is:

"Radio ISA Net: A Single-Hope Centralized Packet Radio Network for PC-to-Mainframe Interconnection". The authors are M Aicardi, F Davoli, and A Giordano. The implementation which these fellows made is essentially a central controlling node using standard AX.25 equipment. They are located in Genoa, Italy. Here are the main features of their modification to standard Packet. They had a desire to connect a bunch of stations (PC's) via wireless to a mainframe (uVAX-II). They used standard AX.25 with CSMA (Carrier Sense Multiple Access) our standard method of com-munications:

1) Base station is the control station for feedback control.

2) Synchronization is accomplished by a time slotted channel.

3) End-of-Transmission is used to reconsider the channel access both by the receiver and sender.

4) Each station assesses its own channel access parameter.

5) The central station periodically sends a 'broadcast' message to all stations giving them the status of access status.

6) Periodically, each station sends the central station an estimate of its probably of transmission or acquisition to the base.

7) The base station synchronizes all sta-tions. These stations my not hear each other but each remote station hears the Base station. The local stations - by the synchronization of the base - do not collide with one another (except very rarely).

These are the main features of this new ISA protocol which is on top of our current AX.25. The difference is that there is a single station which is the master controller - it allows or discourages remote stations connecting upon receipt of the remote stat-ions own assessment of their need to connect. The ISA protocol was described in detail in an earlier article in the IEEE mentioned publication. By the way, references may be found at the end of the article for which this is a review.

From a practical point of view: these fellows have implemented this new protocol in 'Real-Time' using the following hardware: 70cm, 10W voice radios, using FSK - the rates of data transmission are up to 12kB/s.

TNC is Z80 based with 32 kB of Eprom and 32kB of RAM, the HDLC processor is the Z85-30, and the Modem is the ever favorite 7910 Single Chip Modem which I described last month and is used with the DIGICOM system.

Conclusions:

The scheme used is a polling system, heretofore, unused in Amateur Packet. There is significant advantages for the Single Hop system as indicated by their various charts and equations.

TCP/IP is considered and in use for higher level functions for the packet communications as we (as Amateurs) in packet communications are up to Level II of the communications mod-el (according to the International Standards Organization for Open System Interconnect). This article has been sort of 'heavy' but I wanted to give those wondering where Packet is going - a glimpse of what some researchers are looking at and really testing.The credits and references given by this article are: IEEE publications, ARRL, Int. J. Mini Micro Compute and TAPR.

There were 12 references and the majority were ARRL, IEEE, and TAPR. A. Giordano, is a Research Fellow in Computer Science at the University of Genoa in the Department of Com-munications, Computer and Systems Science (DIST), University of Genoa, Italy. His call is I1TD. He is one of the three authors of this IEEE Journal article.

DE Joel, K9TBD

THE GOPHER'S LAMENT

Submitted by Anne, KO3M

Out back in my garden
My garden once neat,
There burrowed a gopher
For something to eat.

He ate through my roses,
He ate my sweet peas,
He nibbled the guys off
My inverted VEE!

I put on my thinker;
I thought very hard
Of some way to drive him
Back out of the yard.

He came up for air once,
'Twas like a bad dream,
As into his hole slid
My 8 band stacked beam.

The gopher lamented,
'What else can I do?
If I had a rig, then
The rag I could chew.'
I thought of my rose bush,
I thought of my rig,
A noble decision,
I'll do something big!

I shoved in my Dentron,
I shoved in my Swan,
I plugged in the line cord
And turned it all on.

A moment of silence, then
I'll need the mike too,'
And then from that hole
Came a gopher CQ.

He dahed it on 40,
He ditt it on 10,
I prayed for a Wouff Hong
To end it, AMEN !

Out back in my garden
My roses now bloom,
But inside my house, OH !
There ain't any room.

The staggering Postman
And I live in Hell's
Of hauling that gopher's
DX QSL'S
So if you've a gopher
Don't heed this lament,
Just pour in the nitro
And tons of cement!

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FOR SALE

Clegg FM28, 25 watt 2 meter rig. Contact W3PYF.....$125.00

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VE TESTING REPORT

According to Don KC3II, at the March 4th session of VE testing at the Greystone Building, there were 14 candidates. Of this group 8 were upgraded and 1 received credit for one element.

Club Members who upgraded were:

Chris KD3GW to Extra
Dave KA3UAQ to Technician

Don reports that he has openings on the VE teams for Extra Class License holders. All VE's must be cetified by the ARRL. If interested, contact him at 215 252-5696..

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WHO OR WHAT DO YOU LIKE?

What do you like or dislike in the club newsletter?

As editor of this newsletter, I would like to be sure you like what I am putting in it. Please do not hold back, drop me a note, either signed or unsigned and let me know.

Do you like the format?
Do you like the NQ3D Report?
Do you like the DX page?
Do you like the Prez letter?
Do you like the Digital Column?
Do you like the Ima Lid Column?
Do you like the Yankee Doodlings?

I could go on and on..How about a note letting me know..73 W3PYF editor.

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MONGOLIA - JT1BG is invariably on 28,535-545 KHz from 0100 UTC. Frequently, he follows with a list-operation near 14,198 KHz at about 0300 UTC. QSL to Bator's '89 CBA. ... JT1BR on 21,030-035 KHz nightly from 0100 UTC. QSL via Buro.

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N. COOK I. - 15-20 March. ZL1AMO will probably append ZK1/ with cw and ssb on 10, 15 and 20m. QSL to Ron's CBA.

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NORFOLK I. - If his 14,222 KHz Net is too late for you, catch Jim near 28,530 KHz during his frequent skeds around 0030 UTC. QSL to his CBA.

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SENEGAL - 6W7OG on 28,555-560 KHz from 1900 UTC. QSL via F2YT. ... 6W6NJ on 21,285 KHz from 2100 UTC, announces his skeds on other bands. QSL via N5GAP.

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SIBERIA - 1-12 April. Advance info. Commemorating the joint US/USSR rescue of the crew of the ship Cheluskin in the early '30s, a joint US/Soviet DXpedition on Ayon Island will sign US/SU with cw and ssb on 10-160. Led by UAØKK, the US-team will include AA4VK, KC4EBX, W4MQB, AB6Q, W6MKB and possibly others in a precedent-setting use of their own callsigns prefixed by UØK/. Terry, W6MKD is scheduled to give a presentation of this unique adventure at the Dayton and Visalia Conventions.

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SOMALIA - T5GG on 21,310-315 KHz daily from 1930 UTC. QSL via I2MQP.

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THE GAMBIA - A sudden surge of activity has C56/G3SXW on cw at the extreme low end of 80m from 0100 UTC and C56/G3TXF near 21,025 KHz at about the same time. QSL both to their home CBAs.

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TONGA - A35DX on 28,495 KHz from about 1900 UTC. During pileups, he listens-up 5 to 10 KHz. QSL via DF2UU. ... YL Hilda, A35UF, often joins the foregoing party to add to your score in the '89 YL Award. QSL to her home call, DL5UF.

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N. YEMEN - 4WØPA, Hans, an M.D., has been assigned to 7O for two months. (He does not expect to obtain a 7O-license). Upon his return to 4W, he will attend classes for a month or two to learn the Arabic language. His QSL Manager, PA3CXC, has applied for a 4W-license (or permission to be 2nd op at 4WØPA), to apply his technical skills in improving Hans' station equipment and antennas.

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RHODES - SV5TS likes 28,520-525 KHz from 1530 UTC. QSL Vasilis to his '89 CBA.

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MARSHALL IS. - KX6DX alternates between 28,030 and 28,530 KHz from 2000 UTC. QSL via the Alabama DX Club, P.O. Box 4563, Huntsville, AL 35815. ... KX6HE near 28,035 KHz from 2130 UTC. QSL via K2CL. ... KX6BU on 21,340-345 KHz from 0100 UTC. QSL to his CBA.

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FAROE IS. - OY9JD likes 28,575 KHz around 1900 UTC. QSL Jon to his '89 CBA.

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FRANZ JOSEF LAND - UV3CC/UA1P has an outstanding signal near 28,502 KHz most days from 2100 UTC (sometimes an hour earlier). QSL via Box 88, Moscow.

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JAN MAYEN I. - Next week, JX1UG will relocate his QTH to the west of the mountain that has been restricting his signal-path to North America. QSL via LA5NM.

DLARC Proposed BUDGET

Showing total '88, '89 to-date, & '89 Budget

INCOME	FY 88	89 Y-T-D	Σ 89 EST.
Dues	$2688.00	$2328.00	**$2700.00**
ARRL Dues Collection	$617.00	$424.00	**$650.00**
ARRL Commissions	$11.00	$0.00	**??**
Interest	$109.77	$51.86	**$130.00**
50/50 Income	$293.00	$0.00	**$300.00**
Miscellaneous	$45.00	$0.75	**$25.00**
Project Income	$966.00	$2403.00	**$2403.00**
Banquet/Party	$880.75	$800.00	**$1700.00**
BOOK SALES	$0.00	$0.00	**$414.00**
NEWSLETTER ADS	$0.00	$0.00	**$150.00**
Donations	$86.00	$30.00	**$50.00**
TOTAL INCOME	$5696.52	$6037.61	**$8522.00**
EXPENSES			
Newsletter Printing	$858.60	$286.20	**$880.00**
N.letter Postage/Labels	$746.23	$300.00	**$840.00**
Telephone	$406.25	$143.32	**$430.00**
ARRL Membership	$575.00	$394.00	**$598.00**
Admin. Postage	$66.00	$103.72	**$155.00**
50/50 prizes	$85.11	$0.00	**$120.00**
Banquet/Party/picnic	$1155.22	$795.31	**$1600.00**
Field Day	$281.52	$0.00	**$300.00**
PA Qso Party	$91.24	$0.00	**$100.00**
MAINTENANCE RESERVE	$0.00	$0.00	**$300.00**
New Equipment	$152.90	$0.00	**???**
Sympathy	$46.50	$0.00	**$100.00**
BOOK PURCHASES	$0.00	$0.00	**$350.00**
Legal Expenses	$950.00	$0.00	**$0.00**
PROGRAM EXPENSE			**$50.00**
Project Exp.		$514.94	**$515.00**
Miscellaneous	$53.84	$22.96	**$150.00**
TOTAL EXPENSES	$5468.41	$2560.45	**$6488.00**
TO BE ALLOCATED =			**$2034.00**

BUDGET 1989

On March 9th the DLARC Board of Directors meet to consider a budget for the club for the rest of 1989. Shown to the left is the proposed budget.

INCOME On the income side we show the money we have received and the money we expect to get during the rest of the year. Some kinds of income are NEW, while others are the familiar dues, project income, etc. We plan to make a few dollars this year by selling books to the novice class (Tune in the World...), and by running some ads in our newsletter. Sammons Cable and Hamtronics have expressed and interest in advertising here and the first Sammons ad is in this issue.

EXPENSES We planned a few new items in this year's budget for expenses, too. First, we set-aside some "rainy day" money for repairs and maintenance for things like the club repeaters and club owned equipment. We were lucky last year and didn't have big repair bills but some year we'll need a new PA tube for the repeater or a new Stationmaster, or whatever. Secondly, we budgeted money for book purchases--those books we plan to sell to students in our Novice classes. [A big reason we plan to sell books is as a convenience for students; in the past it has taken weeks for the students to get books.]

TO BE ALLOCATED After all of this planning, we still have over $2000. It's up to all of us to decide what we want to do with it. It's time for your ideas! Should we upgrade the 440 MHz repeater, or add a 220 MHz repeater? Do we need a club TS940 Transceiver? How about Safety Vests(Orange) for club Public Service projects? What about a 2M/440 transceiver which can operate full duplex and serve as a portable "booster" into W3OK/R for HT's in bad locations during Public Service projects? Should the W3OK station have packet? Think about what you think your club should have, then sound off. You can mention it at a meeting, tell one of the officers, or just send a note to the club (or to the president) with your ideas. Try to be specific, if you can. Mention: what it is you recommend, how we'll use it, how much it will cost, and what specific model, color, shape & size you like. Of course, we can have one super summer picnic, too, but all we'll have to show for it, afterward, is indigestion!

SUMMER PICNIC KU3K has suggested a club auction at the DLARC summer picnic at Hackett's Park, sort of a club hamfest. So far, everone likes the idea. The date will be early August; watch for it. FLEMINGTON HAMFEST, one of my favorites is scheduled for Saturday, April 15 at the Hunterdon (County) Regional H.S. at Flemington, N.J. It's just a block off Route 31, easy to find. CU there. 30

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 145.11 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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1989

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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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THE DELAWARE-LEHIGH AMATEUR RADIO CLUB, INC.

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