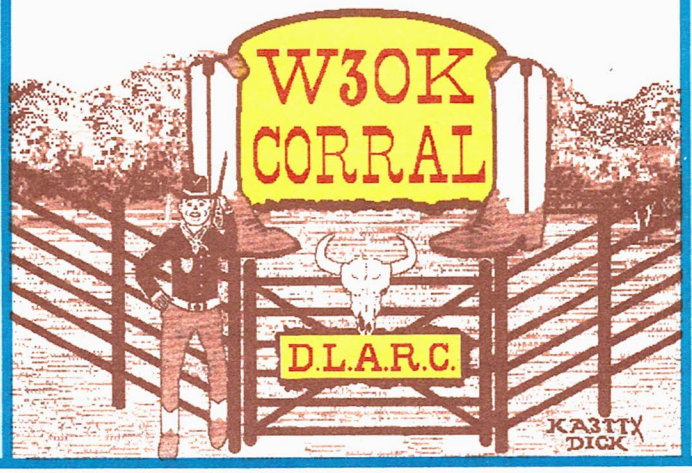
DELAWARE-LEHIGH AMATEUR RADIO CLUB, INC. W3OK

April 1992

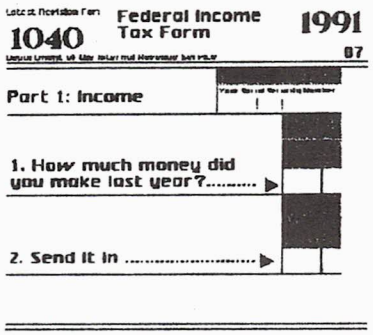


SPECIAL SERVICE CLUB
ARRL

ARRL Affiliated Club

AMATEUR TV DEMONSTRATION AT APRIL MEETING

Simplified 1040



JUST IN CASE

With this month containing APRIL 1st and the chance that you have lost your forms for the IRS, the staff of the OK CORRAL offers this to you. The above can be copied and sent to the Internal Revenue Service with your check.

AND THE WINNERS ARE

by John, N3IGA

The raffle is over for another year. Since this was my first year as chairman, I think it was successful. There were over 2300 tickets sold. There were even some sold on the night of the meeting.

First prize, the Magnavox VHS Camcorder, went to Mary Geiger of Bethlehem. Second prize, the Sony Personal CD Player, went to Merl Turzanski, W3LPB. Third prize, Cobra Answering machine, went to Stephen Haffner of Bethlehem, and Fourth prize, GE Stereo Casette Clock went 2to Ned Hoffman, N3DRZ.

Top ticket seller was Tom KA3RTI, who received an ARRL 1992 Handbook. Ray W3TDF, was second and picked the 1992 USA Callbook, Pat KB2KAT was third and received a 1992 DX Callbook. N3EBH and Phil, N3KWN fourth and fifth, both received 1 year memberships in DLARC.

PA QSO PARTY - 91

de W3TDF

The good news first! The trophy stays in EPA, however it moves to Dauberville. If it's any consolation, we didn't get beat too badly, but I think the Dauberville group deserve a big hand and a lot of credit for topling us. They apparently worked very hard to get there.

According to my source, the DLARC aggregate was 1,899,157 (55 logs), and the DDXA made 1,988,094 (33 logs). Last year we had 67 entries. This years average per participant; DDXA=60,245 and DLARC=34,530!

Can we get it back next year? You bet we can. We have numerous members upgrading, so they will have more freqs to operate, **PLUS**, we have the capability to **DO IT AGAIN. RIGHT?**

73 de Ray.

AMATEUR TV AND HOW!

by Bill, K3ANS, Program Chairman

The April 2, 1992 meeting of the Delaware-Lehigh Amateur Radio Club, Inc., will feature two way amateur television. Fred Moore, W3WZU, and Al Tribble, W3STW, of Trevose, PA (no relation to Hamtronics) will set up 2 complete ATV stationsin the theater of the Northampton County Area Community College at 7:30 PM. They will talk and look back and forth with each other. You too can be a TV actor if you get in front of the camera! They will describe the technical details, using an oscilloscope to analyze the wave forms. Fred and Al are active in the amateur TV repeaters in Philadelphia and are glad that local hams are interested in setting up a Lehigh Valley TV repeater. You can get advice and encouragement in your own efforts in ATV.

de Bill,K3ANS

APRIL FOOLS DAY

Nobody knows the origin of April Fool's Day...The only thing that's certain is that it's an old and widespread tradition. One theory is that India started it with the feast of Huli.. It's the last day of the Indian celebration of the spring equinox and the day people delighted in sending others on foolish errands.



Another theory traces the origin back to the days when the Gregorian calendar replaced the Julian calendar During the Middle Ages, many Christian countries celebrated the start of the new year with a festival that began March 25 and ended April 1. It was traditional to exchange gifts on April 1.

When England adopted the Gregorian calendar in 1752, New Year's day was moved back to January 1st, so practical jokers began giving goofy gifts on April 1st.

JAPAN EQUIPMENT NOTE
by Bob, WA2ISE

The following notice was found on a piece of test equipment from Japan: "IT PUT ON THE VINYL SHEET ON THE SURFACE OF UPPER & LOWER PANEL FOR THE PROTECTION PLEASE USE AFTER TEAR OFF VINYL SHEET WHEN USING.

I suppose the author of this notice wrote it in Japanese, and did a word for word substitution from Japanese to English. The grammar structure of the two languages is probably different, causing the severe garbling of the message. But I figured out that they wanted me to remove a plastic covering before using the equipment. Good thing the operating instructions were better written. Happy reading & writing!

de Bob, WA2ISE



LEAP YEAR
by Tom, W3IWI

Nope, there NEVER is a Feb.30th -- the solar year is 365.246 days long so occasionally a leap year is omitted, but NEVER a double or extra leap year.

The rule is (for the Gregorian calendar, which we use, thanks to Pope Gregory) every year evenly divisible by 4 is a leap year, unless it is a century year (divisible by 100) in which case it isn't (e.g. 1900 and 2100 are not leap years), unless it is evenly divisible by 400 (so 2000 is a leap year), unless it is also divisible by 1600 (e.g. 1600 and 3200) in which case it isn't.

So from 1901 thru 2099 the simple algorithm is to divide by 4. Any software we write will be irrelevant by 2100, so who cares?

de Tom W3IWI

CONTEST CALENDAR APRIL
by Barry, KU3X

Apr. 5-6 SP-DX Contest, CW
Apr. 6 ARRL VHF/UHF Spring Sprints, 144 Mhz
Apr. 11 Worked All Winnipeg Award QSO Party
Apr. 11-12 MARAC SSB County Hunters
QRP ARCI Spring QSO Party, CW
Apr. 12 W1AW Qualifying Run 10-35 WPM
Apr. 14 ARRL Spring Sprints, 220 Mhz
Apr. 18-19 SARTG WW AMTOR Contest
Holyland DX Contest
Apr. 19 W1AW Qualifying Run 10-35 WPM
Apr. 22 ARRL Spring Sprints, 432 Mhz
Apr. 25-26 Georgia QSO Party

I see we have an amtor contest on April 18th. That should be an interesting contest to enter. There should be a lot of stations from all over the world entering this one. Not everybody runs amtor, so if you put the weekend aside for this one, you may just end up with an award.

With the warmer weather arriving, try some more mountain topping in one of the VHF/UHF contests.

You would put a big smile on W3TDF's face if you did some practicing in one of the QSO parties.

de Barry, KU3X

D L A R C G O L F O P E N
SATURDAY - MAY 9 - REGISTER WITH W3TDF

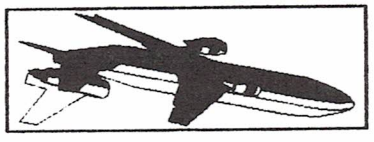
TIMELY TIPS ON ANTENNAS

by Van, K3CP

"Hello,Ima," said Elmer, greeting his friend, Ima Lidd, for another discussion on radio and electronic theory as it applies to ham radio.

"Hi, Elmer," replied Ima. "What are we going to talk about today?"

"This month I would like to talk about some of the lesser known properties of common antennas that are of great importance to the ham operators."



Elmer continued. "I would especially like to talk about a little known, but vital feature of the plain vanilla half wave dipole. Do you know which antenna I am talking about, Ima?"

"Yes, I think so," said Ima. "The wire antenna that is cut to a half wave length at the desired frequency and fed at the center point with 52 or 72 ohm cable."

"That's the one, Ima," said Elmer. "The feed line is generally 52 ohm coax either, RG58 or RG 8. We hams go to great lengths to get a low SWR for the transmitter to look into. This is important, but we never, or seldom, pay any attention to the standing wave on the antenna itself."

"Wait a minute there, Elmer, I never knew there was a standing wave on the antenna. I thought they were only on the lead in wire."

"No, No, Ima. There is a huge standing wave on a dipole. Didn't you ever notice the drawings or sketches in the handbook that show this wave in graphic form? Generally there are two curves, one representing the current standing wave and the other depicting the voltage one."

"Oh, yes," replied Ima. "Now that you've mentioned it, I have seen that."

"They do exist," continued Elmer, "and they can cause a lot of trouble unless we take steps to eliminate them. The first thing to do is to determine where the maximum current standing wave is and shunt it to ground with a series resonant circuit. This method is very effective I assure you, Ima. Also, this will greatly reduce all noise when in the receiving mode."

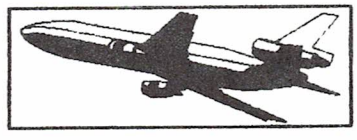
"OK, Elmer," said Ima. "What other topics do you want to discuss this month?"

"There is one more subject that I think is appropriate to discuss this month and that is a one quarter wave vertical antenna of the type we use on 2 meters with radials for a ground plane. We always think of this antenna as being fed at the bottom. Suppose we fed it at the top? How would the performance be altered, and would it be for the better or not? Let's explore what would happen if we took our two meter transceiver into an airplane and mounted the antenna on the top of a wing. When we take off in our airplane the antenna will be the normal vertical antenna with the metal surface of the wing serving as an excellent ground plane. It will be fed in the usual manner at the bottom. Now, If the pilot turned the plane upside down, the antenna would still be a vertical, BUT now it's fed at the top! What are your thoughts on that, Ima?"

"Hmm, that's something I never thought about. I don't know what effect that would have on the operation. What would happen, Elmer?"

"Think about it for a moment, Ima," continued Elmer. "When on the ground, the bottom feed point is low impedance and the far end is high impedance. When we take the antenna up in the plane and the pilot rolls it over, we are now feeding the antenna at the top which is, of course, the high impedance point. Now there will be a tremendous mismatch to the vertical. Not only that, but the voltage would be high. This probably would cause a great deal of discomfort if you were running a kilowatt."

Elmer continues. "For these reasons, Ima, it would be a good idea when working aeronautical mobile to tell the pilot to give you advance warning before he does a wing over. Do you understand what I've told you this month? Do you have any questions?"



"Yes, I do have one question, Elmer," said Ima Lidd. "What would happen if the pilot only did half of a roll over? You know, with the wings vertical."

Elmer quickly responded. "Well, in that case, Ima, we would have a horizontal vertical antenna. See you next time.



ARNOLD NOCKS, K3INV

Arnie, K3INV became a Silent Key on February 24th. Arnie, was an active ham for many years in this area from his home in the Riegelsville area. Although suffering from Parkinsons and residing in Eastwood Convalescent Home, in Easton, he remained interested in his Amateur Radio.

He was a director of television for the ABC in New York and was nominated for several Emmy awards for shows he directed, including one with Duke Ellington.

After World War II, where he served as a radio operator on board the USS Tilghman, a destroyer escort stationed in the South Pacific, he returned to television where he started with childrens's shows, 24 hour telethons and director for the first known open heart surgery captured on live TV.

He loved music and had a full sized Allen Organ in his home. He recently donated this to the State Theater.

In additional to his Amateur Radio, his TV work, and his music, earlier in life he played professional hockey with the New York Rangers Hockey team.

At his memorial service in Riegelsville, many of his New York TV friends came to pay their respects.

de Clarence W3PYF

VE TESTING

APRIL 3rd

Greystone Building Nazareth
by John K3GQJ

At the March 6 VE session at Gracedale there were a total of 20 candidates who took a total of 32 elements. There were 6 upgrades. These included:

Matthew Kylen, N3LCN, General
Joseph Nathanson, N3IPK, General
Robert Cereghino, KA3SCH, General
Harry Zimmerman, KA3ZSL, General
Joseph Walmach, KA3YUJ, Technician
Mark R Stives, N3HMO, Advanced

The VE's at this meeting were:
Ken, WC3Y; Glade, WA3MVQ; Ed, WU3T; John, K3GQJ and Steve, KD3HT.

The April 3rd meeting will have the following VE's: Robin, WA3T; Ed, W3APE; Bob, W2CCE; Ray, W3TDF and John, K3GQJ.

Thats all for now be waiting to see you here.

de John, K3GQJ Team Liaison

TOWNS YOU MAY KNOW BY PHONETIC TRANSCRIPTION

from Joel, K9TBD

TOWNS YOU MAY KNOW:
Pronounce these right,
then !!yur a naadif!!

Mwaukee
'Lan-dh
Noorlans
Balt-mr
NeeYak
Baa-sn
Menfis
Seatl
Tch-ka-go (Shekaga)
Ee-mause [Pa]

You have more? I'm sure!

by Joel, K9TBD,

RIG STOLEN:

Chris, KA3SIT, had his Yaesu 727R hand held stolen from his car parked in front of his house in Allentown on March 14th. If you hear of this unit on the market call Allentown Police or Chris @ 215 437-7089..

DIGITAL COMMUNICATION

by, Joel, K9TBD

Micro-Processor Development

In the early 1970's I was designing circuits that required processors to control such things as navigation and display systems for the aerospace industry. At that time, there were no processors on a chip and the functionality had to be in smaller logic families. All the parts where there but no one had put them all together on a single chip - until Intel came along with their 4004. You guessed it, a four-bit processor on a chip. It only lasted about a year until it was obsoleted by the 8008, an eight bit processor on a chip.

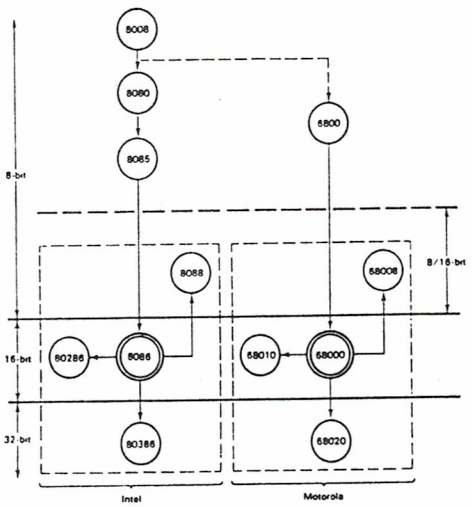


Figure 3-1. Evolution of microprocessors.

Early on, there were a variety of vendors getting into the market but it finally boiled down to the biggies you see today - Motorola and Intel. Processors are usually classified by their external data bus as to whether they are an 8,16,32,64,... bit micro-processor (uP). Many have a wider internal bus than external but the external bus (number of lines available for data transfer) is the limiting factor. Just for reference, 8 bits is 1/4k or 256 different combinations, 10 bits can represent 4 * 1/4 = 1k, 16 bits is 64k, 20 bits is a k of k's or a meg, and 32 bits is mind boggling. From the accompanying diagram (which is in time sequence) you can see the jockeying between Motorola and Intel. The further down the diagram, the more stuff on the chip, the wider the external bus becomes, and the faster the clocks can be driven. However you see one interesting 'back-step' in both families with the 8088 and the 68008.

This was a down-scaling (back to 8 bit external bus structures) for economy reasons. These processors do the same things as their 16 bit parents but the peripheral (support chips) are simpler and less expensive. This makes a cost effective fairly high powered processor for high level development with low cost hardware. Maybe you have one in your microwave oven. For instance, the 8088 has a twenty bit wide address space (1 meg) but the bottom eight bits are time multiplexed with eight data lines. This keeps the pin count down for the pack at the expense of time to present the full address for data store and retrieve functions. Compromises are made all the way in the development of these processors. Engineering considerations are: how fast can we get this on the market, how many gates can we get on the wafer, what sort of clocking rates can we shoot for, can we top our competition by putting in a 'nifty' enhancement, what is going to be the cost for the board manufacturers in terms of the cost of the type of sockets used, coprocessor requirements, etc.

About a week ago, a number of us attended a seminar given by Intel and what is coming down the pike is just beyond belief. The 80586 was designed with a gate 'budget' of 3.5 million in comparison with the 80486 budget of 1 million. The next generation after the '586 will have something like 1/2 dozen 486's on the same chip together with at least on 386 for compatibility reasons and a bunch of other stuff.

It will probably operate in a parallel configuration and have some throughput rating at a couple of hundred mega-instructions per second. (mip's) So the simple micro-processor has encroached on the high performance RISC work-station processors of today. Co-processors have usually been separate chips. These include slave chips like the math and video processors. As the density of the chips increases, many of these functions are brought right onto the same silicon wafer as the main processor. This allows much faster operation because the parts are closer together.

I was amazed when you could hold a four-function calculator in your hand and it operated on batteries. In the very near term you will have the power of a Cray computer on your desk at the price of a PC. With this sort of power, you can bet that the software vendors (who always lag the hardware vendor offerings) will find ways to 'eat em alive'. So you will have to go out and buy the next generation of machine. It's never ending.

MY "FAMILY OF HAMS"

by Chris, KA3YFK

All in the family, Breish Style

In late October, 1990 our family decided to take up amateur radio as a "family project". I was all for it, but my older brother Jay needed some extra encouragement. By listening to the local Quakertown, PA repeater we were able to find a Hamfest. We looked all around with great anticipation. We picked up a copy of "Tune in the World with Ham Radio" and asked around for information on Novice classes. We were directed to Warren Erdman (K3ZXQ). Warren took our names and "signed us up" in, his soon to start, Novice classes. The classes did not last long for the family. My Dad passed his Novice theory and code, on November 15, 1990 after an extended study session while waiting (over 4 hours) for his boss in the Orlando Airport. Upon returning home, Mr. Erdman came over our house to administer the tests. It was a great to have our family "Elmer" Mr. Dee Hester (N6BQR) there to sign the paperwork for submission to the FCC.

Black Friday, November 23, 1990 was not so black for our family. It seemed as if it were "Good Friday" for us. Mom, Jay and I all passed our Novice tests that day, Dad even passed his Technician theory test. Mr. Erdman accidentally played a 13 WPM tape and I thought I was a goner.

Dad had promised both Jay and I he would get us a radio IF we passed our test. Well, Dad came through with two brand new Icom 03ATs for the holiday. Our new licenses showed up in the mail the last week of 1990. Mom was issued KA3YFL, Jay was issued KA3YFJ, Dad was issued N3IVB and I was issued KA3YFK. We were on our way now. Although Dad wanted all of us to at least be Technician class, Mom was the only one to do so in January of 1991. Mom was issued her N3IWL call in early February. I think Dad had it planned that way. He got Mom a 2 meter 440 radio which she couldn't use until she was a Technician. Instead of watching TV in November of 1991 I listened to the Gordon West (WB6NOA) theory tapes. Dad had gotten them for Mom. Each evening I would go to sleep listening to "Gordo". Then, after reviewing the question pool with Dad, I took my test. I aced it! Wow what a feeling! Dad said it would be easy to go on to General theory with the Technician so fresh in my mind. Again, I listened to "Gordo" as I went to sleep, reviewed the question pool, and again I aced the test! Then I was on to the 13 WPM code test. Dad has a copy of "Super Morse" (by M. Lee Murrah WD5CID) and that helped me "get back in the swing of things." I had not used the code for almost a year. It took about 2 weeks (10 minutes in the morning and 10 minutes in the evening) to get up to speed to pass the test.

Again, late 1991, Dad offered Jay and I an incentive to upgrade. We could add something to the shack IF Jay upgraded to Technician and I upgraded to General by January 6, 1992. When Jay and I both passed, we both suggested adding packet to our station. Dad got us a multimode TNC so now we can be gotten on the WB3JOE BBS (145.090) not to mention the other modes.

I was looking forward to getting on 40 meters and "The Fish Net", now I can. Some of my friends are Tom (KA1UGH), Rick (KD1BR), Brian (WS3F), Joe Sr. (WA1JKS), Jack (N2JTO), Ken (N1GPL), Alan (KF8PM), Derrick (WM1U), Marty (KA1IRA), Dave (N4FFG), and Fran (KA3-WTF). I enjoyed working W3OK Christmas City Special Event Station on December 21, 1991. I made some 40 contacts. Some of the contacts were even my Fish Net friends.

Dad kept ahead of us, he took his Advanced and Extra elements in the November and December of 1991. He was issued his KE3AH call on December 12,1991.

February 11, 1992 brought three new licenses to our house. Jay was issued his Technician call N3LQV, Dad was issued his WV3M call and I got my good old KA3YFK (Young Fine Kid) only this time with GENERAL printed on it.

Mom may try to go on to General. I hope she does so when I go away to school I can talk to her.

I was 8 years old (almost 9) when I passed my Novice tests. I was 9 when I passed Technician and General elements. I hope to upgrade to Amateur Extra over the summer.

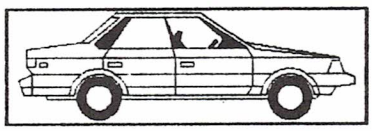
I want to take this opportunity to thank all my friends who have helped me and encouraged me along the way, Steve (N3ANW) took time to come and see me take my General code test, Bob (WF3H) saw to it I could work W3OK, all my Fish Net buddies (even though they are "a little older than me"), and of course my "Family of Hams".

de Chris KA3YFK

EXPENSIVE INSTALLATION
by John, W8JH

It may benefit other radio amateurs to be aware of the disaster experienced last week.

I purchased a new 1992 Toyota Camry for my XYL, KN4CO. I had her transceiver (a Kenwood 231A 2M) transferred from her 1987 Camry to her new vehicle. All the equipment and wiring was placed in the same location as her previous car. The changeover was done by a commercial two-way radio shop.



On the first transmission various alarm light appeared on the dash and remained on. I took the car to the dealer and he informed me that my radio equipment had damaged the main computer which would have to be replaced at my expense of $1115.00

He then produced a shop manual which states that at no time can you operate two-way radio equipment that exceeds 10 watts output in the 1992 Camry, regardless of how it is installed.

I had no choice except to pay for the repairs but the bad part is that my XYL cannot operate her radio in the new vehicle. When purchasing any vehicle, check with the dealer or your mechanic about such an installation before you go ahead with it.

From World Radio

THE TEN COMMANDMENTS OF HUMAN RELATIONS

1. SPEAK TO PEOPLE: There is nothing as nice as a cheerful word of greetings.
2. SMILE AT PEOPLE: It takes 72 muscles to frown, only 14 to smile
3. CALL PEOPLE BY NAME: The sweetest music to anyone's ears is the sound of one's name.
4. BE CORDIAL: Speak and act as if everything you do were a genuine pleasure.
5. BE FRIENDLY AND HELPFUL: If you would have friends, be friendly.
6. BE GENERALLY INTERESTED IN PEOPLE: You can like everybody if you try.
7. BE GENEROUS WITH PRAISE: Cautious with criticism.
8. BE CONSIDERATE WITH THE FEELINGS OF OTHERS: It will be appreciated.
9. BE THOUGHTFUL OF THE OPINIONS OF OTHERS: There are three sides to a controversy - yours, the other person's and the right one.
10. BE ALERT TO GIVE SERVICE: What counts in life is what we do for others.

from the Electron and World Radio

HAMFEST UPDATE
by Bob, WF3H, Chairman

The hamfest is picking up steam. We now have 5000 flyers printed (artwork by K3NZ), and a number of the important committees have begun to work.

N3HQE, Dave, is coordinating security and parking. Carl, N3GRK is our liaison to the fire-police, and is drafting a letter to them to set up procedures. K3CP, Van, is handling vendor relations, and N3JGX, Dave, is coordinating the important task of tailgater relations. N3GLZ, John, has already procured information on insurance, and is working to get us the best deal available. Adrian, KA3YEB, will staff the "burn-in" test area at the hamfest.

Quite a few folks have taken and distributed flyers at other hamfests in the area, so the word is getting around! We have had an excellent turn out of volunteers, and more help is needed--don't be shy, and don't wait 'til I draft you! If you've volunteered already, you can be sure I'll tap you for assistance at some point. Thanks to everyone, and keep up the good work.

de Bob, WF3H

545,548 HAMs

According to March 1992 QST (pg 13)

There were 545,548 amateur licenses as tallied by the FCC on December 31, 1991. On the same date one year earlier, the total was 502,677. New licenses for December were about average for the year: 1270 Novices; 2608 Technicians, 45 Generals; 10 Advanced; and seven people who entered Amateur Radio as Extra Class operators!

73 de Bill,WA3SCW

THIS MONTHS MEETING IS ON APRIL 2nd in the Auditorium at the Northampton County Community College. 7:30 PM.. Come find out about Amateur Television.

TALK IN ON 146.70

THE PREZ SEZ

SEE YOU IN THE THEATER!

by Robin, WA3T

It never ceases to amaze me how diverse we hams are. One of the many benefits of active participation in club activities is the privilege of meeting so many people who come to our hobby from different backgrounds, bringing with them diverse viwpoints and degrees of enthusiasm which vary from mild to rabid.



There are young hams and old; contesters and repeater groupies; techies and talkers; brasspounders and keyboard artists. Some have explored almost every corner of our hobby, while others are just beginning.

If you hang around our club meetings, or our classes or outside events such as Field Day, you'll meet an unbelievably rich variety of friendly human beings.

So don't be an absentee member: if your health and work schedule or other commitments will permit, come along to club meetings. The programs are truly terrific, and the Northampton Theater has space to comfortably seat the whole club - all 350 of us.

Oh, I forgot to tell you; there is a risk involved - you may get roped into "volunteering" for something! But that's not all bad: what better way to get to know a few more fellow hobbyists than working with them towards a common goal? So come on down to NCACC! ....See you in the Theater!

73 de Robin, WA3T

JUST THE MINUTES

by Dave, N3EYT, Secretary

The March 5th meeting of the DLARC was called to order at 7:32 p.m. by Robin Moseley, WA3T. The meeting was held in Northampton Hall on the NCACC campus. The minutes of the November DLARC 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 02/29/91 to be $5717.04 The DLARC would like to welcome the following seven new members: Charles Osborne, call pending; Joe Walsh, KB2LHI; David Schneider, N3LPI; and Ray Dimmick, WA3CLD. Welcome to one and all. Chris, NU3L, reported the Novice classes started on March 2 with about 20 students attending. The classes are held in the Greystone building at the Gracedale complex in Northampton. If you are interested, please contact Chris, NU3L for details. Program chair, Bill-K3ANS announced upcoming programs. The April meeting will feature a program on two way amateur television. April showers bring May antennas. Barry, KU3X will present a moving program on mobile antennas. Well wishes go to Rivo (Bart) W2SPK who is in Easton hospital. We all expect to be seeing/hearing you soon.

The Board of Directors decided to send a letter of support for Tom Daniels efforts to establish The Blake - a conversion van proposed to promote the space shuttle and featuring amateur radio. It is hoped Kenwood may help supply some of the communication gear needed. Stay tuned for more information on this project. Bob, WF3H reports the planning for the hamfest is going well. Committee work is well underway and five thousand brochures have been printed. We will need more help as the time gets closer. Contact Bob for details.

Joel, K9TBD offered a packet software program which runs under DOS. The program is called Baycom and is a complete packet program. A modem is the only other piece of equipment needed. The club raffle was held with prizes going to four winners as follows:

1st- Mary Geiger of Bethlehem
2nd- Meryl, W3LPB
3rd- Steven Hafner
4th- Ned, N3DRZ

Prizes of a callbook, handbook or one year club membership also went to the top ticket sellers:

1- Tom, KA2RTI- 100 sold
2- Ray, WA3TDF- 80 sold
3- Pat, KB2KAT- 60 sold

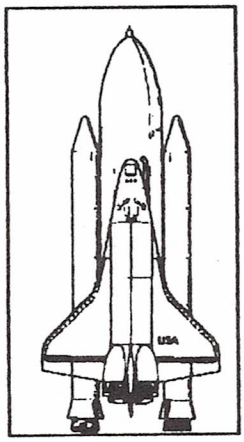
Tie for fourth place between:

4- Tom, N3EBH- 40 sold
4- Phil, N3KWN- 40 sold

by Dave- N3EYT

SHUTTLE AMATEUR RADIO EXPERIMENT FOR STS-45

When Space Shuttle mission STS-45 launches in the spring of 1992, amateur radio operators around the world will have the best opportunity ever offered to communicate with astronauts during a space flight. STS-45 is the fifth mission to carry the capability for transmissions between ground-based and Shuttle-based amateur radio operators during flight. The unique part of this mission is the 57 degree of inclination of the flight plan. During STS-45, the Shuttle Orbiter will be flying over a much larger portion of the world than in previous missions when the Shuttle Amateur Radio Experiment (SAREX) was aboard. Countries to be covered during this flight include the U.S., Canada, Japan, Russia, European nations, South America, Asia, Australia, Africa--the list includes practically the whole world.



Adding to the distinctive international character of STS-45 are crewmembers who are able to communicate in several languages. During the mission, SAREX will be operated by mission specialist David Leestma and pilot Brian Duffy, both licensed operators. Leestma's call sign is N5WQC and Duffy's is N5WQW. Other crew members who will be communicating alongside Leestma and Duffy are mission commander Charles Bolden; mission specialists C. Michael Foale and Kathy Sullivan, who is fluent in French and Norwegian; and payload specialists Byron Lichtenberg and Dirk Frimout who speaks French as well as Dutch, and has the call sign ON1AFD.

NASA has approved the use of amateur radio experiments during Shuttle flights for two reasons: to encourage public participation in the space program and to support educational opportunities offered by amateur radio. SAREX has flown previously in various hardware configurations on Space Shuttle missions STS-9, STS-51F, STS-35 and STS-37. As in the past, the crew will be communicating with students at various schools worldwide. SAREX crew-tended operating times will be dictated by the time of launch. As a secondary payload, SAREX will be operated by Leestma and Duffy whenever their work activities allow them time and when appropriate geographically for transmission. Most transmissions will be spontaneous open contacts or QSO's as the amateur radio operators call them. The SAREX will communicate with amateur stations in line-of-sight of the orbiter in a 2-meter voice transmission mode. The primary frequencies intended for use during the mission are as follows: 145.55 Mhz for downlink from the orbiter and 144.91, 144.95 and 144.97 MHz for uplink to the orbiter. All on-orbit SAREX operations are conducted in the 2-meter Amateur Satellite Service band utilizing FM with a nominal frequency deviation of 3 kHz.

An elaborate station setup is not required for making a 2-meter contact. An effective radiated power of no more than 100 watts will give excellent results if there is not a lot of other ground interference. A fixed vertical antenna mounted above obstructions will eliminate the need for elaborate orbit tracking and pointing. The vertical antenna is very desirable because it has a good radiation pattern at low elevations where the majority of the Shuttle passes occur. Accurate tracking and pointing data for your station location is best provided by a computer satellite tracking program. If you have a computer or programmable calculator and need a tracking program, write AMSAT Software Exchange, Box 27, Washington, DC 20044. The orbital parameters required by these programs are broadcast on W1AW bulletins and AMSAT nets.

When the launch date and time of flight are announced, the NASA Johnson Space Center will make the Keplerian Elements available to NASA Spacelink. The data will be updated regularly throughout the mission, and will be found in the Spacelink section on STS-45.

6 The primary payload for the STS-45 mission is the Atmospheric Laboratory for Applications and Science (ATLAS). The laboratory will be mounted on a Spacelab pallet in the Shuttle cargo bay. Long-term changes in the total energy radiated by the sun will be measured and auroras from the polar regions studied. Mission duration is expected to be eight days.

JOIN THE AMERICAN RADIO RELAY LEAGUE. WE NEED YOU

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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TALK IN ON 146.70

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