



MINNESOTA MARSGRAM



Information for Minnesota Navy-Marine Corps. MARS Members

July, 2004

Volume 8, Number 7

NNN0ALL Minnesota

by NNN0GAZ Tim

Greetings to All,

Thank you to Al, KZC, for assuming the duties of Master of Ceremonies and organizer of the fifth (wow its been five years already) annual Minnesota Area conference. Al made all the necessary arrangements and developed the agenda for the conference. My hope is that all of you in attendance enjoyed the discussion and fellowship. Included in this issue of the MARSGRAM is a recap of the matters discussed at the conference.

One thing I particularly enjoyed about the conference was the reminiscing of most of those present about their time in the military. As one of those individuals who reached adulthood just as the draft was abolished and before Selective Service registration was even a concept, I cannot begin to imagine the debt people in my shoes owe you for your service. Thank you for the opportunity to listen in as you shared just a bit of your experiences.

As I write this, flags are still at half-mast for the passing of former President Ronald Reagan. Whether you agreed with his politics or not, one must admit that during his time there was certainly a change in the world -

the hostages in Iran were released with many of us only beginning to realize the impact the Mideast would have on our lives; the Berlin Wall fell and there were a host of other world changing events. A recent discussion among a number of my college friends brought us to the realization that this man was, as one put it "our president." While much older than my generation, this was the first president that many of us helped elect, held our breath during an assassination attempt, shared his triumphs, and realized how unfair life is when he wrote to the American public about his diagnosis of Alzheimer's. This time the passing of a president struck just a little closer to home.

Future events, the Region Five Conference will be held in Libertyville IL in October. Complete details will be forthcoming from Central Area Director ITC Jeffries. Please keep in mind that it will soon be time to submit nominations for Communicator of the Year and Member of the Year from Minnesota. If you have

someone you would like to nominate, please contact me so I can begin to gather the necessary materials for the nomination. Nominations from State Directors are due to the Region in September.

Welcome to our tango member, Lyle Nelson, NNN0APLT of New London MN. Curt, NNN0GAZ FOUR, and Lyle have been working on training already. According to Curt, Lyle has a sharp eye, already finding some inconsistencies in the training materials, which called for some correction. Welcome aboard Lyle.

Do you have a digital camera, know someone with a digital camera? How about taking a picture of your station and sending it to our Editor, Bob Reid for inclusion in the MARSGRAM. We published one photo a number of months ago and are waiting to see what other member stations look like. If you have ideas or an article you would like to submit, contact Bob, we're always

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The MINNESOTA MARSGRAM is published for the benefit of Amateur Radio Operators in Minnesota and other interested individuals. The contents DO NOT reflect official Navy positions.

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Content Contributions Welcomed and Encouraged

MINNESOTA TRAFFIC NETS

Designator	Frequency	Local Times
5G1B	Pri. NCE Sec. NBG Ter. NAR	18:30 Daily

MINNESOTA ADMIN. NET

5G4A	Pri. NCE	19:00 2nd Sunday
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MARS DATA SYSTEM

	Frequency
NN0DVD	NCO AFSK/USB
Intranet site	http://www.communityzero.com/mnmars



USS Ronald Reagan Holds Memorial for Namesake

By Journalist 1st Class (SW) Sean Linvill, Navy News Service

ABOARD USS RONALD REAGAN (NNS) — The crew of USS Ronald Reagan (CVN 76) held a memorial ceremony for their ship's namesake on the ship's flight deck in June.

During the memorial, Ronald Reagan's ceremonial guard fired a 21-gun salute and presented the ship's commanding officer with a shadow box holding the U.S. flag flown from the ship's mast June 5. Fifty additional Sailors volunteered for a state flag detail, which became the backdrop for the ceremony.

The ceremony gave the Sailors a chance to pay their respects and mourn the loss of the 40th president of the United States.

"President Ronald Reagan was a hero," said Capt. James Symonds, Ronald Reagan commanding officer, as he began his address to the crew. "He came to office at a time when I used to wonder if the presidency was just too hard...it seemed hard for anybody to get it right, but he made it look easy."

After the crew found out President Reagan had died, they began writing their condolences in a special book on the mess decks to send to Mrs. Reagan and her family.

Mrs. Reagan is the ship's sponsor, and gave the order for the crew to "man the ship and bring her to life" during the ship's commissioning in July 2003.

"When she christened this ship, she gave birth to a new family," said Aviation Boatswain's Mate (Handling) 2nd Class (AW) Cameron Fisher, ceremonial guard member.

Although the ship no longer carries the distinction of being named after a living president, Reagan's vision, character and legacy will live on in the hearts of the Sailors aboard.

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GAZ *cont'd from pg. 1*

looking for material to publish.

With summer here, we are in need of members willing to take on Net Control Station (NECOS) and Traffic Representative (TREP) duties as substitutes. What would be very helpful is if members, not currently performing these NECOS or TREP duties, would be willing to step in as substitutes and assist the regular NECOS and TREP stations. Operators currently working as NECOS and TREPS would appreciate your willingness to substitute, providing them with some relief.

Finally, with warmer weather and the opportunities to spend more hours outside, please don't forget our evening nets. We would like to hear for you during the spring and summer months. Don't miss the opportunity to participate in an evening net, an ecom exercise, or just fellowship with your fellow MARS members. Enjoy this issue of the MARSGRAM.

BT OVER



Aboard USS Ronald Reagan (CVN 76), June 7, 2004 - Machinist Mate 2nd Class Thomas Waller, from Lexington, Neb., writes a personal message in a book, which is going to be presented by USS Ronald Reagan's (CVN 76) Commanding Officer, Capt. James A. Symonds to Nancy Reagan during President Ronald Reagan's internment ceremony, while others wait in line to write their own personal message. The aircraft carrier Ronald Reagan is in the South Atlantic Ocean circumnavigating South America during its transit to its new homeport of San Diego. U.S. Navy photo by Photographer's Mate Airman Paul H. Laverty Jr.

Repairing Tubed Radios

by: Bruce Meyer NNN0BQH / W0HZR

Once in awhile one encounters a non-working family keepsake such as an old radio built back in the '30s or '40s. It may even be a communications receiver that deserves restoration. This article offers some guidance to minimize the pain of restoration or repair. Those of us who are accustomed to working with solid-state radios are not used to dangerous voltages. There are plenty of hazards in tube radios. Be careful!

A tube-type radio that has not been energized in several years should not be plugged into an outlet and switched on to see if it works. Instead, line voltage should be reduced to about 40 volts by the use of a series light bulb or a variable transformer. The technician gradually increases the applied voltage in approximately ten volt steps over a period of twenty minutes or so until full voltage is applied. At any given voltage setting, line current will fall slowly as the electrolytic insulating film re-forms within the capacitors. Failure to apply the re-forming procedure may result in excessive current flow and a blown rectifier tube or a burned out transformer winding. If re-forming does not result in a line current that is reduced with time, one or more of the filter capacitors must be replaced.

If the radio is not working but offers a friendly buzz when turned on, there is hope for success. When the set is completely silent, it may mean a power transformer is defective. These transformers can be hard to replace or repair if an exact duplicate is needed.

There are in general two classes of tube-type radios, the series filament or so-called "ac-dc" models, and the transformer powered ones. The former are as notorious as series-connected Christmas tree lights for burning out filaments. Once a tube filament fails, the others are sure to follow in short order. It is best to replace them all at the same time if you can afford to do it. Tube specifications including base diagrams can be found in older ARRL handbooks or on various web sites. Special safety precautions are in order when using test equipment with these sets as the chassis ground is often connected to one side of the power line. A one-to-one isolation transformer is a valuable asset.

In addition to tube failures, electrolytic capacitors are another possible problem. Frequently there are failures of electrolytic capacitors, interstage coupling capacitors and bypass capacitors, including those found inside IF transformer cans. Although cylindrical can electrolytic capacitors are becoming scarce, it is possible to obtain small tubular capacitors of similar electrical rating. Some repairmen install

the new capacitors inside the old (gutted) cans to preserve appearances. Others merely disconnect the bad capacitors and substitute the new ones nearby.

Resistors fail rarely unless they have been overloaded because a tube or other circuit component has drawn too much current. Failures caused by over current are marked by a baked appearance or a split body. High value resistors, one megohm or greater, sometimes change value significantly as the result of moisture infiltration.

If a tube's plate electrode glows red, it is likely that the tube also has a positive control grid due to leakage in an interstage coupling capacitor. A voltage check of all the control grid caps or pins with the tubes removed is the preferred diagnostic tool. It prevents tube and resistor damage due to overcurrent.

There are in general two methods of troubleshooting a radio receiver after basic visual inspection and replacement of obviously defective parts. These are Signal Tracing and Signal Substitution. Both methods require the use of a signal source and a signal detector. Sometimes

the radio broadcast station can be the signal source and the receiver the signal detector. It is best if the technician has access to a calibrated signal generator and an oscilloscope as well as a high impedance volt-ohmmeter.

In Signal Tracing, the detection device is connected close to the signal source, and then reconnected, one tube stage at a time, moving away from the source toward the audio output and noting the signal gain or loss. When signal failure is found, the search narrows to a defective component near the point of failure. Often the voltages on the electrodes of the tube will provide a clue.

In Signal Substitution, the signal source is connected to the audio output stage of the receiver, and then moved back, one tube stage at a time, toward the antenna connection until the audio output is lost.

In both methods the technician must remember that the signal frequency changes from RF to IF to AF as it progresses through the receiver stages from antenna to loudspeaker. When substituting a signal the sequence is reversed, AF to IF to RF.

Nearly all radio receivers are of the superheterodyne variety, having a local oscillator 455 or 465 kHz above the received carrier in the case of AM receivers, and 10.7 MHz above the received carrier in the case of FM receivers. One should always check the local oscillator for activity, as the

Tubes cont'd pg.5



'04 MN Conference Recap

The group heard from Tim Isom, NNN0GAZ about overall state operations and the state MDS switch. The update on switch operations were:

- The switch can now be remotely administered by Tim via HF.
- We have had one case of abuse from a non-Navy-Marine Corps MARS station accessing the switch and downloading the user file. At this point Tim (the sysop) has excluded this station from further connections to the switch. Members should periodically listen to switch traffic to see if we have any other situations of the same kind happening.
- Discussion about what would be needed to get remote VHF administration operational on the switch operational. Tim indicated a VHF rig would be required – any rig would do, even a crystal controlled rig, another serial card, and Tim would also have to get from Dave Ouellette the version of AA4RE for this setup. *(GAZ note – after further research, we would probably also need an antenna switch as well, the VHF antenna would be shared with EOC amateur radio operations, so during an emergency in Northfield we would need the ability to switch to the other rig, this should not be a major issue since only switch administration would take place via VHF – no traffic handling.)*
- Tim may upgrade the machine operating the switch to a pentium grade machine – not sure we would notice any improvements, but we have had one strange hardware failure that appeared then seemed to resolve itself.

Tim asked for feedback from the group on switch operations and any matters that he should address as State Director. Items brought up were:

- Possibility of putting MARS brochures on the website, either our public website or our secure intranet site – mainly for member download and printing when a member is going to a hamfest so he has something to give to interested parties.
- Standard receipt or Letter of acknowledgement of donations of equipment to the MARS program.
- Distribution of messages via email – do we send them to members (particularly inactive associate members) who are not routinely checking into the net. Some ISP's have issues with mailing lists.



MARS members attending the conference pictured left to right: Robert King NNN0SXU, Curt Dahleen NNN0BJJ, Mike Warren NNN0ACY, Tim Isom NNN0XEE, John Oehlenschlager NNN0EMO, Al Doree NNN0KZC, Bruce Meyer NNN0BQH, not pictured, Robert Olsen NNN0YWH. Spouses and guests also participated in the meeting.

- Net time – MN allotted net time is 0030-0130 on NCE. Region Seven, Nebraska has established a net at the same time running from 0100 – 0130 and frequently there is interference. This is a concern when there is an administrative, PSK or training net for MN.

Tim indicated he would look into these items.

Next up was Operations and Logistics. Bob Reid could not make it to the conference so he provided Tim with materials for review. Members were provided a net report handout and timelines for reporting so that Bob can meet deadlines for reporting to the State and Region.

Al, NNN0GAZ ONE, covered material regarding the PSK nets, emergency drills and future conferences. Al has run some tests on how fast it takes to transmit a message via PSK versus the same message via voice. At this point he is not entirely sure that for some types of messages – net reports, monthly participation reports that there is an advantage to sending them via PSK – there does not appear to be a lot of time difference. There was also a discussion about the procedure when a station chooses to transmit a message via PSK during a voice net. When would be the appropriate time

Conference cont'd pg. 5

Conference *cont'd from pg. 4*

for transmission – after all stations transmitting via voice have passed their traffic appeared to be the most agreeable – provided all the traffic is the same precedence.

Al also covered emergency communications issues and the need for ideas for drills. We don't have a state drill on the scale of Grecian Firebolt, sometimes just moving into an emergency net from a regular traffic net and passing a sitrep from each station would be good practice. Tim indicated that he would like to see more stations participate in emergency communications exercises – the mention of the word emergency net should not clear the airwaves.

Al also opened discussion of future State Conferences, should we continue to meet in Waite Park, which is central for many or would we want to consider a Twin Cities meeting at some point. The overall consensus was that where we were now meets our needs, is centrally located for members from further north. We will continue to keep our options open.

Curt, NNN0GAZ FOUR/ASG FOUR, reviewed what he has been doing with the training and instructor's manuals to bring them into agreement with NTP8C. Area/Region materials appear to be good references and notable since Curt indicated that other areas/regions have requested copies of Central Area material from which to model their manuals. Curt reviewed the following issues presented by members:

- Rogering multipart messages
Curt indicated the correct way would be to Roger by the Date Time Group and part number, since a multipart message should have the same DTG throughout, only the part number changes.
- Listing of traffic
Members referenced messages that are a retransmission of another message – examples would be Marine Corps Birthday message or Sec. Defense, Sec. Navy messages that ASA is entering into the MDS. The conclusion on this was that the message, in the absence of a subject line, should be listed by DTG and originator. So if the message is a message from Sec. Defense that is being entered into the MDS without a subject line the TREP would list by DTG and originator of the message in the MDS. For example the following would be listed as Routine 011447Z JUL 02 NNN0ASA – use the precedence, DTG and originator in the MDS system. If a message has a subject line then use it.

```
R 011447Z JUL 02
FM NNN0ASA VA
TO NNN0ALL
R 281756Z JUN 02 ZYB
FM SECNAV WASHINGTON DC//SN//
TO ALNAV
BT
UNCLAS
ALNAV 061/02 MSGID/GENADMIN/SN// SUBJ/INDEPENDENCE DAY MESSAGE TO THE UNITED STATES NAVY /AND MARINE CORPS// RMKS/1.
THIS YEAR, WE CELEBRATE OUR INDEPENDENCE DAY AS A NATION AT WAR. TWO HUNDRED AND TWENTY SIX YEARS AGO, THE DECLARATION OF INDEPENDENCE ESTABLISHED A NEW NATION. SINCE THAT TIME, THE UNITED STATES NAVY AND MARINE CORPS HAVE DEFENDED OUR GREAT REPUBLIC AND EMBODIED ITS PRINCIPLES OF FREEDOM AND LIBERTY. TODAY, THE UNITED STATES ....
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- Curt reviewed progress to date with our new member, Lyle Nelson, NNN0APLT, Lyle has already found some inconsistencies in training materials – so he has a sharp eye.
- With Curt's additional responsibilities at the area level, we are looking for a new Assistant to the State Director for Training.

Unfortunately Central Area Director ITC Michael Jefries nor Central Area Deputy Director David Ouellette could attend the conference due to other conflicts. We will continue to invite them and hope that we will see one or both at next year's area conference.

BT OVER

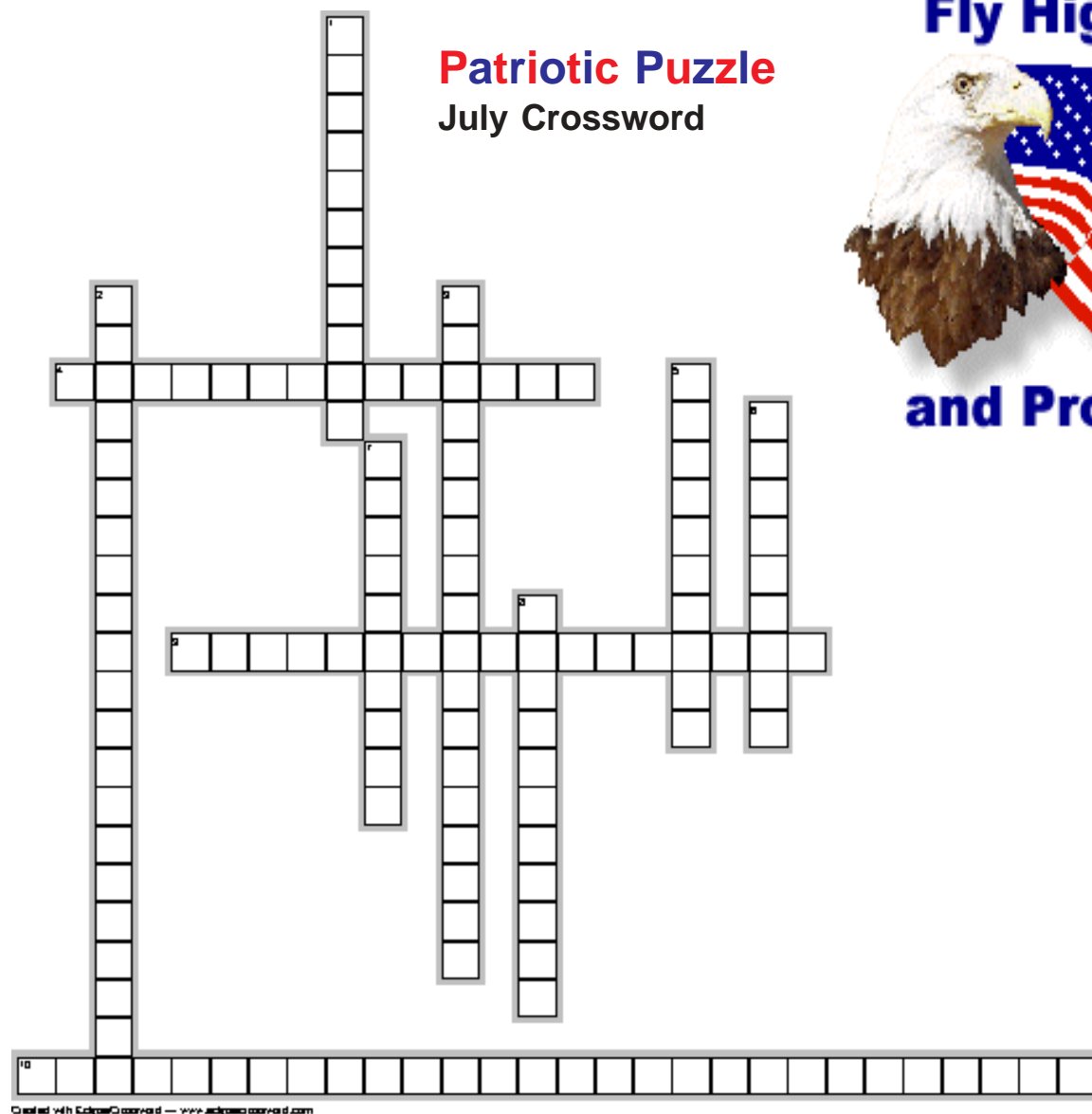


Tubes *cont'd from pg. 5*

signal cannot pass the converter stage without it. The scope should show an unmodulated sine wave at the oscillator coil.

When re-soldering a component always use rosin cored solder, as acid cored solder will destroy the connection in time. A 25 watt soldering iron is usually adequate. Too much heat can damage adjacent insulation.

BT OVER



Across

4. This American defected to the British during the Revolutionary War
9. This famous American, the first U.S. Secretary of the Treasury, spend the winter of 1777-78 with George Washington at Valley Forge.
10. These are the first words of the Declaration of Independence

Down

1. Paul Revere's occupation
2. This young Frenchman aided the American colonists in their fight against the British.
3. He was the King of England during the Revolutionary War
5. This American revolutionary led the rowdy Green Mountain Boys.
6. She sewed the first American flag.
7. The British hanged this American patriot as a spy in 1776
8. This was the first capital of the United States.

BPL Trial Scrubbed

Utility Cuts Short BPL Trial That Was Target of Amateur Complaints

from: *ARRL Newsletter*

Alliant Energy has called an early end to its broadband over power line (BPL) pilot project in Cedar Rapids, Iowa. The “evaluation system” went live March 30, and plans called for keeping it active until August or September. Alliant shut it down June 25. Ongoing, unresolved HF interference from the system to retired engineer Jim Spencer, W0SR, and other amateurs prompted the ARRL to file a complaint to the FCC on Spencer’s behalf demanding it be shut down and the utility fined.

Alliant Energy’s BPL Project Leader Dan Hinz says the ARRL complaint “certainly was a factor” in the utility’s decision to pull the plug prematurely but “not the overriding factor.” The main reason, he said, was that Alliant accomplished most of its objectives ahead of schedule. The primary purpose of the Cedar Rapids evaluation was to gain an understanding of BPL technology and what issues might be involved in a real-world deployment, Hinz explained. But, he added, regulatory uncertainty and other unspecified technical issues also factored into the choice to end the pilot early.

Hinz said Alliant is “mashing the data” to compile a written evaluation of the Cedar Rapids pilot, but the company has no plans at this point to move forward with BPL. Alliant did not partner with a broadband services provider, and it has no other BPL test systems in operation. The system used Amperion BPL equipment.

According to Spencer, five fixed Amateur Radio stations within proximity of the BPL evaluation system and two mobile stations formally reported BPL interference on HF. “The radio amateurs and Alliant Energy cooperated by sharing interference information,” he said. “Alliant Energy turned the BPL evaluation system off twice to allow collection of extensive BPL frequency and signal level data—with and without BPL.” He said Alliant and Amperion tried various “notching” schemes to rid amateur frequencies of the BPL interference with only limited success.

The system included both overhead and underground BPL links to feed 2.4 GHz wireless “hot spots” for end user access. Hinz said the area’s topography presented some challenges, especially with the wireless links. “I think in the end, we actually over-challenged ourselves with this specific pilot location,” he said. And, despite “substantial progress” in mitigating interference, Alliant decided at this point that “it wasn’t worth the extra effort” to resolve the thornier

technical issues, Hinz added.

As for any broader implications, Hinz says he’s always viewed BPL as a “strategic deployment technology,” not one a company could roll out just anywhere and expect to be competitive with existing broadband services such as cable and DSL. “At least that’s how we were looking at it,” he said. “You have to find the right areas with the right topography with the right concentration of certain types of customers,” he said.

“It’s never been in my mind that BPL has to compete with the speeds of cable today,” Hinz added. “It has to compete with the speeds of cable and the next best thing tomorrow as well, if it’s going to be usable well into the future.” He hinted that Alliant might want to take another look at BPL once the FCC has put BPL rules and regulations into place, and the technology has further evolved.

The ARRL’s formal complaint to FCC Enforcement Bureau Chief David H. Solomon called on the Commission not only to close down Alliant’s BPL field trial system but to fine the utility \$10,000 for violating the Communications Act of 1934 and FCC Part 15 rules. Commenting on the termination of the Cedar Rapids BPL trial, ARRL CEO David Sumner, K1ZZ, pointed out that Alliant had tried for more than 12 weeks to fix the interference problem to a station 600 feet from its installation.

“In the end,” Sumner said, “the interference was not eliminated except by shutting down the BPL system. Could the case against BPL deployment be any clearer?”

Spencer said he was happy with Alliant’s decision, and he was gracious in expressing appreciation to the utility for working with him. “And thanks also to the ARRL and the Cedar Rapids BPL Steering Committee for their knowledge and efforts in making a truly professional evaluation,” he added.

Still outstanding are some chronic power line noise problems Spencer has experienced.

BT OVER



5G1B Net Schedule

6:30PM 4007 kHz USB

Day	NECOS	Tfc Rep
Sun.	XYA	XEE
Mon.	KZC	KZC
Tue.	XEE	XEE
Wed.	BQH	BQH
Thu.	SXU	SXU
Fri.	ACY	OCF
Sat.	Rotating Duty (see below)	

Jul 3 KZC KZC
Jul 10 XEE XEE
Jul 17 BQH BQH
Jul 24 SXU SXU
Jul 31 ACY OCF



NNN0VEU Neil McMillin 7/8
NNN0XAY Skip Green 7/15
NNN0YWH Robert Olson 7/17
NNN0PNV Al Ringate 7/22

MN MARS Intranet site

<http://www.communityzero.com/mnmars>

MN MARS Homepage

www.mnmars.org

Don't be bashful, if the net has not been called by the net control station within 2 minutes, jump in and start things rolling.



Sunset on board the USS Ronald Reagan. US Navy Photo.

Test Your Analytical Skills: I Say Again Figures Seven!

Can you use four (4) 7s and any mathematical notation you wish to make four (4) 7s equal to 100?

Answer in the next issue of the Minnesota MARSGRAM

The Pie Solution - June

Rob Jarvik, New York, NY.

Courtesy of Ask Marilyn, Parade Magazine

Dennis can eat a pie in 6 minutes.

David can eat a pie in 12 minutes.

Robert can eat a pie in 14.63914507 minutes.

If they share the same pie, how long will it take the three guys to scarf down the whole thing?

Answer: Dennis gobbles at 10 pies per hour (PPH). David eats at 5 PPH, and Robert gets about 4.0986 pph. The answer- which should not surprise anyone-is, you guessed it, it took them 3.14159 (or *pi*) minutes



Independence Day
July 4th