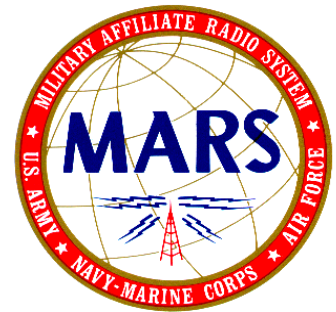


NAVMARCORMARS

Central Area

NewsLetter



February 2005

"Proudly Serving Those Who Serve!"

Vol II, Issue 1

In this issue we have several articles from Region Five. One that could concern all of us is about **Broadband Over Power Lines (BPL)** by Dennis, NNN0-GAP IL, an incisive treatment well worth reading. I am indebted to Tim, NNN0-GAZ MN for a challenging cross-word puzzle, for his help in this and future articles from his outstanding Minnesota Newsletter. Dennis, NNN0-GAP IL, in addition to the **BPL** article, shares with us news about an IL ECOM Exercise. The **Training** article by NNN0IBM FL inspired this lead article **"Say Again, Over?"** An excellent article about grounding by Guy Phillips, and a very thoughtful and timely article **Are You Slipping** by NNN0AS4 FOUR KY, an outstanding article about ECOM by NNN0AS4 TWO AL, and thought-provoking tidbits contribute to some interesting reading.

"Say Again, Over."

Man has been communicating with his fellow man since the Garden of Eden. Sometimes his communications have had good results. When he has been misunderstood, there have been not so good consequences. Some of these can be rather comical. There was a pastor who always enjoyed visits from members of his congregation. One evening he was feeling under the weather when a family dropped in for a visit. A few days later they came over again. In expressing his thanks for their previous visit, he said, "You don't know how good I felt when you people left the other night." Occasionally, then, something we say can be misunderstood.

The way a sentence is punctuated can greatly alter its meaning. Case in point--In an English class at a university, the professor wrote this sentence on the board: "Woman without her man is a beast." When he finished, he turned to the class and said, "I want you to punctuate this sentence and then pass your papers in to me."

When he had received all the papers and graded them, this is what he found: Almost all of the men punctuated the sentence this way: "Woman, without her man, is a beast." The women looked the sentence over and saw it this way: "Woman, without her, man is a

beast." You see, then, how two commas can distinctly alter the meaning of a sentence.

Written communication involves several things. What do you want to convey? What result are you looking for? In what form will you convey it? What guideline are you using and are you adhering to it? Now you may be wondering, "Just where is this going?" I'm glad you asked! In his outstanding article in the October 2004 issue of the **CENTRAL AREA NEWSLETTER**, NNN0AS4 TWO AL began with this short paragraph: "EEI Reports submitted during recent ECOM exercises and for actual events have generally been incorrect in one or several parts. This despite repeated emphasis on our Region ECOM Admin Net and the NNN0DVG messages sent to all state directors and their ECOM Assistants. The proper format and instructions are set forth in NTP 8 (C), paragraph D900." Excellent training material followed. His concluding paragraph reads: "That there are so few correctly submitted (EEI Reports) can mean only two things. First, Our members are not reading this section of the NTP; and, second, our members are poorly trained. If the state directors and their ECOM Assistants will meet their training responsibilities, Region FOUR should easily achieve ZERO defects in EEI reporting."

(Continued on Page 2)

(Continued from "Say Again, Over")

In formatting EEI messages we are urged to be as brief as possible without leaving essential elements out! Wordiness is not encouraged, and **some** of our EEI exercise messages could stand a bit of truncation, i.e., cut short. The following is an example of wordiness to the nth degree conveying little or nothing usable: A high school teacher stopped a girl out in the hall during class and asked her if she was cutting a class. The girl replied, "Well, see, okay, like it's like I really don't think like that's really important, y'know, like because I'm y'know, like I don't get anything out of it." The teacher said, "It's Mrs. Arnold's English class, isn't it?"

An excellent example of an EEI message is found on page D-20, ANNEX D in NTP 8(C). It says enough without being wordy, giving NNN0DOM and others a good picture of what's happening just north of Savannah, GA. Please remember this: In a real emergency, the addressee of any EEI message are going to be very busy. They will need our messages and updates from time to time, but the messages need to be as factual as possible with only essential information. Please look for and read over this example on page D-20, and let your EEI messages be guided by this brief but factual report.

Why are we really not interested in ECOM? Why do we consider it a real drag to have quarterly ECOM exercises? Lack of interest? Fear of making boo-boos? Some states don't even bother having ECOM exercises.

9/11 could very well be the harbinger of further terrorist attacks on our nation. Think what would happen if terrorists were to attack several small towns simultaneously. You'd expect them to attack big cities, but if attacks were to be made in relatively small towns, then we would feel we wouldn't be safe anywhere. But our nation would turn to with a vengeance to counter such attacks, and that's where we would come in with our emergency communications skills.

That being the case, and future attacks lurking just over the horizon, so to speak, we need to hone our skills so we can render to our leaders the help they need, the help they have a right to expect from us.

Thirty points out a a hundred leading to the *Green C Award* come from ECOM activities such as

exercises and monthly net attendance. That's heavy freight, and it is meant to encourage us to give due attention to ECOM.

It is helpful to remember what our mission is. "**The mission of MARS is to provide Department of the Navy and Department of Defense sponsored emergency communications on a local, national, and international basis as an adjunct to normal naval communications.**" Para 106., a., NTP 8 (C).

We cannot afford to ignore this---for in a moment when we think not...the unthinkable is likely to happen ...and we must be ready.

Why are we really not interested in ECOM? You have your own answer to that. How good it would be if we weren't so turned off by it. It is a discipline we need to master if we hope to measure up to what is expected of us. We have two outstanding mentors, NNN0ASZ GA and NNN0AS4 TWO AL, to shepherd us. For our part we need to graze in NTP-8(C), Annex D, pages D-1 through D-22, with emphasis on pages D-13 - D-22, and meditate on these instructions and put them into practice until we become comfortable handling multi-addressee messages.

Perhaps it would help us gain that degree of emergency communication expertise if we could envision the help we could provide through our services to proper authorities on behalf of all those who suffer from the devastation hurricanes and tornados visit on all who are helpless in the path of these storms.

NNN0ASZ and NNN0AS4 TWO believe in us, and NNN0DOM trusts and depends on us, as do those who, in the future, will trust us not to let them down in their hours of need. It may be that terrorist acts in time to come will impress upon us the urgent need to be able to respond on a moment's notice without having to look desperately for our copy of NTP-8(C), and find Annex D, and turn pages until we find the form we're looking for, and then turn to our computer. ---

The **Central Area Newsletter** is published for the enjoyment and edification for Navy-Marine Corps MARS members. The contents **do not** reflect official Navy positions. EDITOR: Ben NNN0JQC/NNN0ASG EIGHT. 3301 Shannon Road, Albany, GA 31721. E-Mail: nnn0jqc@navymars.org. Central Area Director (NNN0ASG IL): ITC Michael Jeffries USN. Dave, NNN0ASG ONE MI. Curtis, NNN0AS4 GA. Roger, NNN0AS5 MI. **This is your newsletter.** In order to keep it going, your input is encouraged. Send your articles to the above e-mail address.

Illinois ECOM Exercise

By Dennis NNN0GAP/LHK IL

Illinois Navy-marine Corps MARS held its quarterly ECOM exercise at the beginning of December. The scenario used consisted of communications outages caused by a large earthquake occurring in the vicinity of the New Madrid Fault.

The greatest earthquake risk east of the Rocky Mountains is along the New Madrid fault system. Damaging earthquakes are much less frequent than in California, but when they do occur, the damage can be far greater, due to the underlying geology.

The New Madrid fault system, or the New Madrid seismic zone, is a series of faults beneath the continental crust in a weak spot known as the Reelfoot Rift. It cannot be seen on the surface. The fault system extends 150 miles southward from Cairo, Illinois through New Madrid and Caruthersville, Missouri, down through Blytheville, Arkansas to Marked Tree, Arkansas. It dips into Kentucky near Fulton and into Tennessee near Reelfoot Lake, and extends southeast to Dyersburg, Tennessee. It crosses five state lines, and crosses the Mississippi River in at least three places.

In this exercise, the area of simulated communication blackout involved a small section of central Illinois and all of southern Illinois south of Interstate Highway 70. I-70 runs roughly diagonally from St. Louis, Missouri through Effingham, Illinois and on to Indianapolis, Indiana in a northeasterly direction.

In all, 13 messages were passed both by phone and digitally using the MARS Data System (MDS) by 10 participating stations. These included an EEI message, an implementation message, 10 Situation Reports (SITREPS) including a consolidated SITREP and a Termination Message. The exercise was designed to review ECOM net procedures and SITREP preparation and delivery for individual MARS members. In addition, due to marginal band conditions, valuable practice was gained in relaying traffic and reassignment of ECOM net responsibilities such as alternate NECOS', liaison station and primary data station.

The "rolling thunder" exercise scenario, due to the proximity of the New Madrid Fault to southern Illinois, is run at least biennially. Stations have been encouraged to involve their local EMA, RACES and ARES entities in MARS exercises. In several instances, our Peoria, IL station, NNN0TDC has involved the local Naval Reserve Center.

Presidential Wisdom

Winston Churchill: Politics are almost as exciting as war, and quite as dangerous. In war you can only be killed once, but in politics many times. Some men change their party for the sake of their principles; others their principles for the sake of their party. Personally, I'm always ready to learn, although I do not always like being taught. **Charles De Gaulle:** Treaties are like roses and young girls---they last while they last. I have come to the conclusion that politics is too serious to be left to the politicians. **Dwight D. Eisenhower:** I have found out in later years that my family was very poor, but the glory of America is that we didn't know it. Some people wanted champagne and caviar when they should have had beer and hot dogs. Though force can protect in emergency, only justice, fairness, consideration and cooperation can finally lead men to the dawn of eternal peace. There are a number of things wrong with Washington. One of them is that everyone is too far from home. **John F. Kennedy:** "And so, my fellow Americans, ask not what your country can do for you, ask what you can do for your country. Let us never negotiate out of fear but let us never fear to negotiate. A child not educated is a child lost. Those who make peaceful revolution impossible will make violent revolution inevitable. The energy, the faith, the devotion which we bring to this endeavor will light our country and all who serve it."

Ham Shack Grounding System

By Guy Phillips*

Perhaps one of the most overlooked aspects of setting up a Ham Shack is a ground system. This piece will deal with setting up a simple, yet effective, ground system that can be installed in a short period of time with a minimum number of tools. (Antenna/Feedline/Tower grounding was intentionally left out, as that is a topic in itself)

First, you will need three parts:

- 1 - A good ground rod.
- 2 - A buss bar if you have more than one unit to ground.
- 3 - Ground wire to tie the whole everything together.

1 - The Ground Rod.

I talked with several other Hams and people from our local power company. They all agreed on one thing: you need a full sized 10-foot rod to be effective. This length will almost guarantee that the rod will stay in contact with moisture in all but the driest years. The ground can dry out to quite a depth during long hot dry periods, leaving shorter four to five foot rods useless. The rods must be kept moist to give a good ground, but more on this later.

2 - The Buss Bar.

The bar is usually made from copper because of its conductivity. The bar need not be large. 3/4 of an inch wide and 10 inches long will allow you to ground five to six pieces of equipment on it with no problems at all.

3 - The Ground Wire.

I ended up selecting 10 gauge copper wire that was covered in a heavy vinyl jacketing. What kind of wire to use is open to all sorts of opinions. I picked the 10 gauge as it was readily available and, although stiff, you could work with it fairly easily. A coated or insulated wire was chosen to make life easier for me. By using a coated wire it meant I could run the wire easier as I did not have to worry about it touching objects that are conductive in nature. Your ground wire must never touch any thing conductive, as it will ruin the ground. A clear and unrestricted path from the radio(s) to the ground rod is a must and coated wire gives you more options of how and where to run the wire.

Now that all of the parts have been purchased we can start on a simple but effective ground system that will last for years. You must first of all choose a site for the rod to be put in. One very important thing to consider is to keep the run of ground wire as short and as straight as possible. This will insure a better system. Keep the rod as close to the side of the house that your shack is located. If your home is like mine, you may have underground telephone and gas lines as well as water and sewer lines, so please call your local utilities to have them located before you start putting in a ground rod. You do not want to drive your ground rod into any of these lines. Putting a ten-foot metal rod into a water or gas line can ruin your day!

Once you have selected your spot you will have two options: 1) You can pound the rod into the ground leaving about 8-10 inches of it above ground; 2) Or you can go for the deluxe option. I recommend this latter route, as it will, over time, help you keep the ground rod damp during dry times. This involves more work but if you live in climate like mine where the weather varies over a large spectrum or has long dry spells it is worth the extra effort. Also if you have heavy clay soils during rains the water will have an easier time to soak into the rock pit instead of running off. You can mark the ground where you wish to put the bar and measure one foot in all directions from this point. Mark the area off and then dig a hole in the area.

This will result in a two-foot square or diameter hole depending on how you dig it out. Either is acceptable. You should dig a hole that is about 2 feet deep, more if you wish. Once the hole is completed place the tip of your rod in the center of the hole. You can now pound the rod into the ground leaving it the 8 inches above ground level (not the bottom of the hole). Have a friend help hold the rod, as it will move around as you pound it in. Be careful not to hit your friend, as this may hurt the relationship as well...

Once the rod is in place test it to insure it is in tight. Try pulling and wiggling it to see if it moves. If it is in tight you have been successful. If it is close to a foundation or is in loose or sandy soil it will move around. This will not produce a good ground, so check it out. If you went the deluxe route you must now fill the hole with rock. Insure it is hard rock that will stay loose. Rock such as limestone is of no use as it will break up and form a hard packed area. You need loose rock fill that will not pack over time. You may also want to put in a bag of rock salt before the rock. This salt, once wet, will start working on the rod to give better conductivity. This rock pit is put into place for one important reason: moisture. During dry periods, water the rock pit to insure moisture is getting down to the lower levels of the rod. The neighbors may kid you about it so if you embarrass easily do it at night.

The next step is to install your buss bar in your shack. You can make one or buy one ready made. To build one just take a flat piece of copper and drill two holes in it. One at either end that will act as anchor points to mount it on the wall as near as possible to you equipment. You can now drill as many holes as you have pieces of equipment plus one more for the common lead into the bar. This will mean if you have four pieces of equipment to ground you will need: Two holes to mount the bar, one at either end. Four holes for the equipment between the two anchor holes. And one hole for the common lead, also between the anchor holes.

Each of the holes, except the anchor holes at the top and bottom, will be drilled to put in a bolt and washer to attach the radios etc to. Use what ever you have at hand. Put in the bolts and washers into the pre-drilled holes. Using the two mounting holes screw the buss bar to the wall near to your equipment. Try to keep it centrally located to keep leads to the equipment as short as possible.

Now that the bar is mounted run short straight pieces of heavy wire from each piece of equipment to the buss bar. You should use coated wire here to insure no wires touch each other or anything else. This is very important. Attach the other end of the wire to the lowest bolt and work your way up to the top. Insure the wire is under the washer so it presses the wire onto the buss bar insuring a tight and solid contact fit. This is a must.

You can now attach a run of wire to the common at the top of the bar and run it to the ground rod outside. Once again insuring a solid contact. If your rod had no built in clamp you can use metal strapping to get a solid tight fit to the rod. When you connect any end of the wire to any piece of equipment or the buss bar or ground rod, insure you strip the wire and then using sanding or emery cloth to clean the bare wire to insure there is a clean contact. You should use washers on binding posts to wire up the equipment. This will insure a solid contact. Loose contacts are of no use so make sure all contacts are good ones.

Your ground system is now completed. Maintenance is little if any. You should from time to time check the connections to insure they are tight and in the case of the ground rod connection there is no corrosion. It may need to be cleaned once a year. When it is dry water your rock pit to insure a good ground year round.

That is it. Good Luck

* - The author of this article, Mr. Guy Phillips, was one of the first amateur radio operators in Cumming, GA. He was an Elmer to NNN0HQM GA, helping Vic get his first radio shack set up when he got out of the Navy in 1959. Mr. Phillips died twelve years ago. NNN0HQM saved this ground system write up and sent it in for inclusion in this issue of the Central Area Newsletter. Good, efficient ground systems are an important part of our radio shack, that is why this well-written article is included for the information and encouragement of all.

A Discussion of Broadband Over Power Lines (BPL)

Compiled by: Dennis, NNN0GAP IL

Broadband over Power Lines (BPL) is a technology that permits the transmission of digital signals over standard electrical utility power lines. The digital data may include internet data from an internet service provider, control and messaging traffic used by the power companies themselves or other digitized forms of information. The idea of sending data through the power distribution network is not new. Utilities currently use low frequency signals (LF) for network control and telemetry (typically < 0.200 MHz). Schools have used the carrier current system for “campus radio” systems that operate in the AM band (0.530 – 1.700 MHz) for a number of years. What makes BPL different is that it uses frequencies between 2 and 80 MHz in the high frequency (HF) band.

The proposed benefit of BPL to the consumer is that it does not use telecommunications lines, television cable systems or satellite downlinks to provide a signal of interest to individual business or households. Instead, BPL employs the already existing infrastructure of the power company grid as the carrier mechanism of the digital signal. The consumer employs a modem that connects to a standard 120 VAC, 60 Hz wall outlet to receive the service and pays a subscription fee much like that collected by Internet Service providers (ISPs).

The mechanism of BPL begins with the modulation of a high frequency carrier in the range of 2 – 80 MHz with digital signals from the internet or other information source. The modulated HF carrier is injected into the utility power line using a frequency division multiplexing technique which permits co-transmission of the relatively low power radio signals and medium voltage electrical power. The radio signals are introduced into the utility grid at specific points and travel through the transmission lines and step down utility transformers to subscribers’ homes and business. Very little modification of the power transmission infrastructure is required. The technology portion of the system rests with the multiplexing and isolation and signal recovery techniques.

The Federal Communications Commission (FCC) has been working on a set of rules and sanctioning BPL testing in various communities across the U.S. The BPL system comprises an unlicensed service to be governed by FCC Rules Part 15. Part 15 covers low power consumer electronic devices such as cordless phones, garage door openers, TV remotes controls and similar equipment. BPL modems use silicon chip integrated circuit technologies similar to those employed in cable and computing operations. Like other types of digital signal processing (DSP), the technology has become such that multiplexing relatively weak communications signals into high power electric distribution lines is readily feasible.

FCC Rules Part 15 is part of Title 47 of the United States Code (47 USC) which relates to unlicensed devices that generate radio frequency (RF) energy whether the RF is intentional, unintentional or incidental. Some of the provisions of Part 15 specifically relate to non-interference with other licensed, radio services and that portion is of interest to radio services including amateur, aviation, commercial short wave and some government interests such as the Federal Emergency Management Agency (FEMA).

While BPL, in theory, may represent an ideal situation for internet information exchange for people in rural areas, many radio engineers and officials whose agencies use various wireless services are concerned about BPL's ramifications. The concern lies in the potential of BPL to interfere with critical and important radio communications activities such as police and fire protection, aviation, amateur emergency, military affiliated radio systems (MARS), and other services which are important to the national security. One of the strongest voices of concern is the amateur radio community whose emergency capabilities, not to mention their day-to-day operations, may be threatened. BPL subscribers themselves may be adversely affected by the electromagnetic fields that are generated by the licensed and unlicensed transmitters in the course of their operation. Of major concern is the fact that power distribution lines are not shielded as is coaxial cable and the BPL frequencies lying within the spectra assigned to other radio services.

There are currently three major categories of power line communications (PLC), two of which use BPL:

Access PLC uses electrical distribution lines, overhead or underground, to provide broadband Internet access to homes and businesses. This is currently in the developmental and testing stages.

In-building PLC uses the electrical wiring within a building to network computers. Most systems use the HomePlug standard which provides protection for amateur and other radio service frequencies through notch filtering.

Control PLC operates below 500 kHz, and is used by electric-utility companies to control their equipment using the power-lines as transmission lines. These systems are not a problem to other services, although it is interesting to note that utilities successfully lobbied against an amateur very low frequency (VLF) allocation, claiming that amateur transmissions could disrupt their communications.

Access PLC is the newer BPL technology used to carry broadband traffic over medium voltage power distribution lines. BPL modems that electrical utilities and their sub-contractors can install on the distribution network are currently available. Medium voltage lines are those that typically run along roadsides or underground and often contain three phase power of several thousand volts prior to step down for consumer usage. A single phase is often sufficient to power a number of households along a residential street with the three-phase going to industries and businesses.

In-building PLC products have been relatively easy to make compliant with Part 15 requirements and pose little threat to the licensed radio services at large. In building PLC is a home or business networking technology that uses transmission standards developed by the HomePlug Alliance. Products for in home networking use standard 120 volt electrical outlets for their signal dissemination and are available at many home improvement stores. These devices are used for in-home computer networking, remote control lighting, HVAC applications, etc. HomePlug uses a combination of OFDM (orthogonal frequency division multiplexing) and DQPSK (differential quadrature phase shift keying) to send data through power lines within the home. Carrier frequencies are between 4.5 and 21 MHz. The modem output has notches at 3.5, 7.0, 10.1, 14.0, and 18.1 MHz to reduce interference to amateurs and others. Data throughput is greater than 10 Mb/sec

Access PLC systems relating to BPL currently under development are electrical current systems that also use OFDM (orthogonal frequency division multiplexing) in combination with some type of phase shift keying (PSK). Carrier frequencies are often between 2 and 30 MHz (HF), however no filtering provisions are made to protect other users of the HF/VHF spectrum. The data throughput of these systems is generally greater than 10 Mb/sec (high speed). Inductive couplers are used to connect BPL modems to the medium voltage power lines. The inductive couplers transfer the communications signals onto the power line by wrapping around the line without directly coupling electrically to it. The major challenge is delivering the communications signal from the medium voltage distribution to the low voltage 240/120 volt line through the residential step-down transformer. The ubiquitous canister step down transformers change the impedance, restrict the bandwidth and tend to block the broad band communications signals. This problem has not been insurmountable, however, and several technologies are available to alleviate any bandpass difficulties.

As discussed above, interference issues between unlicensed devices and those of the licensed services are governed by FCC Part 15 Rules. All electronic devices sold in the U.S. must meet FCC established RF emissions limits. BPL signals are no exception to these. When BPL modems are installed on underground lines, the signals are shielded by the conduit in which the lines are run and by the earth over them. As such, the signals are unable to radiate any distance and are therefore less likely to cause interference. Overhead power lines, however, act as huge antennas and pose the potential for signal radiation of considerable distances.

On April 23, 2003, the FCC put forth a Notice of Inquiry to the public supporting the potential of BPL technology and seeking to set standards in practice for its implementation. Immediate opposition came from the American Radio relay League (ARRL) and the Federal Emergency Management Agency (FEMA) both claiming that BPL has a serious potential for harm causing interference and under Part 15, must be proven to exhibit non-interference to any licensed service. Depending on the bandwidth the FCC eventually allocates for BPL, problems may be caused in the following licensed services:

AM Broadcast Radio – 535 to 1700 Khz

Shortwave/Amateur Radio – 3.0 MHz to 26.1 MHz

CB Radio – 26.96 MHz – 27.42 MHz

Television – 53 MHz to 88 MHz (Channels 2-6)

FM Broadcast Radio – 88 MHz to 108 MHz

Aircraft Communication/Navigation - 108 to 137 MHz

Television – 174 MHz to 220 MHz (Channels 7-13)

FEMA has been willing to permit the FCC to seek a compromise while the ARRL's position is that no compromise is possible because of the bandwidth proposed to be allocated to BPL directly overlapping the ham HF bands. BPL proponents claim that these issues have been dealt with although continued field testing will be the true indicator. While amateur radio operators are not directly opposed to BPL, great concern exists over the potential pollution of the radio spectrum which BPL poses.

To date, BPL test sites have been set up at a number of locations around the country and over 5,100 responses to the April 2003 Notice of Inquiry have been received. Most of these have been from radio amateurs and others using licensed services and opposing BPL due to its spectrum polluting potential. The FCC adopted a Notice of Proposed Rulemaking (NRPM) in ET Docket #04-37 with new requirements and measurement guidelines for BPL systems. Because power lines are unshielded, not designed to prevent radiation and can act as huge antennas, BPL represents a significant potential for interference for all users in the affected spectrum. In some studies, interference has been observed nearly a mile from the nearest BPL source. FCC Rules require that unlicensed emitters such as BPL must protect the licensed services and accept any interference generated by them during normal operations. Unlike garage door openers, and the like whose signals are of short duration, BPL would go on 24/7. The nature of BPL interference can vary, but because they operate in continuous blocks of spectrum, their sound is different from that of normal power line interference. BPL signals can appear noise-like or as a series of vary closely spaced carriers of less than 1 KHz separation. The carriers can be modulated, sounding like a telephone ring with an abrupt onset. Interference from Part 15 devices can be very pervasive. While a spurious garage door opener or a video game can be very localized and of short duration, BPL is much broader in scope.

The FCC recently closed off comment on the PLC docket. Hundreds of amateurs did comment on the problems with PLC during the comment period. Measurements need to be made. If a utility is deploying PLC in a particular area, measurements of the noise need to be conducted. The amateur community is uniquely suited to this task and

to this task and the FCC needs to know what and where the problems are. It is very likely that some form of PLC will be implemented – the economic potential is too great. It is important for amateurs to help steer the implementation so that their and other licensed services' frequencies are protected.

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SOMETHING TO CONSIDER

Scissors were invented by Leonardo da Vinci. The monkey wrench is named after its inventor, a London blacksmith named Charles Moncke. The postage stamp was invented by an Englishman named James Chambers in 1834. Before that time envelopes had stamps engraved on them. They were bulky, so Chambers' invention caught on immediately. Postage stamps were introduced to America in 1847.

More than 25 percent of the world's forests are in Siberia. Honey is the only food that does not spoil. Honey found in the tombs of Egyptian Pharaohs has been tasted by archaeologists and found edible. Celery has negative calories---it takes more calories to eat a piece of celery than the celery has in it to begin with. It takes 17 muscles to smile, 43 muscles to frown.

The first letter of every continent's name is the same as the last: AmericA, AnrarticA, EuropE, AsiA, AustraliA, AfricA. Until 1796, there was a state in the United States called Franklin. Today it is known as Tennessee. Maine is the only state in the United States whose name has only one syllable. Ninety-seven percent of the world's water is in the ocean. More Americans have died in automobile accidents than have died in all the wars ever fought by the United States. Babe Ruth, besides holding the world lifetime record for home runs up to the 1970's, holds the world record for strikeouts as well. A ten gallon hat holds less than a gallon.

The only man-made structure visible from space is the Great Wall of China. A person cannot taste food unless it is mixed with saliva. For example, if a strong-tasting substance like salt is placed on a dry tongue, the taste buds will register nothing. As soon as a drop of saliva is added and the salt dissolved, however, a definite taste sensation results. This is true of all foods. Try it.

When astronauts remain weightless in space for prolonged periods, scientists have discovered that their bones lose a measurable amount of weight and thickness. This means that weightlessness actually causes human beings to shrink. It is estimated that millions of trees in the world are accidentally planted by squirrels who bury nuts and then forget where they hid them.

Spiders have transparent blood. The word "fan." meaning an admirer or a devotee, is short for the word "fanatic." A Japanese soldier named Shoichi Yokoi was discovered hiding deep in the jungles of Guam in 1972, living on a diet of rats, snails, frogs, insects and wild nuts. He was there when I arrived on Guam in October 1945, and when I was stationed at the Naval Hospital in 1969. He evaded notice and capture for 27 years. When finally persuaded to surrender, he was examined by doctors and they declared him to be in normal health. After some time in civilization, he met a 44 year old widow. The two fell in love, married, and for their honeymoon...went to Guam!

ARE YOU SLIPPING????

By Charlie NNN0AS4 FOUR KY

I would like to call attention to the laxity of attention to details in the ever day use of procedures. For the most part, our Region is composed of veteran members with a number of years experience. Those are the ones I would like to reach today. Our newer regular members are very conscious of what they should do or not do because it is still fresh in their mind. The rest of us, because of familiarity, tend to drift into a pattern of operation until we are not aware of how we are operating. When you have been in MARS that long you should stop and examine your entire MARS operation. In fact, it is a good idea to do this fairly often.

Let me point out some of the things I have noticed lately while listening to nets around the Region: You would not think something as basic as "Over" or "Out" could be forgotten, but it is. Remember to use "Over" if you expect a reply and use "Out" if you do not. Date-time-group of a message is another pitfall. The unwanted proword "Figures" will rear it's ugly head either at the beginning of the DTG or on the year at the end. It just seems to slip out and I expect the user realizes immediately that he made a boo-boo but it is too late, so he goes on. The use of prowords to get fills is another item we tend to do incorrectly. We have five ways to ask for a fill: "Say again word after ,,,,,," (or word before), "Say again all after" or all before, "Say again last known word to the next known word". No place will you find a circumstance where you will combine two of the five to request a fill. Please do not request "Say again all after a word to all before a word ". This is one of the most common errors I hear in requesting fills. Please remember the distinction between directed and free nets. It is very hard for us to be, at least in our perception, impolite. I think that is what makes us say please and thank-you or use first names on a directed net. In this regard, I think it is a good idea for NECOS to get help from a relay station to let every one know when the net is free especially on Region nets when copy is difficult.

On another subject, I would like to remind some members that despite constant reminders from NECOS, they are not letting up on their mike buttons in the middle of their check-in to see if any one else is talking. I know when the skip is long stations cannot hear other stations in their state, but you can listen to their check-in and know they didn't pause. You need to get in the habit of pausing so you will do it without conscious effort. While we are talking about check-ins let me say again, do not call in on somebody's coattails. I mean that if you cannot hear NECOS don't call in behind some other station in your state because you won't know whether you are checked in or not. Wait until you can hear a station make a net call.

We are starting a New Year, let's all try to improve our MARS operations so that we will be able to handle those Ecom exercises or actual event with skill and dexterity. Believe me, how you conduct your day to day MARS net, is the way you will operate Ecom nets when the chips are down.

Thanks for reading, Charlie, NNN0AS4 Four

Military Wisdom: "Aim towards the Enemy." Instruction printed on US Rocket Launcher. "When the pin is pulled, Mr. Grenade is not our friend." U. S. Marine Corps. "Any ship can be a minesweeper.....once." Anon. "Though I Fly Through The Valley of Death, I Shall Fear No Evil, For I am at 80,000 Feet and Climbing." ---At the entrance to the old SR-71 operating base Kadena, Japan. "Never trade luck for skill." "Flashlights are tubular metal containers kept in a flight bag for the purpose of storing dead batteries." "A pilot who doesn't have any fear probably isn't flying his plane to its maximum" ---Jon McBride, astronaut.

As the test pilot climbs out of the experimental aircraft, having torn off the wings and tail in the crash landing, the crash truck arrives, the rescuer sees a bloodied pilot and asks, "What happened?" The pilot's reply: "I don't know, I just got here myself!" --Attributed to Ray Crandell, Lockheed test pilot. "If the enemy is in range, so are you." Infantry Journal. "You, you and you...Panic. The rest of you, come with me." U. S. Marine Corp Gunnery Sgt. "Five second fuses only last three seconds." Infantry Journal. "The only time you have too much fuel is when you're on fire." "Blue water truism" There are more planes in the ocean than submarines in the sky." ---From an old carrier sailor.

TRAINING, IS IT FOR ME?

By "Mike" NNN0IBM FL

I bet you don't remember your first training program! We all went through it, everyone does. Some listened more than others, some learned faster than others and then there were those of us that were just plain stubborn! However, we all passed and pants became the uniform of the day.

Did you ever notice that when you think of "training" you automatically think of "learning" and in doing so, you often change your behavior? You attend training when you enter the MARS program; you bring with you your knowledge and expertise of amateur radio and the habits you've formed. In MARS, you learn a different approach to contacting stations; you change your behavior. This happens all through your life, new knowledge, and new behavior-- - of course when we reach the golden age, we're so smart, we think we don't need any training. WRONG! There are many training roads to travel, opening up opportunities for self-improvement and self-advancement. We should never stop learning!

I read this in an e-mail recently and thought it rather interesting: "Our senses cannot always be trusted. Our mind is the final arbiter of truth."

I urge you to take advantage of training programs and/or courses. Check out the MARS National Website. (<http://www.navymars.org>) There are links there to training information as well as courses available to all MARS members.

Another website that should be of interest to many of you is: <http://training.fema.gov/EMIWeb/IS/is700.asp>. In order to comply with various Homeland Security Presidential Directives (HSPD 5 & 8), I've been informed by our Florida State Special Projects Officer, that NIMS and ICS will be critical to the operation of all organizations operating in disaster situations. NAVMARCORMARS members may want to consider taking the following offered courses: ICS-100, ICS-200 and IS-700.

In Florida we offer weekly training every Thursday evening. On our other nets during the week, it is not unusual for our GAL FOUR to discuss pro-words, discipline, and message format or to correct some irregularity that may have occurred on previous nets. Training is never meant to embarrass any one; it is used not only to correct but also to enlighten, and to challenge the grey matter.

Speaking of challenges, dust off the cobwebs and try something like this to improve your memory. Let's say your wife wants you to go to the grocery store but you don't want to be seen carrying around a grocery list. Have some fun and see what you can do. First, read the grocery list, for example: bread, milk, eggs, coffee, lettuce, tomatoes, potatoes, hamburg, butter and cokes. Now make a story of the words.

Here would be one: I use milk in my coffee and butter on my bread. I like potatoes, tomatoes, cokes and lettuce - head. And if I forget the wife's hamburger and eggs, believe me, I'm dead.

You are not only firing up some brain cells, you are improving your memory, and you are using your imagination. Your wife will look at you and wonder how you could have remembered everything when you left the list on the kitchen counter. Listen to the training lessons, take courses and remember observing is not doing. Training doesn't hurt; it helps you, as the saying goes, to "be all you can be"!

The answers to the crossword puzzle, page 14, will be printed in the *Central Area Newsletter* coming out next month, March. And with next month's issue there will be another crossword puzzle, thanks to Bob, NNN0XYA Editor, MINNESOTA MARSGRAM Newsletter, and Tim, NNN0XEE, Minnesota State Director. If you want to read truly outstanding newsletters, go to the web site, go to Region Five and look for MN & Ohio newsletters.

Good News For ECOM Exercises

Taken From NNN0DVG 02/05 – Jim, NNN0AS4 TWO AL

A. NTP 8 (C)

B. REGION FOUR OPERATIONS GUIDE OF 30 OCT 03

C. NNN0ASG 251600Z MAR 04 (CENTRAL AREA BCST 04/04)

THE NET WAS CALLED BY NNN0AS4 TWO AT 1548Z ON ASSIGNED FREQUENCY NFH.. WELL DONE TO THOSE CHECKING IN ON EMERGENCY POWER. THIS NET IS A GOOD TIME TO MAKE A MONTHLY TEST. REMEMBER TO KEEP YOUR GENERATOR FUEL CLEAN AND FRESH AND USE A FUEL STABILIZER.

REMINDERS FOR 2005:

A. PER REF A PARA 106 ECOM IS OUR MOST IMPORTANT MISSION. DIRECTOR REGION FOUR'S STRONG SUPPORT OF THIS MISSION IS EVIDENT IN THAT 30 PER CENT OF ANNUAL 'GREEN C' AWARD IS BASED ON ECOM ACTIVITIES. ECOM POINTS ARE ALLOCATED AS FOLLOWS:

- 1 POINT FOR QUARTERLY ECOM EXERCISES (4 POINTS TOTAL)

- 0.5 POINT FOR QUARTERLY ECOM PLAN REVIEW (2 POINTS TOTAL)

- 2 POINTS FOR MONTHLY ECOM NET ATTENDANCE BY STATE DIRECTOR OR ECOM ASSISTANT (24 POINTS TOTAL). ECOM NET ATTENDANCE POINTS ARE ASSIGNED AS FOLLOWS:

-- 2 POINTS IF STATE DIRECTOR OR STATE ECOM ASSISTANT CHECKS IN. IF NEITHER THE DIRECTOR OR ECOM ASSISTANT CHECKS IN:

-- 1 POINT IF ANY STATION REPORTS AS GUARD FOR ECOM ASSISTANT

-- 0 POINTS IF ANY STATION CHECKS IN

-- MINUS 1 (-1) POINT IF NO STATION CHECKS IN

B. MINIMUM REQUIREMENTS TO RECEIVE CREDIT FOR ECOM EXERCISES ARE:

(1). EXERCISE NOTIFICATION MESSAGE (REF A PARA D820)

(2). IMPLEMENTATION REPORT MESSAGE (REF A PARA D710)

(3). ONE SITREP MESSAGE (REF A PARA D720)

(4). OPERATIONS REPORT MESSAGE (REF B ANNEX C. PARA 7.C.(2))

(5). OVERALL REPORT (REF A PARA D730)

NOTE 1: FOR EXERCISES, ALSO REPORT PER CENT MEMBER PARTICIPATION IN THE OVERALL REPORT PARA 3.

NOTE 2: ALL EXERCISE MESSAGES MUST BE RCVD VIA MDS

C. CRITIQUE YOUR EXERCISES ON THE AIR AS THE LAST PART OF YOUR EXERCISE. WHILE THE EXERCISE IS FRESH IN MIND IS THE MOST EFFECTIVE TIME FOR YOUR CRITIQUE. ENCOURAGE DISCUSSION.

D. ECOM MESSAGES ARE ALL 'PRO FORMA' MESSAGES. THEY SHOULD FOLLOW EXACTLY THE FORMAT IN REFS NOTED PARA 4.B ABOVE. ENSURE MESSAGES ARE ADDRESSED TO ADDEES AS REQUIRED REFS A THRU C.

E. PAY ATTENTION TO EXERCISE MESSAGE MARKINGS. 'MARS EXERCISE' IS

FOR EEI MESSAGES ONLY. ALL OTHER ECOM EXERCISE MESSAGES USE JUST 'EXERCISE' ON THE CLASSIFICATION LINE AND AS THE LAST LINE OF THE MESSAGE. ON OTHER THAN EEI MSGS YOU MAY ADD THE EXERCISE NAME AFTER 'EXERCISE'

F. DO NOT USE AN EEI IDENTIFIER AS AN EXERCISE CODE WORD. THESE IDENTIFIERS SHOULD ONLY BE USED WHERE INTENDED IN EEI MESSAGES.

G. ENSURE YOU ARE USING THE LATEST VERSION OF REFS A AND B AND WITH ALL UPDATES ENTERED.

PROBLEM AREAS IN EEI MESSAGES CONTINUE TO BE THE FORMAT OF LINE NUMBER ONE (1), NO CITY/COUNTY OR TIME IN PARA 1.A, AND NO LOCATION AND STATION IDENTIFICATION IN PARA 1.G. BE SURE TO USE ZULU TIME IN ALL MESSAGES.

Permission for modifying this NNN0DVG 02/05 was granted by NNN0AS4 TWO AL

“Old Ironsides”

The **USS CONSTITUTION**, called “**Old Iron-sides**” because bullets and cannon balls could not penetrate her tough oak sides, was one of the first of the original six frigates that made up the U. S. Navy. This 44 gun frigate was built at the Edmond Hartt Shipyard, Boston, MA, in 1797. Her dimensions are 175 feet by 43 feet six inches by 16 feet seven inches, with a displacement of 2000 tons. The ship carried a crew of 450, and they were tightly packed! **Old Ironsides** was in the undeclared naval war with France (1798 - 1800) and was the Flagship of the Mediterranean squadron in the Tripolitan War, 1801 to 1805.

In the war of 1812, the **Constitution** won battles against the British frigates **Guerriere** and the **Java**. The battle against the **Guerriere** took place about 750 miles east of Boston on 19 August 1812; the naval action against the **Java** was fought off the coast of

Brazil on 29 December 1812. The **Constitution** made its last combat tour in 1814-1815. The ship was scheduled to be scrapped in 1830, but Oliver Wendell Holmes’ poem, “*Old Ironsides*” inspired a public movement to save it. School children sent in their pennies and many others dug into their pockets and keep the ship safe.

It was restored in 1925 and now the **USS Constitution** is the oldest commissioned ship in the United States Navy. It is moored at the Charleston Navy Yard, Boston, MA, and serves as a museum ship. Standing in the wardroom one day I was impressed by how low the overhead was! By standing between overhead beams, my bare head lightly brushed against the overhead and I made sure to bend a good bit when moving around the ship! “**Old Ironsides** is regularly turned around to present a different side to the pier.

Wisdom Of The Ages

“Every man of action has a strong dose of egoism, pride, hardness and cunning. But all those things will be regarded as high qualities if he can make them the means to achieve great ends.” “France has lost a battle, but France has not lost the war.” “Silence is the ultimate weapon of power.” “Since a politician never believes what he says, he is surprised when others believe him.” ---Charles De Gaulle.

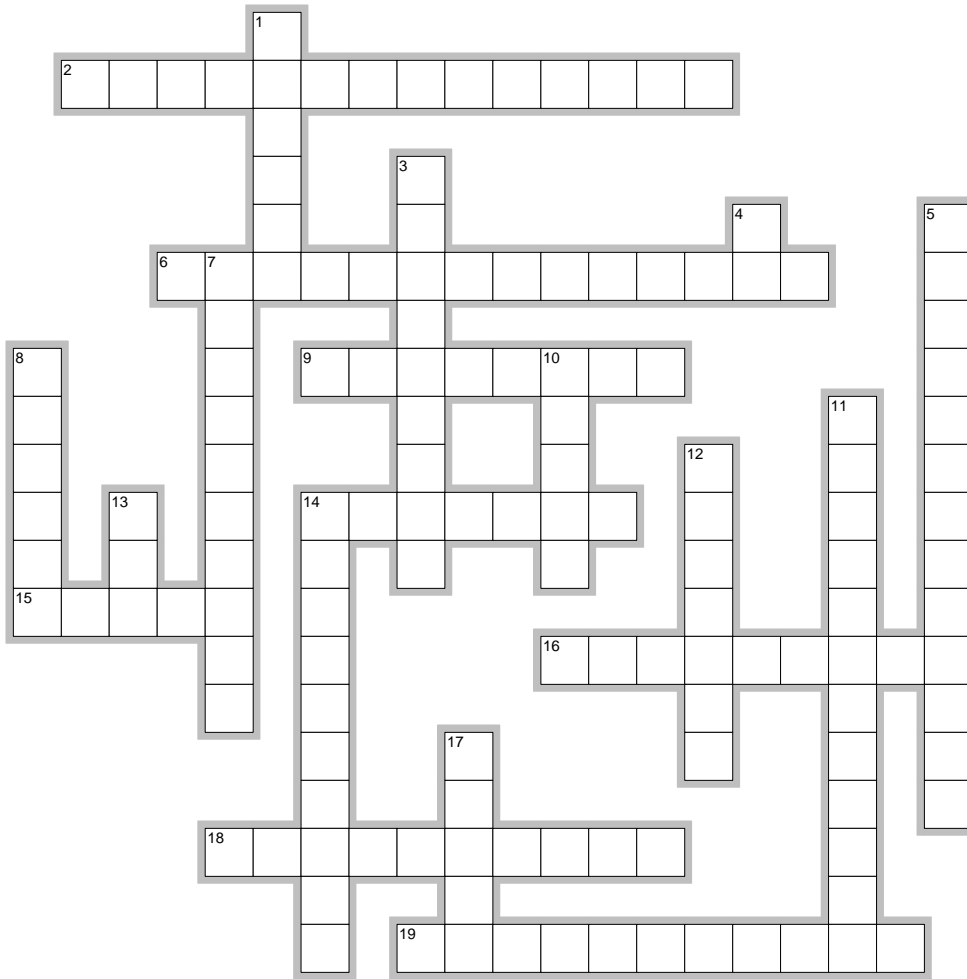
“When a man sits with a pretty girl for an hour, it seems like a minute. But let him sit on a hot stove for a minute -- and it’s longer than any hour. That’s relativity.” “I never think of the future. It comes soon enough.” “Solitude is painful when one is young, but delightful when one is more mature.” “He who can no longer pause to wonder and stand rapt in awe is as good as dead; his eyes are closed.” ---Albert Einstein

“Anyone who stops learning is old, whether he is twenty or eighty. Anyone who keeps learning stays young. The greatest thing in life to keep your mind young.” “My best friend is the one who brings out the best in me.” “Failure is only the opportunity to begin again more intelligently.” ---Henry Ford.

“Creditors have better memories than debtors.” “There are three things extremely hard: steel, a diamond, and to know one’s self.” “He was so learned that he could name a horse in nine languages; so ignorant that he bought a cow to ride on.” “If a man could have half his wishes, he would double his troubles.” “Love your enemies, for they tell you your faults.” “Who is wise? He that learns from everyone. Who is powerful? He that governs his passions. Who is rich? He that is content. Who is that? Nobody.” ---Ben Franklin

“Patience means self-suffering.” “The weak can never forgive. Forgiveness is the attribute of the strong.” “Cowards can never be moral.” “A ‘no’ uttered from the deepest conviction is better and greater than a ‘yes’ merely uttered to please, or what is worse, to avoid trouble.” “Honest differences are often a healthy sign of progress.” ---Mahatma Gandhi

“It is the trade of lawyers to question everything, yield nothing and talk by the hour.” “No man will ever bring out of the Presidency the reputation which carries him into it.” “Eternal vigilance is the price of liberty.” “He who permits himself to tell a lie once, finds it much easier to do it a second time.” ---Thomas Jefferson



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Across

2. EEI identifier for Earthquake
6. First message to be sent during an ecom situation
9. Word equivalents of PROSIGNS
14. Minnesota State Director Callsign
15. Continental United States
16. Message precedence reserved for very important messages
18. Location of Central Area headquarters
19. A message which is destined for two or more addressees and is of such a nature that the originator considers no addressee need be informed of any other addressees

Down

1. Situation Report
3. An emergency or disaster situation is imminent
4. First name of Chief Navy Marine Corps MARS
5. Region Five Director
7. VHF Repeater System
8. Phonetic for Q
10. Transmit this message to all addresses or to the address designations immediately following
11. City closest to where NAV is located
12. Minnesota MARSGRAM editor
13. Region Data Network
14. Location of MN MDS station
17. Proword for I have received your message, understand it, and will comply