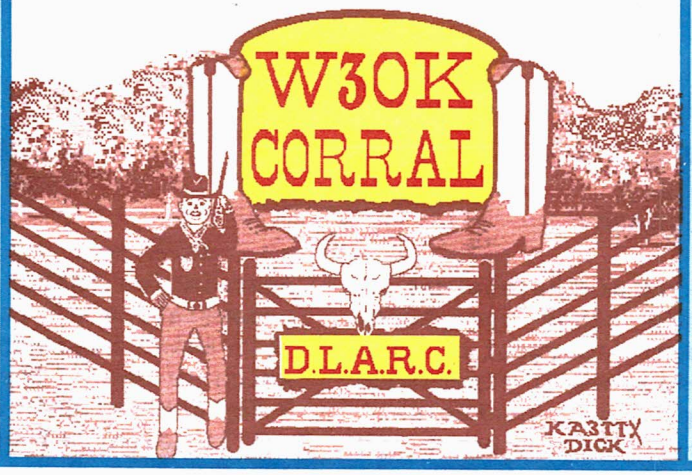
DELAWARE-LEHIGH AMATEUR RADIO CLUB, INC. W3OK

June 1992

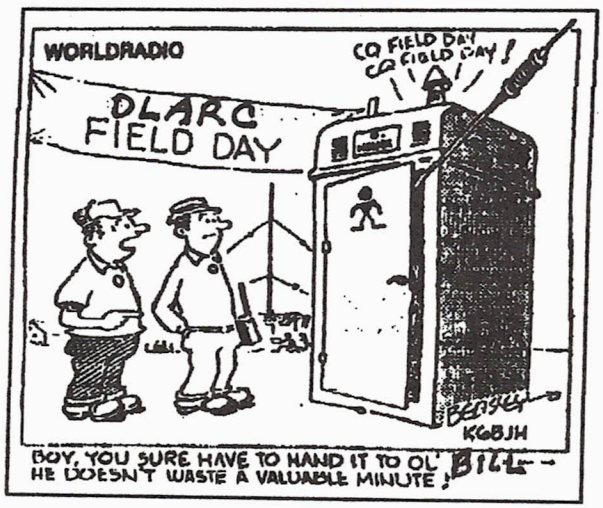


SPECIAL SERVICE CLUB
ARRL Affiliated Club

FIELD DAY JUNE ~~21~~ 27st & ~~22~~ 28nd

ARRL FIELD DAY 1992
HACKETTS PARK EASTON
by Bob, KU3K, Field Day Chairman

As I have written many times, FIELD DAY is my favorite ham radio operating event. It combines teamwork in setup and operation of amateur radio stations under simulated emergency conditions. The atmosphere is "high-



tech picnic" where young and old, novice and experienced can enjoy each others company for an entire weekend. It may not be for everybody, but if you simply come out and observe..you'll learn how well the DLARC and similar clubs across America are "prepared to the limit" for any communications emergency!

Commercial broadcast stations test the EBS (Emergency Broadcast System) on a weekly basis. The EBS has as its basis "voluntary" cooperation by commercial stations. It would be interesting to find out if stations who did not volunteer membership would have "trouble" when license renewal time rolled around!!

As amateur operators, we have a responsibility to provide emergency communication whenever and wherever it is needed. FIELD DAY is part of ham radios EBS test!

This year our setup will again include 4 transmitters operating simultaneously and I have the necessary volunteers to act as "team captains" for each of the 4 positions. These captains have taken it upon themselves to provide a turnkey operation, making my life much easier. This system came under fire last year when some people thought it meant a "closed shop" for operating positions. Nothing is farther from the truth...in fact if you want to operate all you need do is contact any team captian and schedule yourself!! (We are always particularly "LEAN" during the overnight shift!) Operators are needed for 24 hours times 4 transmitters which equals 96 man-hours! Of course this does not include setup and teardown, however DLARC should be proud of the fact that we have always had plenty of help during these times! Captains will be announced at the June DLARC meeting.

Is FIELD DAY a contest? Well...the scores ARE published in QST and...correct me if I'm wrong...the DLARC membership likes to see our score near the top of our class!

That means we are in competition and the only way to make it happen is "go for it!" I'm looking forward to seeing YOU there!

THE SCHEDULE:

SATURDAY	*8AM*	*GRACEDALE (LOAD TRUCK)*
SATURDAY	*9AM*	*HACKETTS PARK (FD SITE)*
SATURDAY	*2PM*	*OPERATION BEGINS*
SUNDAY	*2PM*	*OPERATION ENDS*
SUNDAY	*2PM*	*TEARDOWN AND HOME TO BED*

DLARC CLUB MEETING
JUNE 4th NCACC THEATER

IN PRAISE OF FAMOUS MEN

by Robin WA3T
President DLARC

Our club is justly proud of the stature of its senior members: world class operators, technical experts, and, most important of all, our "elder statesmen" whose years of experience and public service add up to many centuries.

We are proud of the well-deserved honor the ARRL recently bestowed on Clarence, W3PYF. It is hard to imagine that anyone, anywhere in this country or the world, could have given more of himself to the public service aspects of ham radio. Clarence's achievements, spanning a period of more than 45 years, were set down by K3ANS in the nomination papers he submitted to the ARRL. I was privileged to read them recently. We all have some idea of what Clarence has done for the public and for us as individuals and as a club, but to see his history as a ham summarized on several pages of close-spaced typing was mind-boggling: it was as if several hundred energetic and enthusiastic hams had combined their accomplishments into one resume.

Clarence, we are proud of you, and grateful for your presence among us. In a recent article, you labeled yourself "The Old Grouch". Old Grouch? Maybe, sometimes, and so are we all.

But "Grand Old Ham"? That you always are, and always will be!

Another of our senior statesmen is Ray, W3TDF, our immediate past president. Ray's enthusiasm has infected us all, as year after year he has boosted the PA QSO Party. Almost singlehandedly, he inspired a high percentage of us to take part; even those of us who don't normally go out for contests. The club has gained from this, through the closeness that comes with working together towards a common goal. We have gained as individuals, too, sharpening our operating skills in the quick exchanges and pile-ups. Each year, Ray has gone to "rare" counties, the better to rack up a good score for the club, and to improve everyone's chance of making a "clean sweep" of the counties. In the 1991 Party, he dominated Green County, and now holds the record score in four counties. More recently, in the ARRL Sweepstakes, Ray won honors as top DLARC scorer in both phone and CW categories. Congratulations, Ray, and thanks from all of us. We promise to support you more strongly than ever in October 1992!

AN AWARD FOR W3PYF

by Van K3CP

Each year the Rochester Amateur Radio Association (RARA) of Rochester, NY makes a presentation of its "Grand Ole Ham" award. This award is presented at its annual banquet which is one of the highlight events of its 3 day Hamfest and Computer show. The recipient is selected from the Atlantic Division of the American Radio Relay League. The banquet was held at Hamfest Headquarters which was the Rochester Marriott Inn. This outstanding Hamfest is held in combination with the Atlantic Division/ New York State ARRL Convention.

To be eligible for this event, a Ham must be over 50 years of age and a Ham for thirty or more years. The award for this year was presented to Clarence Snyder - W3PYF. The award was presented by Hugh A. Turnbull - W3ABC, the ARRL director for the Atlantic Division. In making the presentation, Hugh said the committee selected W3PYF for his many years of dedicated service to the community and to Ham Radio and for the unselfish giving of his time and talents to a long list of organizations, including the ARRL, the DLARC and county and city groups. The inscription on the plaque is as follows:-

"Grand Ole Ham"
Awarded to
Clarence Snyder
For a lifetime of Service
to the Amateur Fraternity
Rochester Hamfest
May 16, 1992

In accepting the award, Clarence thanked the committee for selecting him for this honor and gave credit to his XYL, Sylvia, for her support over the last fifty one years.

I am certain that I speak for the members of the DLARC when I add my congratulations and thanks to Clarence for all that he has done for Amateur Radio and the DLARC. Well done, OM.

de Van, K3CP



JOIN THE ARRL, IT NOT JUST A SUBSCRIPTION TO A MAGAZINE
It is our survival

JUNE MEETING
Antenna Modeling and what it is!
by Bill K3ANS

Are you competitive? Are you last in the pile up? Does the DX station hear you Were you satisfied with the new antenna out of the box? Have you tried improve the manufactured antenna? Do you design your own? Did you know many manufactured yagis are designed for maximum band width, not best front to back ratio to maximum forward gain? Does your antenna radiate low or high angle? Does the best lobe clear the nearby hill? How much of your signal is wasted to e sides? to the sky? to the ground?

Ever since the development of NEC main frame computer program, engineers have be modeling their antenna designs on the screen before construction. Old reliable antennas were developed in the field, but they were not necessarily the best.NEC ve Hygain, Cushcraft, Mosley, DX Engineering, etc all the opportunity to make improvements without spending many dollars in construction and field testing.

Then along came the scaled down versions to run on personal computers. Many DLARC members are using Yagi Nec, Elnec, Yagi Optimizer, YO 4, MN 4.0, NEC for Y 0, etc. They have allowed amateurs to improve commercial designs.

Suppose you stacked two, three, or four similar yagis on the same tower. How high should each be? How should you phase them? How far apart should they be space How much separation between elements? How many elements? How long should the boom be?

What about your wire antennas? Have you tried a wire beam? Where does your dipole radiate? What pattern does your sloper on the side of the house or tower ave? Why didn't it tune properly.

Here comes N3RS to the rescue. Ron Sigismonti of Glenmoore, PA and a member of e Frankford Radio Club (Best contest and DX club in the world) has developed an elaborate antenna farm and contest station using these inexpensive programs.

Come to the June 4, 1992 meeting of the Delaware-Lehigh Amateur Radio Club, Inc. hear this fantastic presentation. Bring your tape recorders and video recorder Save this lecture for future classes of novices, generals, advanced, and extras I have heard it twice before and always learn more from him.

NW3B operating the N3RS contest station won first place in the PA QSO Party, October, 1991. N3RS has improved on the factory designs of his Cushcraft antennas.an made bigger signals. A db here and a db there add up to S units and winning signals. (PS K3ANS came in second, also using these antenna programs). K3OO, K3NZ, WB2P, KY3N, KU3X, and other serious contesters in DLARC and FRC use these programs win DX contests. Now you will learn their secrets for free in one easy lesson June 4, 1992 at 7:30 PM in the Theater at the Northampton Community College, between Easton and Bethlehem, PA. Talk in on 146.70 mhz, W3OK/R. Don't miss this treat!

de Bill, K3ANS,
DLARC program chairman >>

Results of DLARC Golf Tourney
by Ray, W3TDF

The DLARC (Golf) Open, only had 5 DLARCers participating. There were quite a few others who would have attended, but had prior commitments. Hopefully the Fall event will have a much better turnout. K3OO posted the best score, followed by K3NZ, KA3YXB, NU3L and yours truly. Scores were higher than usual for all concerned due to poor course conditions as a result of all the rain the day and night before. Best Wishes de W3TDF.
Editors note: Please note that there were no scores posted. Wonder why

ARRL NEWS BRIEFS
from the ARRL Newsletter

*The FCC has granted the Voice of America Amateur Radio Club station in Washington, D.C. the call sign K3VOA. Although specific call signs for amateur stations have not been available for more than a decade (FCC Rule 97.17f), FCC Chairman Alfred Sikes made an exception for the Voice of America club in this, the 50th anniversary year of the VOA. The license was issued May 7, replacing K3EKA as the club's call sign.

*Effective June 1 W1AW will discontinue its Monday morning code practice and bulletins. Beginning on that date Monday transmissions will commence at 2000 UTC. The change is to allow time for increased routine maintenance and performance testing of station facilities.

IMA LIDD

Diodes Part 5

by Van, K3CP

"Hello, Elmer," said Ima Lidd. "Nice to see you today. I wonder if I could select the topic for today's talk?"

"Hi, Ima," replied Elmer. "Yes, of course you may. What is it that you would like to discuss?"

"I would like to ask you about diodes that are used as variable capacitors. How do they differ from common solid state diodes and how do they work?"

"All right, Ima. Do you remember that solid state diodes consist of P type and N type silicon? One half of the diode is silicon that has an excess of electrons and the other half has an excess of holes. A hole is what remains after an electron moves away and since it is void of electrons it behaves as a positive carrier. Do you understand so far, Ima?"

"Yes, I do," said Ima. "The carriers conduct current and are electrons and/or holes."

"Yes, that's correct. Look at Figure 1. Notice that one half of the diode contains electrons as indicated by the minus signs. The other half of the diode contains holes as shown by the plus signs. When a positive bias is applied to the P type end and a negative bias is put on the N type end, the carriers will begin to move. The electrons will cross the junction from the N type end toward the positive end. At the same time the holes will flow through the junction toward the negative charge. This condition is known as forward bias and current will flow as a result."

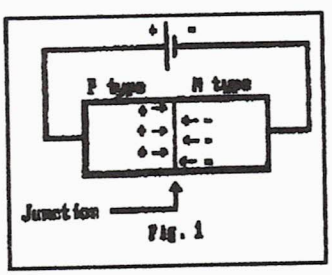


Fig. 1

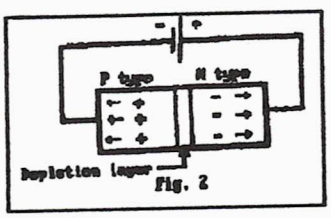


Fig. 2

"I see," interrupted Ima. "When the polarity of the bias voltage is reversed the current will cease flowing."

"Yes", said Elmer, "but what is more important is that the area adjacent to the junction now becomes void (depleted) of carriers. Take a look at Figure 2. This is true of all solid state diodes, but in the case of the varicap or varactor design as these devices are called, the manufacturer processes them in such a way as to enhance this action. Do you understand, Ima?"

"Yes, I do, Elmer. The depletion layer being void of carriers behaves the same as an insulator."

"OK, this depletion layer now serves as a dielectric. We now have two conductors separated by an insulator. This forms a capacitor. As we increase the bias the depletion layer becomes wider and as we decrease it the layer becomes narrower. This, of course, varies the capacitance of the device."

"What ranges of capacitance are possible, Elmer?", asked Ima. "How much voltage is necessary?"

"Varicap diodes are available in capacities from a few pico farads to 100 pico farads. A typical diode covers 10 to 40 pico farads with a voltage swing of zero to 20 volts. Figure three shows a practical circuit. D1 and D2 are two varicap diodes and along with L1 comprise a parallel tuned circuit. R 1 is an isolation resistor. It could be replaced with an RF choke of appropriate value. R2 is a potentiometer used to vary the voltage on the varicaps. With the proper selection of values it is possible to tune the desired frequency."

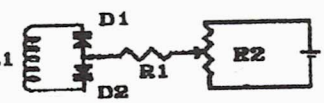


Fig. 3

"That sounds like a very nice way to tune a circuit, "said Ima. "Is it a useful arrangement for HF and VHF bands?"

"Oh, yes," said Elmer. "You can use varicaps just about any place you would use a mechanical variable capacitor in the 3 to 100 pico farad range. Of course, you can't cover that range with one varicap. Varactor diodes are very useful when you are designing circuits in the UHF range. They then take the form of surface mount devices and reduce the inductance caused by long leads. Any questions, Ima?"

"No, I have a pretty good understanding how they work. I will do a little studying on my own. Thanks, Elmer."

"You're welcome. It's a good idea to do some reading. It's also a good idea to discuss this and other subjects with other hams. See you next time."

LUNG ASSOCIATION BIKEATON
by KU3K

Through the kindness of some wonderful volunteers, our club has once again provided a much needed public service. The local office of the American Lung Association ran the first annual "Clean Air" bike ride. The fundraising event took place on May 2nd and was attended by over 100 riders. DLARC provided a vital communications link via our 146.70 repeater. I was constantly reminded by several Lung Association personel, how much they appreciated our being there. In addition, they were quite impressed with our level of expertise.

Will the following please RISE:

KA3MOU Dick
KA3TEQ Carl
MARCIA (Carl's wife)
KC3CR Dick
KB3RI Bob
KE3AW Bob

YOUR APPLAUSE PLEASE !!!

Thanks also to N3IYX, Ken who stopped by to say hello and offered to help. These folks make it all worth while!

de Bob, KU3K

JUST THE MINUTES
by Dave, N3EYT, Secretary

The May 7 meeting of the DLARC was called to order at 7:33pm by Robin, WA3T. Eighty-four friends and members attended the meeting held in the theater on the NCACC campus.

The minutes of the April meeting were approved as printed in the W3OK Corral.

KA3MOU, Dick presented the treasurer's report and stated a balance in the club's savings account as of April 30 to be $5976.62.

The DLARC would like to welcome the following new members:

N2NIE, Mark Flynn;
KA3ZBA, Richard Brandel;
AI7D, Jeff Porter
John Daniels, call pending.

The August 16 Hamfest planning is well underway, reports Bob, WF3H. Some Board of Directors members visited the hamfest site and talks with Plainfield township supervisors were fruitful. Contact WF3H to volunteer some time for the hamfest. Barry, KU3X, announced that the culb station is back in full operation with new traps in the antenna. Ultraviolet exposure did the old ones in. Bill, K3ANS, announced the winner of the Grand Old Ham award - our own W3PYF, Clarence Snyder! Congratulations OM. Clarence will travel to the Rochester hamfest in May to claim his award.

Novice classes end this May with several hopeful candidates for Novice/Technician licensing, reports Chris, NU3L. A new class is in the works. Our September club meeting will feature a program on an introduction to personal computers.

A regularly scheduled class will follow on various aspects to personal computing. What are your interests/needs in the area of personal computers? Let Chris know so he can plan the course content to match our needs. Other upcoming club programs:

June- N3RS on antenna design and computer modeling programs for antenna design.

July- NT2X speaking a Soviet ex-patriot, DX-peditions around the world.

August- Lightning and EMF protection.

Bob Kratz, KU3K reminded us that Field Day actually comes before our hamfest. He is looking for a food coordinator and one station coordinator. A trailor or camper for a station site is also needed. If you can volunteer some time please contact Bob, KU3K. Amy, KD3TI, put out a call help communication volunteers for the MS PA Dutch Bike-A-Thon on June 13-14. Yes, this will be an overnight commitment with food and lodging provided. Please contact Amy or Bob, KA3ZGM for details.

Ray, W3TDF reviewed the revised DLARC constitution and by-laws as printed in the W3OK Corral. Bill, K3ANS moved to table the motion to adopt the new constitution and by-laws until the next club meeting. The motion was seconded and passed. Voting will be conducted at the next meeting.

Barry, KU3X gave a very moving program on low band mobile antennas.

de Dave, N3EYT

REMEMBER!! RENEW OR JOIN YOUR ARRL
SEND YOUR APPLICATION TO
KA3MOU, DICK DECH

WHAT IS CLOVER?
by Bob,WF3H

When I was in Dayton recently, I read an article in the May issue of CQ magazine by Bill Henry (K9GWT), and Ray Petit (W7GHM) of HAL Corp. on a fairly new digital mode called Clover. The name is derived from the pattern it used to make on oscilloscopes during the initial development phase. Clover is a digital communications mode specifically designed to overcome the HF limitations of packet (very slow data exchange due to propagation), and Amtor (not ASCII compatible; slow data rates).

Clover uses Phase Shift Keying (PSK) and Amplitude Shift Keying (ASK) to significantly increase the rate of data transfer over the two tone signals generated by Packet and Amtor. In addition, by using a "Reed-Solomon" algorithm (don't ask me what the specifics on that are!), and a check sum (like packet), the receiving station is able to recover data that has been scrambled by propagation without going back to the sending station for a retransmission. Clover also has the ability to speed up or slow down the sending speed automatically depending on propagation. The key factor in the success of this mode has been in the use of Digital Signal Processing (like that used in very modern receivers).

These chips are now very expensive, and HAL's Clover board costs about $1000, although this should come down with increased production. Actual on air tests indicate that under marginal conditions, Clover is about 10 times faster than Amtor or Packet. Under ideal conditions, it is about 50 to 100 times faster!

I had the chance to talk to Ray Petit for about 3 hours or so at Dayton,. and sincerely believe that, if the cost problems can be resolved, Clover could make Amtor and Packet obsolete for HF.

There is another technology (Pactor) which is a competitor, but the two can be combined for even faster speeds. This is the coming technology and should revolutionize HF digital communications very quickly.

de Bob, WF3H

FOR DLARC INFORMATION

620-9110

CALL FOR CLUB NEWS

WALK-A-THON PARTICIPANTS
by Clarence, W3PYF

Ten members of the Delaware Lehigh Amateur Radio Club participated in communications for the March of Dimes WalkAmerica in the Easton area on Saturday, April 25th. Communications through W3OK was solid over the entire route.

The following members participated:

KB2ANG, Greg; N2MWQ, John; KA3CGM, Bob; NOKIA, Paul; N3IGA, John; KA3YEB, Adrienne; KA3WSL, Earl, KD3SQ, Charles; KE3AW, Bob, and W3PYF, Clarence.

** CONTEST CALENDAR **
by Barry, KU3X

June 7	Portugal Day Contest
June 9	W1AW Qualifying Run 10-40 WPM
June 13-15	ARRL June VHF QSO Party
June 20-21	All Asia DX Contest, CW
June 23	W1AW Qualifying Run 10-35 WPM
June 27-28	*** FIELD DAY ***

CONTEST TIPS #1

Filter selection: SSB = 2.1 khz or 1.8 khz filter is in order. CW = 500 hz filter if you are trying to run stations. Use a 250 hz filter if you just trying to pick stations off, as you run your VFO up and down the band. If you try to run stations with a narrow filter, you better be using your RIT control because a lot of stations calling you will be out of your passband. Narrow filters are great for CW work but you better know what to expect when you use them.

de Barry, KU3X

FOR SALE

Heath Relay SBA-1400-S NEW $14.00
Following mikes for sale will fit TS-520
MC-50 With Stand $30.00
Astatic 10-C with Stand $10.00
Stromberg Carlson Mike and Stand $8.00
Power Supply for memory unit for TS660 12.00
Call Charlie, K3BCV at 432-2805

CLUB ANTENNA BACK UP

Thanks to Barry, KU3X and Paul KA3MTY, the all band antenna is back up at the Greystone Buliding. Barry, completely rebuilt and it is reported to be working great.

Lee LaRose N3KWO



Lee a new member of DLARC, who received his call and license in our classes, died recently.

Lee, 46 years old was an active boater and was a Past Commander of the Delhigh Power Squadron. In addition to his boating activities he enjoyed photography and electronics.

He built his own 2 meter transceiver and packet modem and used that to fill his time in between his boating activities.

He is survived by his wife Sharon and his parents, Clarence and Arlene LaRose of Macungie.

73 and RIP Lee, de Clarence, W3PYF

FCC LEVIES FINES

The FCC has begun what is expected to be a wave of enforcement actions. Several hundred cases are reported to have been on hold awaiting the granting of authority to the Commission's various bureaus to levy higher monetary fines. That authority, granted April 15, raised the maximum fine that can be levied without approval by the commissioners themselves to 20,000 dollars. Thus far only a handful of actions have involved amateurs.

On April 24, 1992, the FCC issued three Notices of Apparent Liability affecting Amateur Radio. David Plourde, N1IZR, a Technician class licensee in Lewiston, Maine, was issued an NAL for 10,000 dollars, for using non-type accepted equipment to transmit in the Citizen's Band. Also on April 24, a non-amateur in Tampa, Florida, was issued an 8,000 dollar NAL for transmitting on the Amateur 40-meter band. On the same day Donald Bishop, NOEA, an Amateur Extra Class licensee, was issued an NAL for 10,000 dollars for transmitting from a mobile installation on frequencies near 7420 and 15050 kHz.

Finally, also on April 24, the Private Radio Bureau's Special Services Division issued the first Order to Show Cause and Suspension Order to amateurs in several years as the result of an investigation into volunteer examiner practices. Charles P. Pascal, WB6CIY, and Sandra V. Crane, N6TF both Amateur Extra Class licensees, have been ordered to show cause why their Amateur operator licenses should not be suspended and their station licenses revoked. These orders are the result of an FCC probe into volunteer examinations given in August and September, 1991 by Pascal and Crane.

from ARRL Bulletin 37

CHANGES AND ADDITIONS TO THE CONSTITUTION & BY LAWS

by Ray, W3TDF, for the constitution committee

In addition to the proposed Constitution and By-Laws proposal as presented in last months OK-Corral, please note the following additions:-

ARTICLE III (Membership), Section 3(d) after the word 'candidacy' ADD - otherwise, can attain voting rights and officer/director candidacy by making application as covered in Section 1 above, and paying initiation fee and ONE(1) years dues.

ADD new Article as follows:-

ARTICLE XII - SUSPENSION-EXPULSION

Section 1. Any member may be brought up on charges for, but not limited to, violations of these By-Laws, or any club rules or policies, or FCC rules and regulations, or any conduct which may be determined by the Executive Committee to be detrimental to this club or to amateur radio.

Section 2. The charged member shall be notified, in writing, stating the charges, and given the date of the Executive committee meeting that the said charges and determinations will be addressed. The charged member may present in person, or in writing, such facts, testimony and/or witnesses as may be necessary, to refute said charges.

Section 3. The decision of the Executive Committee shall be sent to the charged member by Registered Mail, and, in the case of expulsion, shall be reported to the membership at the next following regular meeting.

Section 4. An expulsion decision by the Executive Committee may be appealed to the membership at a regularly scheduled meeting within 60 days of notification.

For the Constitution and By-Laws committee

Ray. W3TDF

WB8ZJL'S TOP TEN REASONS WHY A HAM WOULD BE A LOUSY PRESIDENT OF THE UNITED STATES

Courtesy of Chuck, N3LAI

10. Adds 23 more stars to the American flag, bringing the total to 73.
9. Replaces the phrase "CQ" with "YO!". (I'm sorry, that's why M.C. Hammer would make a lousy ham.)
8. Orders that handie talkies be carved into the rock on Mount Rushmore.
7. Has the dome of the Capital Building inverted, uses it as personal TVRO dish.
6. Will not allow "tech-lites" to hold public office.
5. Secret Service men keep getting skewered on all the antennae on the presidential limo.
4. Sends Yeltsin his mail via Box 88.
3. Annoys Congress by saying he's busy in the basement of the White House, working on a "project."
2. Ends every other sentence with "QSL?".
1. In the middle of the State of the Union address, starts complaining how rotten 10 meters has been lately.

****

DO YOU OWN A PAGER?

We have received information regarding a pager scam taking place, and you may want to be aware of what it is and how it works.

If a pager owner/user gets a page with the phone number (212) 540-XXXX (where XXXX can be any four numbers)...DO NOT CALL THIS NUMBER.

As you know, 212 is the area code for New York City, but the 540 exchange acts the same way as a 1-900 number, where the phone from which you are calling is automatically billed. The fee for calling these 540 numbers is $55!

The people with these numbers are calling around the country and inserting these numbers into pagers so the individual will call; the fee is then collected. If you have a pager, please beware.

TNX Trevor KK6DO via "the Q-Fiver,"
Printed in "Radio Fun," March 1992



HAMFEST UPDATE

by Bob, WF3H, Chairman

We are getting down to the homestretch on Hamfest planning. Recently a number of the board members and I met with the Plainfield township commissioners to discuss the set up of the hamfest. They were very enthusiatic and encouraged us to proceed, offering whatever help they could.

We will soon have a meeting with the Farm organization chairperson to get specific recommendations from her on the best way to tailor the site for our plans. Volunteers are still needed for parking/security detail, and those interested are asked to contact Dave, N3HQE. Bill, K3ANS and I also handed out several thousand flyers at Dayton, and there was much interest shown on the part of Eastern region vendors and tailgaters. We are getting close, so all offers of assistance are welcome.

de Bob, WF3H.

VE TESTING MAY 8
NEXT SESSION JUNE 5th

by John, WX3C

At the May 8th VE session at Gracedale, 19 candidates took a total of 34 elements.- There were 6 up-grades , 4 new Tech's and one new Novice. These included:

Christopher P Loughman, new Tech-HF;
Stephen J Schrack, new Tech-HF;
Richard H Smith Jr. new Tech;
Bruce B Barton, new Tech;
Melinda S Lamond, new Tech;
Philip A Leone, N3KWN Tech-HF;
Michael J Geirsson, Novice;
Edward F Kita, Tech;
Barry R Smith, N2PCT General;
William J McConnell, N3KPG, Advanced;
David J Kylen, N3LBF, Advanced.

The VE's at this session were Robin, WA3T; Bob, WF3H; Bill, NC3P and John, WX3T.
The session for June 5th will have team 2 attending. That's all for now. And congratulations on your prestigious award. Good Luck.

73 de John, WX3T.

REMEMBER! JOIN OR RENEW YOUR ARRL MEMBERSHIP BY CALLING DICK, KA3MOU

DIGITAL COMMUNICATIONS

by Joel, K9TBD

Serial and Parallel Interface

RS-232 is bit serial and Centronix is bit parallel communications: Serial means that the bits are sent in sequence (usually least significant bit first) and Parallel means that all data bits (usually 8) are available all at the same time. Each requires some sort of 'handshake' between the sender and receiver of a message (byte - 8 bits, or less).

Serial communications uses special pulses called (start and stop) to delimit a character, whereas parallel communications uses dedicated control lines to synchronize the transmitting end and receiving end of the communications link. To test these signals you may use a standard VOM - but slow down the BAUD rate to 110 if you wish to see Rx and Tx on RS-232. Typical PC's use an 8250 UART for serial communications control.

RS-232 is an old standard. It usually is not implemented in all of the ways that were invisioned originally. That leads to confusion. Basic communications using RS-232 requires only three signals: Rx, Tx, and Return. These are pins 2,3,7 respectively. Signal names are taken from the starting end - the DTE (data terminal equipment) end as opposed to the DCE (data communicating equipment - MODEM) end. Other signals are used for handshaking and include DTR (data terminal ready), DSR (data set ready), CTS (clear to send), RTS (request to send), RI (ring indicator), CD (DCD) (carrier detect or data carrier detect).

A confusing part of the RS-232 standard is that the Rx and Tx (receive and transmit) signals use 'up-side-down-logic' in that a plus signal is considered a "0", "space", "start", "off", "false", "positive", "lo", "perforation", or "reset", and a minus signal is considered a "1", "mark", "stop", "on", "true", "negative", "hi", "no perforation", or set"; whereas all the rest of the RS-232 signals are 'right-side-up'. In other words, Request-To-Send is a plus signal if RTS is asserted.

The signal levels for RS-232 are: +5 to +15 VDC for a "space" and -5 to -15 for a "mark" (false, true) for the sender and they are +3 to +15 and -3 to -15 VDC respectively for the receiver. Why the 'dead-band'? That is a noise margin (no-man's land) where the signal is neither considered a mark or a space. Some systems 'cheat' and will allow (0-5 VDC) for signal levels - beware!

Standard (mostly used - but not all of the 25 pins) signals are: <references to the names are relative to DTE (data terminal equipment)>

If you have two DTE's or two DCE's wishing to talk to one-another, then you may have to swap the following: (2,3) (4,5), (6,20) and maybe strap (8). Go buy a breakout box to figure all of this out.

DTE		DCE
1	shield	1
2 >	transmit	2
3 <	receive	3
4 >	request to send	4
5 <	clear to send	5
6 <	data set ready	6
7	signal ground	7
8 <	carrier detect	8
20 >	data term ready	20
22 <	ring indicator	22

PARALLEL or Centronix Interface: (is more straight forward but short-haul) (also a 25 pin connector but of different gender - take a look!)

Printer interface (parallel) is defined by the following signals (all are TTL with plus (5 VDC) as true and zero (0 VDC)as false.

Pin	Signal	Direction	Function (- means NOT)
1	-strobe	IN	goes hi to lo for 0.5 us when data valid
2	data1	IN	
3	data2	IN	
4	data3	IN	
5	data4	IN	these are the parallel data signals)
6	data5	IN	
7	data6	IN	
8	data7	IN	
9	data8	IN	
10	-ack	OUT	5 us low pulse ack reciept of data
11	busy	OUT	low when printer is ready to accept data
12	p-out	OUT	hi if ptr out of paper
13	sel	OUT	hi when print is on-line
14-15	n/c	-	unused
16	s-gnd		signal ground
17	c-gnd		chassis ground (there is a difference!)
18	+5VDC	OUT	external supply of + 5VDC
19-30	gnd		twisted pair return signal grounds (data)
31	-reset	IN	low input resets printer to pwr-up condx
32	-error	OUT	low when printer cannot print due to error
33	ext-gnd		external ground
34,35	n/c		unused
36	-select	IN	always high

The Centronix interface signals were taken from the STAR NX-1000 II manual and may differ somewhat from printer to printer. Again the non-standard standard. I hope that this helps with some of your interface problems. For further help look in your TNC book or your printer book for more details. 73 Joel, K9TBD

All Amateur Radio Operators are invited to participate in the DLARC, RACES & ARES nets on 146.70 W3OK/rpt with an alternate of 145.11

The Nets are held on Sundays at 9:30 AM and on Wednesdays at 7:00 PM.

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* DLARC INFORMATION LINE 820-9110 *

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All regular meetings of the D.L.A.R.C. are held on the first Thursday of each month at 7:30 PM at the Northampton County Community College

TALK IN ON 146.70

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