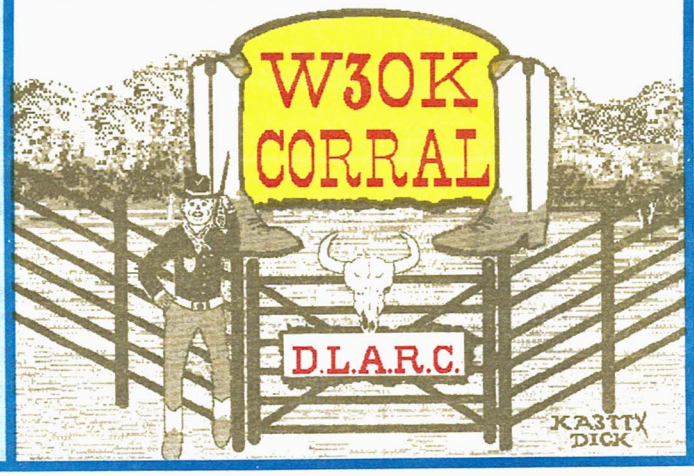
DELAWARE-LEHIGH AMATEUR RADIO CLUB, INC. W3OK

June 1994



SPECIAL SERVICE CLUB
ARRL Affiliated Club

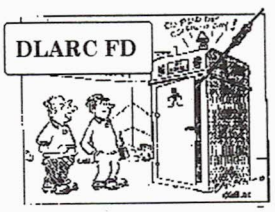
FIELD DAY JUNE 25,26

Field Day 1994

by Bob, KU3K Field Day chairman

Its the BIG outing that many wait for all year. FIELD DAY...And the best way to enjoy the weekend is to jump in with both feet! The A.R.R.L. has sponsored this **"EMERGENCY PREPAREDNESS DRILL"** for decades, and it always promises to be a special fun filled time to be enjoyed by Hams of all ages.

"CQ FD!"



This guy Bob KU3K is tough

Some call this a contest, and it is! Others see it as a picnic, and it is! A few simply come to say hello and perhaps have a few "eyeball" qso's with friends they may have not seen all year! You certainly will enjoy great food and fun, while operating or watching great operators. The idea is simply to make contacts with others from across the United States who are staging their own emergency drill, some from home and others like the DLARC operating in the field with porta-power, porta-grill and porta-pottie!

Plan to join YOUR club in action..Field Day '94.

STAY AN HOUR...STAY THE WEEKEND

Location..Plainfield Township Fairgrounds (Same as last year) Date.....June 25 and 26 (We are on the air 24 hours straight)
Time.....0900 EDST Saturday (Setup) THRU 1600 EDST Sunday (Teardown)

Location Pennsylvania 191 and Kesslersville Rd. On the road connecting Bangor to Belfast and Easton to Bangor.

DLARC Meeting will be held on June 2nd in Kiva Hall, Northampton Community College beginning at 7:30PM.

Program unknown at press time but will definitely have long discussion on Field Day operations led by Bob, KU3K

From your editor!!

by Clarence, W3PYF

The closing date for this newsletter is on the 14th of the month preceeding the meeting. It is important that all material be in my hands as long before that time as possible.

I can no longer wait, until the deadline. The printer must do his thing, and the mailing must be handled by the Circulation group, lead by KA3OEG. Do your part.

As all of you who are on packet, the W3PYF, MSYS BBS is no more. When I had the heart problems, during early May, I was ordered by my doctor to remove anything that may cause stress.

There are many other full service boards in the area..N3IQD-3 on 145.09 N3DPU on 145.07...and others as well. There is a small PBBS on 144.99 with ARRL bulletins and other club info on it. Call is W3PYF-3

Hilites from THE ARRL LETTER

FCC ORDERS RE-TESTS OF 59 AMATEURS - The FCC has ordered 59 amateur licensees to be re-examined on examination elements passed at examination sessions coordinated by the ARRL-VEC in southern California between late 1992 and mid-1993.

The FCC told all 59 that apparent irregularities indicated that the exam sessions were compromised.

"Specifically", the FCC said, "the irregularities on your examination papers indicate that you were apparently given access to the exact (answer) key used by the volunteer examiners."

The FCC gave the 59 amateurs 60 days in which to retake the exams, at any session coordinated by the Greater Los Angeles Amateur Radio Group, and said that no VE present at the suspect sessions was allowed to administer a re-examination.

Failure to pass the re-exams will result in license class change, loss of call sign, or loss of license entirely, as appropriate, the FCC said.

In the course of cooperating with the FCC's Private Radio Bureau in its investigation, the ARRL-VEC suspended the accreditation of 16 volunteer examiners.

* WASHINGTON GETS LAW ON TOWERS AND ANTENNAS - Washington State has new legislation to protect amateurs. On March 23, the governor signed Senate Bill 5697, a bill that will, according to its backers, limit the ability of municipalities to enact antenna and tower regulations, by pointing out the federal preemptions of the FCC's PRB-1. Credited with promoting this legislation were Dr. Ralph Shumaker, WX7T, and members of the Mike and Key Club of Seattle, according to ARRL State Government Liaison Frank Price, KD7AC.

* Again this year the new edition of the ARRL REPEATER DIRECTORY will debut at the Dayton Hamvention. The 1994-95 edition has been reorganized for easier use "on the run," and has more than 20,000 listings of FM repeaters, packet systems, and propagation beacons.

* Check those DXCC application forms; the current form is MSD-505 (194) for all new and endorsement applications. Please DO NOT use older forms, as they lack spaces for critical information needed for processing at HQ. And business is up again in the ARRL DXCC Branch. In March, 1127 applications for new awards and endorsements were received, and for the first three months of 1994 applications are up by 18%, QSLs by 48%, over 1993. Turnaround time is about three and a half weeks.

* ARRL affiliated clubs are asked to PLEASE advise HQ (or your local Affiliated Club Coordinator,) when your club officers or their adresses change, so we can effectively support your efforts. We can't help you if we can't find you!

* The Amateur license application backlog is on the rise again at the FCC: on Feb 1, 8543 were pending, and on Feb 28 there were 12,868 awaiting action, according to ARRL-VEC Manager Bart Jahnke, KB9NM, who also says turnaround time in Gettysburg is hovering around the FCC's self-imposed maximum of 90 days.

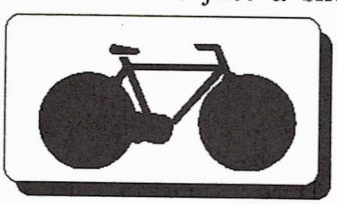
* The FCC has reaffirmed a $17,500 fine against a Chambersburg, Pennsylvania man Andrew R. Yoder who the Commission says "willfully and repeatedly" operated an unlicensed broadcast station on 7415 KHz in 1990 and 1991. Yoder had filed an application for review of the May 1992 FCC forfeiture order; in March the FCC denied the application and gave Yoder 30 days to pay the fine.

In Florida, the FCC issued Notices of Apparent Liability to three Citizen's Band operators, for violations including using illegal power amplifiers. The fines were for $1000, $1500, and $4000.

The FCC also released a list of eight individuals cited recently for violations including "operating radio stations without proper authorization and operating on unauthorized frequencies." The fines ranged from $250 to $6400. No other details were given.

Help Still needed

by Bob, WF3H



This is just a short reminder that we can still use volunteers for the **MS150 Bikeathon** which is held June 11 and 12. The event gets underway at about 6 AM on Saturday, runs to Millersville University and returns on Sunday. Hams are need to support ambulance crews, staff, intersection control, sag wagons and other communications areas. It's a REAL blast, and it supports the **Multiple Sclerosis Society**. If you're interested or would like more info, please contact Bob, WF3H, at **610 261 9137** (e-mail drigmaster@aol.com) or leave word on W3PYF-3 BBS. Thanks and see you there!

de Bob, WF3H

The Quest for Better Audio

(Part II)

by Steve, K3DEM

Last issue I wet your appetite with a "nutshell approach to achieving better audio. Presupposing you've obtained a decent microphone and have the equalizer ready to play. -Wait! Let's ask a few questions and answer them to prevent problems.

Q: This sounds too easy, what's the catch?

A: RF. Make sure you coil your EQ power supply leads around ferrite cores (try 8 turns) Dismantle your EQ, remove the plastic input/output phone jacks and replace them with metal types. This will give you wire leads on which to place ferrite beads. Place a bead over every audio lead (input and output).

Q: My EQ manual says it has RF protection circuitry.

A: EQ's were not designed for high RF fields. Think how far away from the broadcast station those huge antennas are located.

Q: How about a ground?

A: It's and individual thing. some EQ's have groundunground switches which idiot proofs it; however, do the follow your manual regarding wiring the ground. It is not done like our basic ham grounding where we tend to tie all units to a heavy ground bus terminal.

Q: Do certain microphones equalize better than others and can I EQ a D-104 or HC-5 ,etc.?

A: Any mike can be equalized, but the degree of EQ'ing is what differentiates the good mike from the less desirable. Sure you can EQ a D-104 but you'll still be playing with a crystallized sound, limited range and noisy element. The HC-4 or 5 elements have very narrow frequency range and are extremely thin (on purpose) on mid range capability thus making it even more difficult to equalize. Another problem with the HC-5 is noise pickup. On the other hand, one can take a Shure BG-4 or an Electro Voice high presence 757 and EQ it with a choice of piercing highs or a mellower mode complimented with mid-range frequencies that give you added punch in the pile-ups or under noisy conditions.

Q: Do certain rigs respond better to EQ'ing?

A: Yes, The mid to top lines offer better sound potential because of better quality filters. Kenwoods offer wider filters (E.g., TS-950SDX or TS-850) but not without inherent noise problems in their compression and DSP circuitry. The Yaesu FT-1000's use crystal 2.4 filters (which are closer to 2.2) obviously narrower but with much cleaner compression capability. Likewise with Icom 765 and 781 models. Realize that any rig may be equalized through your starting point in the less pricey models is limited by the use of lesser quality ceramic filters.

Q: Should I begin with a parametric or graphic EQ?

A: It's entirely you choice. The parametric is more complex, but may offer added features like noise filtering or notching whereas the long- throw graphics are more frequency precise -- if it is, indeed, a quality unit. No matter which type you prefer, it will work, however, the less expensive units can present overriding of frequencies often known as an EQ beginning to equalize the equalizer. (Simply put, certain frequencies blend with others rather than giving you the "true frequency". Most stores allow you to try out an EQ. It's interesting how the same frequency on one EQ can be more pronounced in comparison to others.

The March CQ magazine cover shows WA1EKV at his station. Not only does Chuck have and outstandingly loud signal world -wide with his stacked log periodics (58 ft. boom types) but he does have supreme audio. Why? If you'll look at the left side of his station, you'll notice his graphic EQ, noise limiting equipment and broadcast mike.

Equalizing is not for everyone, but rather for the individual who truly cares to improve his audio quality, readability, and presence (ability to hear all consonant and vowel sounds). It certainly surpasses the overly-compressed, highly- distorted and wide bandwidth signals so prevalent on today's amateur bands.

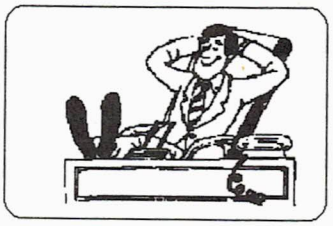
de Steve, K3DEM

OOPS = PA Party =de W3TDF

In the last months newsletter I mentioned calls of the new participants last October, but I erred. I left out **Barry, (N3NVA)**..Sorry about that. See what senility does....

The Prez Sez

de Bob, KE3AW



In case you are not aware, during the past month we have seen some changes in DLARC.

During the past month we have received the resignation of Don, W3LR, from the Technical Committee. Don has spent many long hours over the past years keeping DLARC repeaters operating at top notch levels. We all thank Don for this dedication over the past years. Ron, K3LPR, will continue to serve the Technical Committee. Our Vice-President, Tom, N3LLL, will work with Ron in the development of the committee for the continued repeater operations.

The Executive Committee passed motions regarding our DLARC repeaters. One of the upcoming features of the repeater system that we will see will be the new 440 MHz repeater installed and will operate either as a free-standing repeater or linked to the 146.700 repeater upon remote command. The 440 MHz repeater normally will not be linked to the 146.700 repeater, and shall be linkable or separable by user command. A DLARC control operator shall have the ability to override or block user linkage or separation of the two repeaters when continued interference to one repeater occurs, or it is otherwise desirable.

By request of many members, alternative tones to the familiar courtesy tone are being tried on a weekly basis on the 146.700 repeater. Nine tones are available to us. Most members heard only one or two. While some members feel very strongly for -- or against -- certain courtesy tones, this is in fact what we want to determine. Should we make a change or not. That is all there is to the changes we have heard.

Have you borrowed, bought, or built any new equipment? We would like to have you give a brief commentary or demonstration on it at any upcoming club meetings. Recently Glen, WA3MGP, showed his PVC 2 meter antenna, and Barry, KU3X, a new antenna analyzer. By taking a moment to share this information we all will be more aware of what we can make or what our wish lists should include. Please let me know of your willingness to show an item, so I can put you on the agenda with a reasonable amount of time.

Spring and summer will bring numerous radio club activities. Get ready for MS 150 Bikeathon, June 11-12; Field Day, June 25-26; The Hugh Moore Parkway Canal Museum Special Event, July 9; and the DLARC Hamfest, August 14!

TEXAS V.E. SCAM

by David Black, KB4KCH

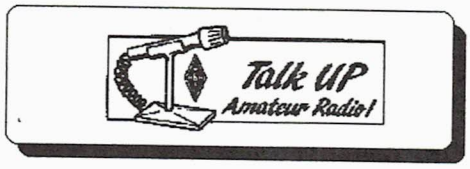
The FCC is canceling the amateur radio licenses of at least two people as the Commission expands its investigation into an elaborate scam involving bogus ham licenses. The scheme involves a complicated web of name and address changes ... callsign upgrades ... an undercover examinee ... and allegations that the names of deceased hams were used to obtain amateur radio licenses.

The scam was uncovered during a routine check of lists of people getting their ham licenses. Investigators became suspicious when they saw a familiar name: Hector Cruz. That's the name of a man linked to an early 1980s scheme when people tried to get licenses using the names of deceased hams. Further investigation led to Luis A. Rivera, KP4UP; and Gleason Petit, AB5KT. Both were listed as volunteer examiners in Texas. Records show Rivera was an examiner at the session where Hector Cruz was licensed. Luis Rivera was also involved in the earlier scam. Examination sessions Rivera administered allegedly had widespread irregularities. Rivera's sessions reportedly listed the names of out-of-state applicants as taking tests; in fact, they never showed up. An undercover agent attended one session and found evidence of fraud.

The man claiming to be Gleason Petit has reportedly admitted that his real name is Anthony Hopkins. The real Gleason Petit was an amateur operator who died in 1985. Luis Rivera denies he is the same person named in the earlier scam. But he and Hopkins were told to turn in their amateur licenses. How many fraudulent licenses were issued under this scheme? Information on that is not yet available. This tangled web of apparent fraud and conspiracy remains under investigation.

The preceding from The Westlink Report.

73 Chris KD3OA EPA Bulletin Manager



Ima Lidd

Receivers -

Part 2

by Van K3CP



"OK," said Ima Lidd to Elmer, "you explained how a radio signal was selected from many others and how it was amplified. Now tell me, please, how the radio converts the signals into a form that we can hear."

Elmer said, "That's a fair question. Over the years there have been many different ways to accomplish that feat. These ranged from the simple crystal set to the tuned radio frequencies receivers (TRF's) to the direct conversion radios to the double or even triple conversion superheterodynes we have today. All these types had one thing in common and that was rectification or detection of the signal and separating (filtering) the AF portion from the RF.

"All radios from the earliest ones to the latest designs consist of certain essential circuits. These are an antenna, a ground, a tuned circuit, some kind of a detector and a device to convert electrical fluctuations to sound waves. We have discussed how all these elements work earlier so we won't go into them again."

"Just a minute there, Elmer," said Ima. "You never told me about a device that converts an electrical wave into sound. Or how a crystal detector works, either."

"Oh, yes I did," said Elmer. "The headset or loudspeaker is a form of an inductor and the crystal detector is nothing more than a diode. Remember now?"

Ima said, "Yes, I remember how they work and now I am anxious to learn how the rest of the radio works."

"We are getting to that right now. The tuned circuit is connected to the crystal detector. The old ones were made of a material called galena and were polycrystalline in character. You had to move a spring wire known as a "cat's whisker" around on the crystal until you found the spot where nature had generously made a single crystal. Todays crystals are generally made of germanium or silicon and the manufacturer sees to it that all of the material is single crystal - so any spot on the surface will work. They all do the same thing, however. They rectify the signal. Rectify means they permit current to flow in only one direction. In other words they convert the radio frequency signal (which is AC) into DC."

"DC," questioned Ima Lidd. "That's a surprise to me."

"Well, Ima," responded Elmer. "It's not surprising when you realize that the DC contains all the data of the original signal. That means that the signal is still about the same as it was except that now it is no longer alternating. It is really a direct current.

"The signal also contains the voice or music that was present when it was broadcast. The next item from our list of components that comes into play is the capacitor that we mentioned earlier. The detected signal is fed into this capacitor. Do you remember what a capacitor does?"

"Yes, I do," replied Ima. "They block low frequencies and allow the higher frequencies to pass through them."

"Right you are, Ima," said Elmer. "It's the capacitors ability to pass these high frequencies that we are interested in for this application. If the capacitor is placed in parallel with the headset it will shunt or bypass the high frequencies and allow the audio to reach the headset."

"Run that by me again, Elmer," said Ima.

"Yes, it does seem a little complicated," said Elmer, "let me describe the make up of a radio signal in more detail. Let us consider the transmitter site where the signal is originated. An RF signal is modulated with a audio one. (Voice or music). Modulated in this case means to combine two signals, the RF (carrier) and the AF (audio) in such a manner as to cause the RF to be varied at an audio rate."

"Well," said Ima," if a crystal set can do all that, why bother with all the complicated and expensive radios we have today?"

"That is a reasonable question," responded Elmer. "The crystal set has many shortcomings. It doesn't have much selectivity. Selectivity is the capability to separate stations that are close to each others frequency. Also they are not very sensitive. You would hear only the strongest signals and then only in a headset. The next time we get together, we will discuss a more advanced type of receiver. If you understand most of what we talked about today, you are well on your way to understanding how the more complex radios work."

"Well, Elmer," replied Ima, "I got most of it. At least the next time I hear some one talking about detection and modulation, I will know what they mean."

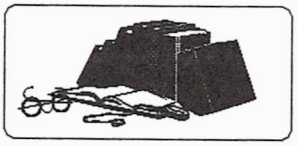
de Van, K3CP

Don't forget Field Day!!!!

Be there to help

Just the Minutes

by Bob, N3OLH, Secretary



The May meeting of the Delaware-Lehigh Amateur Radio Club was called to order at 7:35 PM on May 5, 1994 in Kiva Hall at the Northampton Area Community College by the Club's President, Bob Green, KE3AW. There were 80 members and guests in attendance.

Amy, KD3TI, moved that the minutes of the April Club Meeting, as published in the May 1994 issue of the W3OK Corral, be approved. Carl, N3GRK, seconded the motion and it was approved by a vote of the membership.

Dick, KA3MOU, presented the Treasurer's report which showed a balance in the Club treasury of $4,551.05. Ed, W3APE moved that the Treasurer's Report be accepted as read. The motion was seconded by Ray, N3KRB, an approved by the membership. Dick reported that a sufficient number of members had placed orders for Club jackets so that they could be purchased at the volume discount price. He also reminded the members that they can obtain Club emblems from him for $2.50.

Leroy Kromis, Call Pending, Donald Oswald, Call Pending, and Scott Werkheiser, Call Pending, submitted applications for Club membership. A motion to admit these applicants into membership was made by Willard, KA2VEM, and seconded by Jim, N3QZS. The motion was approved and the new members were welcomed into the Club. Pete, N3IXY, was also recognized as a quest at the meeting.

Bob, WF3H, Bob, KE3FF and Sue, a Staff Representative of the Multiple Sclerosis Society, showed a video about the MS 150 Bike Tour. They explained that hams are necessary to provide vital communications for the event and asked for our Club members to assist in the PA Dutch MS 150 Bike Tour. The event will be held on June 11 and 12, 1994 and the riders will travel from Trexlertown to Millersville and return. Members wishing to volunteer for this Club endorsed event can contact Bob, WF3H,

Barry, KU3X, presented a DX 100 Endorsement to Bill, W3FYK, for working 159 countries. Barry also presented a Worked All States Award (mixed bands) and a DX 100 Award with Endorsement for working 131 countries, all on 10 meter, to Joe, N3MKZ. Congratulations were given to these two members.

Rich, N3NXF, informed the membership that Brad, KA1RAH, will be assisting him with the Special Events Station to be held on July 9 from 8:00 AM to 8:00 PM in conjunction with Hugh Moore Canal Celebration. Operators, especially those with higher class licenses, are needed. Please contact Rich or Brad if you can spend some time at the station. Rich is also looking for some help in the Public Relations functions in regard to the Club Hamfest. Please contact Rich if you can assist.

Bob, KE3AW, announced that Don, W3LR, has resigned from the Repeater Committee. Tom, N3LLL will assist Ron, K3LPR on the Repeater Committee. Bob then presented Don with the Club's Certificate of Appreciation "in recognition of his donation of many years of effective technical expertise and personal time in maintaining the Club's W3OK repeater."

At the April Executive Committee, the following two motions were passed with respect to the upgrade of the 440 Mhz repeater: (1) "That the Executive Committee requests the Repeater Committee when installing the new 440 Mhz repeater, to make provision for it to operate either as a free-standing repeater or linked to the 146.700 repeater, upon remote command. The Executive Committee Authorizes the expenditures necessary to make this provision", and (2) "That the new 440 Mhz repeater shall normally not be linked to the 146.700 repeater and shall be linkable or separable by user command. A DLARC control operator shall have the ability to override or block user linkage or separation of the two repeaters when continued interference to one repeater occurs, or it is otherwise desirable."

Greg, KB2ANG, said that he evening speaker would be one of our own members, George, N3OWG, who will explain everything that you wanted to know about computer viruses.

Bob told the members that, in connection with the California earthquake, the Club had made the authorized $100 contributions to Agoura Packet Association and the Los Angeles ARES Section Emergency Coordinator. In light of that contribution the Club received an ARRL Certificate of Merit for Outstanding Service to the Amateur Radio community.

The Club also received a Recognition of Service from the American Lung Association in for our efforts in assisting their bike race and a letter of thanks from the Nazareth Superintendent of Schools and the Technical Expo Chairperson for the Club's participation in their event.

Bob, KU3K, reminded the members about the ARRL sponsored Field Day to be held on June 25-26 at the Plainfield Twp. Fair Grounds. Volunteers are needed. Please contact Bob if you can help.

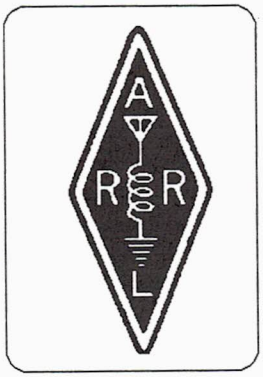
The Executive Committee decided that the two radios donated by Harry, W3TEB, will be use in conjunction with the Club sponsored Novice-Tech classes.
A motion to adjourn was made by Van, K3CP and seconded by Ray, W3TDF. The meeting was adjourned at 8:45 PM.

de Bob N3OLH, Secretary

The ARRL Wants You -

Part 2

*** OFFICIAL RELAY STATION ***



This is a traffic-handling appointment that's open to all license classes. As an Official Relay Station, its your responsibility to relay or deliver formal ARRL Radiogram-formatted message traffic. Most traffic takes the form of routine messages from one ham to another, or from a ham to a non-ham or vice versa. ("Having a great time in Orlando. Wish you were here.") During emergencies and disasters, your well-honed traffic handling skills become especially critical as you relay messages to and from disaster areas.

You can lay out your responsibilities on CW, voice, packet, RTTY or whatever mode you have available. You're not required to have capabilities on all bands. If you can only operate VHF, for example, that's fine.

Official Relay Stations often participate in traffic nets on the HF bands or on VHF (many VHF nets meet on FM repeaters.)

These nets meet on a regular basis so that hams can swap National Traffic System (NTS) messages. In the case of VHF nets, the incoming messages are usually relayed from nets that meet on HF bands. Outgoing messages originate locally and passed along to HF nets to reach their final destination.

Packet radio has added an extra dimension to the capabilities of Official Relay Stations. If you're a packeteer, you can originate messages on your local bulletin board and deliver messages that have arrived. (The next time you check into a PBBS, send the LT command to see if there is any traffic awaiting delivery.)

As an Official Relay Station, you're expected to set an example of good operating practice. In fact, many Section Managers and Section Traffic Managers will not appoint Official Relay Stations until they have proven their operating abilities. Your CW signals must be pure and your sending must well spaced and properly formed. On voice, your signal must be undistorted and you must be able to speak clearly.

Official Relay Stations are appointed by Section Managers and report to the Section Traffic Manager. The requirements are:

* Full ARRL membership
* A Novice class license or higher
* Proven CW, voice or digital traffic handling abilities
* The ability to handle all messages quickly, reliably, and above all else, accurately.
* Regular reporting of activity to the ARRL Section Manager or Section Manager.

For a copy of the Official Relay Station Guidelines, send a self-addressed, stamped envelope to the Field Services Department (FSD) at:

ARRL Attn: FSD
225 Main Street
Newington, CT 06111

Ask for FSD-107 along with an "Application for Station Appointment." To become an Official Relay Station, you must complete this form and send it to your Section Manager. Special certificates are issued to all newly appointed Official Relay Stations.

The Field Services Department offers a valuable book that's yours for the asking. It's the Public Service Communications Manual. The manual covers all aspects of public service operating including emergency preparedness, traffic handling and so on. To receive your free copy (only 1 per person, please), send your request along with a larger (7 x 10-inch) self-addressed, stamped envelope with four units of first-class postage to:

ARRL

Attn: FSD 225 Main Street Newington,CT 06111

This is the second of three articles in the series entitled "The ARRL Wants You. This information is taken from "Handi-Ham World" magazine (A publication of the Courage HANDI-HAM System - Winter, 1994).

The next and final article describes the "Official Emergency Station."

supplied by Mark, WA3KIF

ARRL BEGINS LICENSE RENEWAL SERVICE

The ARRL has begun mailing FCC amateur license expiration notices to its members. The notices, including an envelope addressed to the FCC's processing facility in Gettysburg, Pennsylvania, are sent 90 days before the license expiration date and are generated from the FCC database. Addresses are cross-checked with the ARRL membership database and the QST mailing address is used if it is different from the address in the FCC database.

The preceding from The Westlink Report.

73 Chris ARRL EPA Bulletin Manager

How I Solved My RF Problems

by J.P.Fox, N3GWR

Part II (continued from last issue)

The Point-Oh-One's are small capacitors, usually written as ".01". They are about the size of a nickel, pass RF right through, and block audio frequencies and direct current. There is a 12 volt accessory jack on the back of my rig which goes to the lights in the tuner, so a .01 at each end of the wire, hot-to-ground, was installed. At the loudspeaker, I installed a .01 across the speaker terminals. I knew from some of my historical audiophile experience that if you were bothered by "CBer's" that this might be the cure. Now that my shack was rearranged, and my soldering iron was hot, and while I was thinking like an audiophile, I shortened the wire from the radio to the speaker. Hi-fi buffs don't like long speaker wire runs. They claim really long runs of speaker wire can "color" the music. The effect is to attenuate the high audio frequencies and your music won't sound as bright.

If you are a fanatical stereo buff, you may already have heard that esoteric theory. The basis is that long runs of speaker wire result in high inter-wire capacitance. Capacitance occurs anytime two electrical conductors get near. The longer the speaker wire, the higher the capacitance. The high capacitance acts as a high cut filter. As a corollary, don't use coaxial cable to connect your audio amplifier to your speakers because the capacitance per foot is several times greater than regular speaker wire. This theory sells a lot of premium audio cable. At my house, I use 18 gauge electrical zip cord, save my money, and give the treble control on my stereo a nudge upward.

But I digress. Back to ham radio. I tuned up the rig, and at this point there was a noticeable improvement in my signal. As long as I ran reduced power, say 50 watts, and tolerate a "little" distortion, I could operate.

I was not having a problem on 80 meters. So, what was different about 80? Well for one thing, I was feeding it with coaxial cable, and on all other bands I was using a 40 meter extended double Zepp (40m EDZ) which was fed by open wire. Was this the problem ? I have a tri-band beam for 10, 15, & 20m, but I don't have a tower. I temporarily installed the beam on a ten foot section of tower, ran the coaxial cable, and, **VOILA**!, 10, 15, & 20m work. Should I now condemn the open wire? I did not want to, because I like to work the WARC bands, as well as listen to short wave using the tuner and open-wire-fed 40m EDZ.

Previously, when I was shortening the speaker wire, I realized there was quite a rat's nest behind the rig. Maybe if I shortened each wire, made things nice and neat it might help. It didn't, but at least it looks nicer.

During this time, I took the transceiver out of the shack on two occasions. I operated PA QSO Party portable, the rig ran great. I brought it home, it didn't. I took the rig to a friend's shack, and it operated flawlessly. I brought it home and it didn't. So I knew it wasn't the rig.

I got a headset with a microphone attached for Christmas. It had no effect on the RF problem. Thank goodness.

The feedline came close to my speaker, a 12-inch full range, high-compliance beauty on a wooden mount. The wire connecting the radio to the speaker was only 18 inches long. Could this short run still be a problem? As I spoke and monitored myself in the headphones, I disconnected the speaker. The distortion ceased! The problem was isolated, but how could I cure it?

Even when the speaker was not in use, it still was a good path for RF to get back into the rig. I like to listen with a loudspeaker, so what could I do? I could not shorten the wire, but I could replace it. That moment I realized two things: 1) It's OK to use coaxial cable to feed a speaker in this application, and 2) the frame of the speaker was not grounded! (The drawing in the Handbook didn't include a speaker.) One ground strap, 18 inches of coax, and in a few minutes, I cured a nasty problem.

As they say, "Hindsight is 20-20." Maybe I should have known to ground the speaker frame earlier. Maybe I should have changed one thing at a time. If I had added the ".01" to the speaker, ran a test, **AND THEN** shortened the speaker wire, I would have been able to isolate the problem sooner. However, I did make one personal discovery, which I now advocate. I now say: Feed your hamshack loudspeaker with coax. It helped me cure a problem, and so I'm passing it along. I'm sure I'll never be as famous as G5RV, but if you ever change the speaker wire in your hamshack to coax, please think of me, N3GWR.

ATTITUDE

"The longer I live, the more I realize the impact of attitude on life. Attitude, to me is more important than facts."

It is more important than the past, than education, than money, than circumstances, than failures, than successes, that what other people think or say or do. It is more important than appearance, giftedness, or skill. It will make or break a company...a church...a home....club.

The remarkable thing is we have a choice every day regarding the attitude we will have.

submitted by Val, W3EFL

** CONTEST CALENDAR **

by Barry, KU3X, Contest Editor

Jun 4-5 ARRL June VHF QSO Party
Portugal Day Contest
Jun 11-12 ANARTS WW RTTY Contest
ATV Quest Contest
Jun 16 W1AW Qualifying Run (10-35 WPM)
Jun 18-19 All Asian CW DX Contest
SMIRK QSO Party
Jun 24 W1AW Qualifying Run (10-35 WPM)
Jun 25-26 ARRL Field Day
Jul 1 RAC Canada Day Contest

CONTEST TIP #25

Food and yourself

Rest! Don't go into a contest tired. Make sure you get plenty of rest before the contest starts. If you can, take a nap an hour or two before the contest begins. Make sure you have a comfortable chair to sit in during the contest. Make sure you have good lighting so you don't strain your eyes.

If you are running an amp, don't let your shack get too warm. Open a window if it gets too warm. I have to do that in the middle of the winter to cool down my shack. Make a tune-up chart for your amp for fast band changing. Clean off the operating table before the contest.

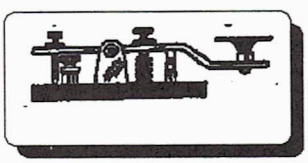
Food: Eat food that is comfortable to your system. You don't want to spend half of the contest reading QST in the bathroom. Keep a small snack tray in the shack. Put a Mister Coffee machine or a hotplate in the shack. Caution! Keep those crumbs out of the keyboard and don't spill any drinks on those keys.

de Barry, KU3X

10 WPM CW PROPOSED

from Amateur Radio Newsline 123

The biggest news out of Dayton involves a plan being hatched by amateur radio equipment manufacturers and magazine publishers. They want easier licensing requirements for access to HF spectrum. Amateur Radio Industry Group members say the 13 word per minute Morse Code requirement for HF access should be lowered to 10 words a minute and they plan to work toward that goal. At their April 28th meeting, group members discussed the plan, including petitioning the Federal Communications Commission. Giving advice to the group is former FCC official Ray Kowalski. He tells group members the timing for such a move is excellent, since Washington's political climate is so heavily geared toward emerging technologies.



"What's good for amateur radio is good for America. This is where the technicians and the bright young minds get their start. This is the fertile ground where they are planted. And if we don't nurture that and keep it growing and going, comes the next time we need engineers maybe we will rent them from Taiwan or some place, we will not have them home grown." Ray Kowalski, former FCC official. The hottest selling ham gear lately has been VHF and UHF equipment. That reflects the strong growth in codeless technician class hams. But equipment manufacturers are frustrated by marginal profits from sales of big ticket HF items. Some manufacturers say current code requirements act as a barrier to hams who would otherwise populate the HF bands. Ray Kowalski, currently a Washington lawyer dealing in communications issues, tells group members they should act on their wishes before the year is out. "There is a window of opportunity that is now open. In Washington, when a new administration comes in, it takes them a year to get their act together, and by the fourth year they are hunkering down for the election. They don't want to do anything that will make anybody mad. So there is that two year window of opportunity in any administration where everything gets done. We are in that window now. So this is a great time to be thinking about what changes are necessary and natural for this service, this hobby, what ever you want to call it." Ray Kowalski, former FCC official.

One of those attending the amateur group meeting is Yaesu USA's Kevin Karamanos, WD6DIH.

"I think in the long term the industry is going to try to get together and promote the technician to move up to general class and hopefully populate the HF bands. We need to do what ever we can to get more folks up there and move up." Kevin Karamanos, WD6DIH, Yaesu USA.

JOIN OR RENEW YOUR ARRL MEMBERSHIP BY MAKING A CHECK OUT TO DLARC AND GIVE IT TO TREASURER DICK DECH, KA3MOU. DLARC BENEFITS FROM THIS

25 Thoughts To See You Through Almost Any Crisis

1. Indecision is the key to flexibility.

2. You cant tell which way the train went by looking at the track.

3. There is absolutely no substitute for genuine lack of preparation.

4. Happiness is merely the remission of pain.

5. Nostalgia isn't what it used to be.

6. Sometimes too much to drink isn't enough.

7. The facts, although interesting, are irrelevant.

8. The careful application of terror is also a form of communication.

9. Someone who thinks logically is a nice contrast to the real world.

10. Things are more like they are today than they ever were before.

11. Anything worth fighting for is worth fighting dirty for.

12. Everything should be made as simple as possible, but no simpler.

13. Friends may come and go, but enemies accumulate.

14. 1 have seen the truth and it makes no sense.

15. Suicide is the most sincere form of self-criticism.

16. If you think that there is good in everybody, you haven't met everybody.

17. All things being equal, fat people use more soap.

18. If you can smile when things go wrong, you have someone in mind to blame.

19. One-seventh of your life is spent on Monday.

20. By the time you make ends meet, they move the ends.

21. Not one shred of evidence supports the notion that life is serious.

22. There is always one more imbecile than you counted on.

23. This is as bad as it can get, but don't bet on it.

24. Never wrestle with a pig. You both get dirty, and the pig likes it.

25 The trouble with life is that you're halfway through it before you realize that it's a "do it yourself" thing.

author unknown, supplied by Bruce KA3ONZ

Ve Testing

MAY 6TH, 1994 VE SESSION

At this session, seven candidates took a total of thirteen elements. There was one upgrade, and three new licenses...

Martin O. Hoppe, N3RCA upgraded to Extra

George E. Wieland, III new Technician Plus

David M. Roseman new Technician

Scott E. Werkheiser new Technician

The VE's at this session were John, WX3C; Bill, NC3P; Walter, N3MHW; Bob, KE3AW; and Robin, WA3T.

The next test session will be on June 3rd; team 2 will be in attendance.

73 de Robin, WA3T, Team Liason Alternate

IT'S LAW IN NEW HAMPSHIRE

New Hampshire House Bill 1380, recently signed into law by Governor Steve Merrill, exempts from real estate property taxes "radio towers, antennas, and related or supporting structures used exclusively in the operation of an amateur communications station under Federal Communications Commission Amateur Radio Service rules and regulations."

ARRL Counsel Chris Imlay, N3AKD, called the bill "an important precedent," saying that it may have far reaching effects throughout the US as amateurs continue to seek relief from local and state regulation.

ARRL New Hampshire Section Manager Al Shuman, N1FIK, who played a key role in the passage of the bill, largely credits ARRL New Hampshire State Government Liaison (and Representative in the State Legislature) Ralph Rosen, W1HSB, and a team of ARRL Field Organization volunteers, who testified numerous times before both House and Senate committees.

(editors note) According to one of our members, in the State of Pennsylvania, this is not a problem, but it is interesting that it made news in other areas. Could not check on what the status is in New Jersey.

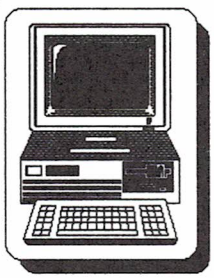
The preceeding was from a recent ARRL Bulletin..

Digital Communication

by Joel, K9TBD,

Guest Article on DSP from a real experimenter my brother WA9FIO, VAN

REAL Digital Signal Processing !!!



This is a report of an actual DSP device on a printed circuit card. None of the QST spoof here. In the last several years new digital modes have been rapidly developed so that it seems as if there is a new mode or modem each month. To me that the only sensible way to keep up to the decoding [of various digital signals, ed.] requirements is to do all of the analog to bit level processing in software, avoiding all tuned circuits, filters, op amps, etc. This way you can avoid shelling out $500 for a new multimode controller or $50 for an EPROM for your old controller. The following is a report of real DSP hardware, implemented with shareware software.

Last winter Joel, K9TBD, forwarded an E-mail note from Johan Forrer, KC7WW that was posted at the U of California San Diego on internet, that described a software application for the Texas Instruments' TMS320C26 single chip digital signal processor. KC7WW had written a shareware bit level decoder and display program for the PC that includes a collection of software optimum modems for the TI chip. Johan's decoder and display called "PC-TOR" functions much like the previously reviewed BMKMULTY software multimode controller, both of which are meant to connect to the radio using a "dumb modem", or terminal unit.

This TI processor chip has an on-board communication kernal in ROM and a moderate amount of RAM, assembled at the board level as a "DIGITAL STARTER KIT" (DSK) on a 2" by 3" pc board along with a TMS32040 14 bit ADC-DAC, RS232 DB-9 plug, with 9VAC and analog I/O by way of RCA plugs. A complete manual for the chip, a starter guide, and disk software including an unique assembler/debugger and sample software comes as a kit. Software samples include an "oscilloscope", "spectrum analyzer", and "audio signal analyzer" for the audio range. The chip and this digital starter kit are available from your usual TI distributor, as TI part number TMDS3200026. The kit is about $99.

What follows is a brief description of the implementation of a complete collection of optimum modems in software that when downloaded into a DSP chip processes the analog input from your radio, performs bit level decoding of RTTY, AMTOR, PACTOR, ASCII etc., and returns the decoded data to your PC through a standard RS232 connection, for BMKMULTY or PC-TOR to display, and when appropriate, key your transmitter.

Basically a true digital signal processor is a specialized microprocessor that can do very fast fixed or floating point arithmetic on 16 or 32+ bit words. Usually a separate path for data and program are present, so that the processor can fetch and process data in a single processor cycle, called Harvard architecture. With a 40meg clock, a 16 x 16 bit multiplication and accumulate can be executed in a single cycle, which might be on the order of 100 times faster than an ordinary 386/486 pc. This speed with a fast, precision analog to digital converter, and sufficient memory, can perform multi-channel, precision, narrow band linear phase filtering, full-wave individual channel detection, channel summing, low pass filter the output and perform a decision threshold on the result, and send it to your RS232 port.

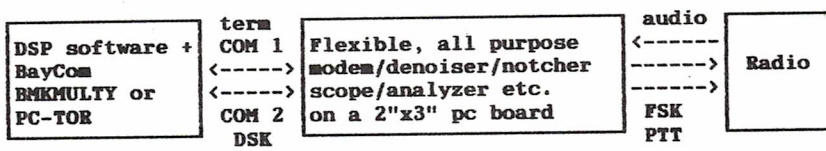
Because of the specialized nature of the DSP chip, a software routine to do all this is typically less than 1kb length and is loaded into the DSP chip at 115,200 kbaud through your COM port. I am not a Windows user, so beware, you GUI folks. With PC-TOR, the same COM port is used to receive, send and turn on the push to talk line. I am using a second COM port, so that I can independently "talk" to the DSP unit on one COM port and use the second COM port for BMKMULTY to "talk" to the radio. (the DSK wants the use of the DTR line as a processor reset line, while BMK uses DTR to do the FSK keying.)

With appropriate software, for example you may select a 170Hz shift, 85Hz channel bandwidth, 50hz low pass keying filter, download it to the DSP chip, and you have a "perfect" RTTY detector. Change the modem to 200hz shift, 100 Hz channel, 100 Hz lowpass keying filter, and you have the "perfect" PACTOR detector. All these implementations are linear phase, very high order equivalent filters. A very narrow (100 hz) steep skirted CW filter is a choice, as well as the W9GR "denoiser" and "autonotch" heterodyne filters.

I have been testing a good analog terminal unit the DT-600/ST-6, that has been optimized for 100 baud 170 hz shift against the DSP modem, and comparing error rates, and its performance dynamic range and just fooling around for the last couple of weeks. There is no doubt that the DSP filtering is superior, with very steep skirts off channel. Read the old literature re: AM/FM detection. Unlike L/C filters, that may be tuned for correct amplitude response but not phase linearity the DSP can do both by design. The dynamic range is what you would expect of a 14 bit ADC, about 55-60 db. It copies signals perfectly that are less than 1 mv on my audio line. If you want a different filter configuration, you shell out to DOS and load another one in about 1 second. I can do that quicker from the keyboard than reaching to the back of my DT-600 and flip a switch. Some fun !!!

My present station physical configuration is as follows..

486 PC or old 8088	TI DSP board mounted on a small chassis	IC765 true FSK



Try it. Jog your mind, run down to the library and look up some DSP books. Write or give me a call, or listen for me on the air. Look up KC7WW, a very bright fellow, who got me going with the TI kit. de WA9FIO 73, Van

Van is my brother and a real inspiration to 'ham radio' - Still experimenting and gets excited about the marvels of modern electronics. I hope that others will take his lead and play with the electronics - in the original spirit of 'ham radio'.

73 Joel your digital editor.....

All Amateur Radio Operators are invited to
Participate to the DLARC, RACES & ARES nets
on 146.70 W3OK/RPT with an alternate of W3PYF/RPT 145.11
W3OK trustee Rick Saeger, K3OO
The Nets are held on Sundays at 9:30 AM and Wednesdays at 7:00PM

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DLARC INFORMATION LINE 820-9110

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--CLUB MEETINGS

All regular meetings of the D.L.A.R.C. are held on the first Thursday of each month at 7:30 PM at Northampton County Community College
TALK IN ON 146.70
Any comments or articles contributed to this newsletter should be addressed to
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