ARES COMMUNICATOR

Information for Scott County Amateurs

November, 2009 **Accurate, Reliable Emergency Communications** *Volume 9, Number 11*

Veterans Day Special Event

The Emporia Amateur Radio Society will be on the air with a special event Station on November 7th and on Veterans Day, November 11, to honor all U.S. veterans. The club will be operating site is adjacent to the Emporia All Veterans Memorial using the special event callsign KØV.

Operating times will be 1900Z (1PM CST) to 2300Z (5PM CST) on Saturday November 7th, and from 1400Z (8AM CST) to 2400Z (6PM CST) on Veterans Day, November 11th. Frequencies will be 14.268, 7.262 and 3.920, +/- 20 Khz.

Other frequencies may be used depending on QRM and/or propagation. The group may also try some digital contacts, especially on Saturday, Nov 7th. Operating time on Nov. 11th may be extend depending on various factors such as operator fatigue vs tremendous band conditions and thousands of DX Stations crying for a contact with KØV!!!

Special QSL cards are available, and will require a SASE sent to: EARS, Connie Steinel KØUER, 950 Oxford Drive, Emporia KS 66801-5439

What is so special about Emporia Kansas? Emporia is the birthplace of Veterans Day! The following is an excerpt from House Report 108-196 dated July 10, 2003, declaring

Special Event *cont'd on page 2*

The ARES COMMUNICATOR is published for the benefit of Amateur Radio Operators in Scott County and other interested individuals.

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Reader submissions encouraged!

Formal Traffic

When and Why?

A former ARES volunteer once observed after an exercise, "We got the message delivered. We don't need all that formal stuff." He had a point. Not all information handled during an emergency has to be passed using the NTS format. However, there are some messages that absolutely must be handled formally.

So, what are the advantages of the NTS format and when do we use it? I'm glad you asked! First, remember our goal as ARES communicators: Accurate, Rapid Communications for our served agency. This is the over-riding guide when we talk about moving information from point A to point B during an emergency.

We use the formal message format whenever our served agency requires it. Our served agency is always the deciding factor in our communications process.

Remember that on-line course, Introduction to Incident Command System (ICS 100)? That course detailed the responsibilities of the general staff: Operations, Planning, Logistics, and Finance/Admin. Many of the General Staff functions require accurate logging and retention of information exchanged during an emergency.

Formal Traffic *cont'd on page 2*

ARES Activities

Weekly Net Monday 7 PM 146.535 mhz (s)
Breakfast Saturday,November 14th
Digital Monday November 16th

SELECTED TRAFFIC NETS

Designator	Freq.	Local Times	
MN Phone	3.860Mhz	Noon, 5:30pm	Daily
MN CW	3.605Mhz	6:30pm, 9:50pm	Daily
ARES			
Scott ARES	146.535 S	7:00pm	Monday
Carver ARES	147.165+	8:30pm	Sunday
Bloomington	147.090+	9:00pm	Sunday
Neighboring Nets			
North Dakota	3.937Mhz	6:30pm	Daily
South Dakota	3.870Mhz	6:00pm	Daily
Wisconsin	3.985Mhz	5:30pm	Daily

Special Eevent - *cont'd from page 1*

Emporia Kansas to be the founding city of the Veterans Day Holiday and recognizing the contributions of Alvin J King and Representative Ed Rees to the enactment into law of the observance of Veterans Day.

"This resolution would encourage Americans to demonstrate their support for veterans on Veterans Day by proclaiming that day as a special day of national remembrance. In addition, the resolution would declare Alvin J. King of Emporia to be the founder of Veterans Day, and the city of Emporia to be the founding city of Veterans Day. . . ."

For more information, check out the special event website: www.qsl.net/emporiaars/Veterans Day Special Event Station.html.

BREAK - OVER

"Politics is not a bad profession. If you succeed, there are many rewards; if you disgrace yourself, you can always write a book."

Pres. Ronald Reagan

Scott County ARES Contacts

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N0PI@arrl.net

Formal Traffic - *cont'd from page 1*

During an event, what do you do when the Admin folks stop at your location and ask, "Who requested the supplies yesterday and what quantities were ordered?" You should be able to check the log, go to the message file, and hand over the original message. You answer shouldn't be "I duh know" with a deer-in-the-headlights look!

Information that involves resources, personnel, equipment, etc, is usually transferred using the NTS format. These messages may involve significant expenses and allocation of scarce resources. Our served agency will define these areas. We have to be accurate in our communications of these messages and the formal method contributes to that accuracy and speed. Messages such as these often require the signature of an agency official. Once again, the NTS format has us covered.

The original message is filed in the originating station's message log. This log is available to the general staff personnel to provide support for an on-going operation and as a part of the after-action review.

When you receive a deployment briefing, you should ask about the served agency's communications documentation rules. You will likely get the instruction that if a message involves: Men, Machines, or Supplies, log it. If you are in doubt, always ask the person originating the message if they want to make sure the exact message is filed in the log.

A request such as, "Check with Red Site and see if Frank can stop by on his way back to the EOC" probably wouldn't make the log. A message such as, "Call the EOC and let them know we need another 5,000 units of 5CD895 by 1700 hrs today." would almost certainly be headed for the log.

The bottom line is, when in doubt, ask.

BREAK - OVER

RFID an Identity Theft Problem?

RFID, Radio Frequency Identification, is the technology that lets you simply wave your credit card, passport or license in front of a nearby scanner instead of having to slide the magnetic stripe through it. It"s a fairly simple concept. The electronic scanner sends a signal which is received by an antenna embedded into the card, which is connected to the card's RFID chip, thus activating it.

The RFID chip in a credit card emits all of the information, including the account number, that is needed to complete a transaction.

About 100 million credit cards now have this technology embedded into them. However, over the next 2-3 years, the goal of credit card issuers is to replace every single magnetic stripe credit and debit card with a new contactless smartcard, and why shouldn't they? They seem to make it all easier. So much easier that some folks are reading your credit cards before you even take them out of your wallet.

Those folks are called identity thieves, and the unfortunate truth is that RFID technology has made identity theft quite literally a stroll in the park. Where credit card "Skimming" used to require the thief to get his hands on your card, acquiring your personal data is now as easy as passing you on the street.

RFID readers are employed by convenience stores, pharmacies, restaurants, fast food markets, and many other places of business. Credit card companies say it keeps your identity safer, because your card is never in the hands of a stranger. Readers include safety features to keep your data from being intercepted once it has been read from your card.

The use of RFID tagging in identification extends far beyond payment cards. Right now many corporations are using contactless cards to maintain security in their buildings. However, RFID actually poses a huge threat to that security. Hackers can use RFID readers to scan and then copy ID cards. To an electronic reader, ID cards and their clones can identical. Recent YouTube videos demonstrate hackers cloning MiFare ID cards in Europe.

Because of federal mandate HSPD-12, all government agencies are required to switch to a new ID card that uses RFID. This mandate requires all government employees to

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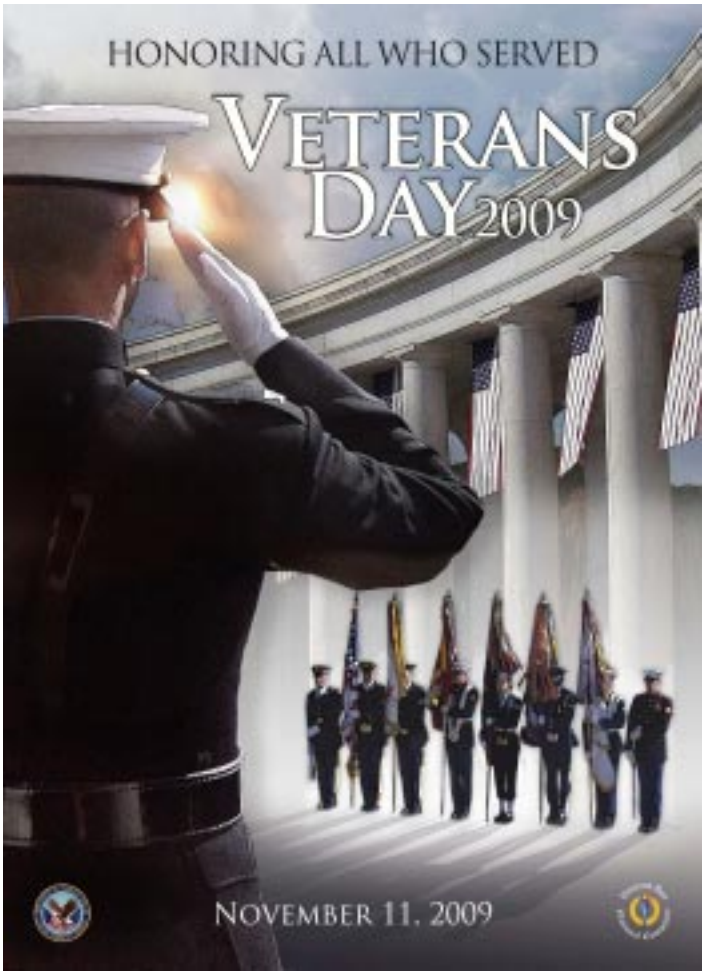


RFID *- cont'd from column 1*

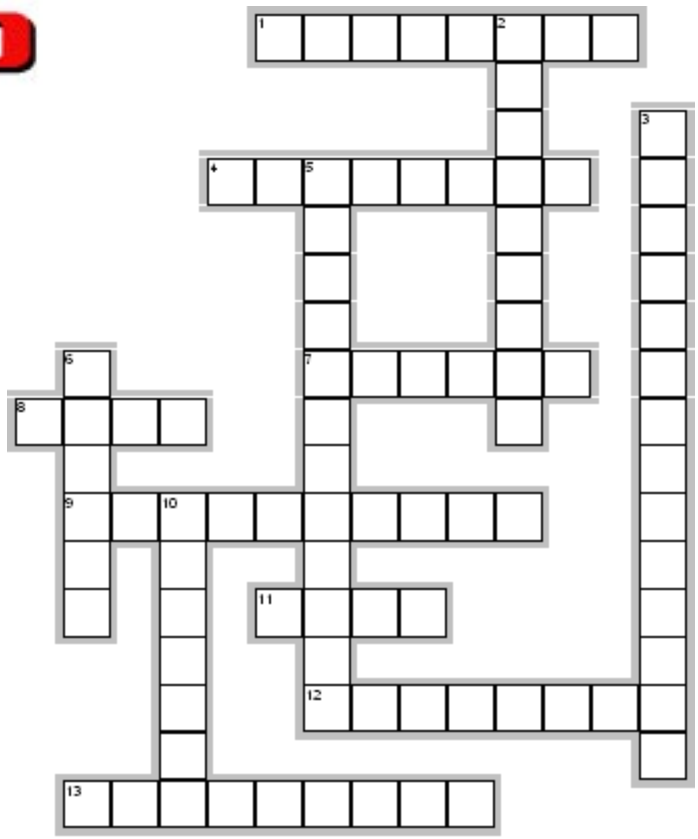
keep these new ID cards in an RFID blocking sleeve or badgeholder for privacy and security.

All US passports issued since October 2006 also have RFID chips in them. The chip contains all the data that is on the first page including your photo. It has been shown that hackers can determine what country a passport has been issued from without even reading all the data on it simply by recognizing the way the chip responds to certain scans.

A growing number of states (New York, Michigan, Washington, and Vermont, to name a few) are now issuing special driver"s licenses "enhanced" with long range RFID chips. Enhanced Driver"s Licenses (EDLs) can be scanned from your wallet, while you are still in your car. They make travel across the border a little easier, and if not kept in a shielding privacy sleeve, unwanted invasion of your privacy much more convenient.

BREAK - OVER

ICS 100 Basics



Across

1. An occurrence or event, natural or manmade, that requires a response to protect life or property. Incidents can, for example, include major disasters, emergencies, terrorist attacks, etc.
4. A plan developed to restore the affected area or community.
7. A division of government with a specific function offering a particular kind of assistance.
8. The location at which primary Logistics functions for an incident are coordinated and administered. There is only one per incident.
9. The evaluation and interpretation of measurements and other information to provide a basis for decision-making.
11. A geographical site within the general incident area that is equipped and staffed to provide sleeping, food, water, and sanitary services to incident personnel.
12. Refers to the five major activities in the Incident Command System: Command, Operations, Planning, Logistics, and Finance/Administration. The term is also used when describing the activity involved.
13. The Section responsible for providing facilities, services, and material support for the incident.

Down

2. Any incident, whether natural or manmade, that requires responsive action to protect life or property.
3. Process of transmission of information through verbal, written, or symbolic means.
5. Consists of Public Information Officer, Safety Officer, Liaison Officer, and other positions as required, who report directly to the Incident Commander.
6. Something that is potentially dangerous or harmful, often the root cause of an unwanted outcome.
10. Ares established for the temporary location of available resources in which personnel, supplies, and equipment can be temporarily housed or parked while awaiting operational assignment.

Technician Class Crossword Solution

Across

1. CONTROL—Operator responsible for transmissions from an amateur station.
4. GROUND—Connected to the green wire in a three-wire electrical plug.
6. WATTS—Units of electrical power.
9. WAVELENGTH—Property of a radio wave often used to identify different bands.
11. AMMETER—Used to measure current in an electrical circuit.
12. VERTICAL— antenna consists of a single element mounted perpendicular to the earth's surface.
13. SOUNDCARD—Used to connect a computer with a radio for data transmission.

Down

2. OHMSLAW—E = I x R
3. TRANSMITTER—Converts sounds from our voice into radio signals.
5. RECEIVER—Used to convert radio signals into sounds we can hear.
7. BATTERIES—Extra _____ are a good thing to have when operating a hand-held away form home.
8. MILLIWATTS— per square centimeter is the measure for RF exposure.
10. TWOMETER— band including 146.52 mHz.

Troubleshooting Miniature Holiday Lights

You and your family are decorating the tree for the holidays. Of course, since you are the designated maintenance department of the house, the lights fall under your purview. Of course one of the strands of miniature lights fails to, well, light. All eyes are on you. The best course of action is to dash out and get a new strand of lights for three bucks. How much is your time worth, anyway? But a strong urge to dominate anything technical clouds your better judgment and you find yourself going after the malfunctioning strand with a non-contact tester and a multimeter.

The first thing you notice is that these little lights are wired like nothing else in the electrical world. All of the lamps are wired in series. Every high school student knows that this is the worst way to wire lamps, because if one lamp goes out all of the lamps fail. But in this application it works pretty well.

Why Series? - A typical string of 50 miniature lights uses 2.5 V lamps. The voltage divides evenly across all 50 lamps (120V/50_2.4V). By wiring the lamps in series and running them at low voltage, each lamp consumes much less power than a 120 V lamp. You can run a string of fifty 2.5 V miniature lights on less than 20 Watts.

A Clever Design - As in any series system, a single open circuit causes an interruption of current to all of the loads. But mini bulbs have a mechanism that prevents an open filament from interrupting the current. A special wire is wrapped around the posts inside the lamp. The wire is coated with a thin insulation and when a filament burns out the wire shorts the posts together. This provides a shunt path for the current, so the remaining lamps can continue to function.

In order for the shunt mechanism to work, the bulb must be well seated within its socket. A pulled or twisted bulb will interrupt current flow and the whole string will go dark. This is a pretty easy problem to fix once you locate the offending bulb.

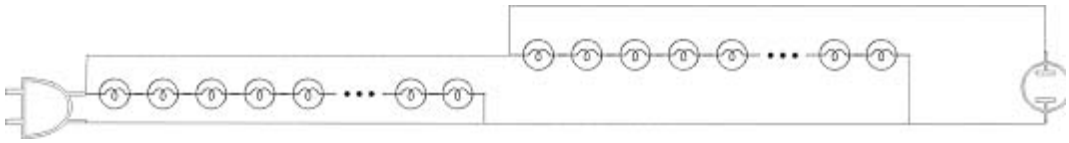
When a filament fails and a shunt shorts out a lamp, the line voltage divides over a smaller number of lamps. Each remaining lamp has a higher voltage across it. As more filaments burn out, the voltage on the lamps continues to increase. As the lamp voltage increases more filaments fail. So you can have an avalanche effect resulting in a significant number of burned out lamps. Still want to break out the testers? You can probably still make it to the drugstore.

Troubleshooting a String that Won't Light - Lay out the string on the floor. A couple of pieces of masking tape can help you mark bad bulbs. Make sure you have some spare bulbs. You might be able to find some replacement bulbs for your set at the hardware store. Try to find bulbs that are designed for your lights, since this will make it much easier to fit the plastic bases into their snug sockets. And while you're at the hardware store, consider spending $3 on a new string and forgetting the whole idea of repairing the old string.

Check the fuses for continuity using a DMM or electrical continuity tester. Replace any open fuses. Plug the string into a receptacle. Gently pull each socket away from the other conductors. Use a non-contact voltage tester to look for voltage on both sides of the lamp. If the string has a receptacle on the far end, one of the three conductors will be hot for the entire length of the string. Make sure you're check for voltage at the lamps and not seeing voltage from the hot conductor. Work your way from the plug, testing each side of the lamps. A lamp that has voltage on the plug side, but no voltage on the far side must be replaced. Continue until you've replaced all of the faulty lamps.

Troubleshooting Tips:

- When you are working with a string that has a bad lamp, recognize that 120V is present on the first open socket or open lamp on the string. It's a good idea to mark a lamp that tests open, then remove the string from wall power before replacing the bad lamp.
- On a working string a non-contact voltage tester will not indicate voltage towards the end of the strand. This is because the voltage has been divided down below the threshold of the tester (usually about 90V).
- Make sure you are using the correct lamps. There are some shorter strings that use higher voltage lamps (for example 20 lamps at 6V).
- You can check the lamps by using a continuity tester. Remember though that the shunts can register as a short, but the lamp won't light.



A string of 100 lamps is usually just a combination of two 50-lamp strings.

- You can also check the lamps by using a 1.5 V (eg. AA, AAA) battery. A good lamp will light dimly, a bad lamp won't light at all.
- Some strings have flasher bulb installed. They usually have a red tip on the bulb to differentiate them from the other bulbs. Flasher bulbs have a small bimetallic strip that periodically bends and opens the current path. They do not have a shunt and if their filament opens the entire string will go dark.

BREAK - OVER

The Sun's Sneaky Variability

Every 11 years, the sun undergoes a furious upheaval. Dark sunspots burst forth from beneath the sun's surface. Explosions as powerful as a billion atomic bombs spark intense flares of high-energy radiation. Clouds of gas big enough to swallow planets break away from the sun and billow into space. It's a flamboyant display of stellar power.

So why can't we see any of it? Almost none of the drama of Solar Maximum is visible to the human eye. Look at the sun in the noontime sky and—ho-hum—it's the same old bland ball of bright light.

"The problem is, human eyes are tuned to the wrong wavelength," explains Tom Woods, a solar physicist at the University of Colorado in Boulder. "If you want to get a good look at solar activity, you need to look in the EUV."

EUV is short for "extreme ultraviolet," a high-energy form of ultraviolet radiation with wavelengths between 1 and 120 nanometers. EUV photons are much more energetic and dangerous than the ordinary UV rays that cause sunburns. Fortunately for humans, Earth's atmosphere blocks solar EUV; otherwise a day at the beach could be fatal.

When the sun is active, intense solar EUV emissions can rise and fall by factors of thousands in just a matter of minutes. These surges heat Earth's upper atmosphere, puffing it up and increasing the drag on satellites. EUV photons also break apart atoms and molecules, creating a layer of ions in the upper atmosphere that can severely disturb radio signals.

To monitor these energetic photons, NASA is going to launch a sensor named "EVE," short for EUV Variability Experiment, onboard the Solar Dynamics Observatory as early as this winter.

"EVE gives us the highest time resolution (10 sec) and the highest spectral resolution (< 0.1 nm) that we've ever had for measuring the sun, and we'll have it 24/7," says Woods, the lead scientist for EVE. "This is a huge improvement over past missions."

Although EVE is designed to study solar activity, its first order of business is to study solar *inactivity*. SDO is going to launch during the deepest solar minimum in almost 100 years. Sunspots, flares and CMEs are at low ebb. That's okay with Woods. He considers solar minimum just as interesting as solar maximum.

"Solar minimum is a quiet time when we can establish a baseline for evaluating long-term trends," he explains. "All stars are variable at some level, and the sun is no exception. We want to compare the sun's brightness now to its brightness during previous minima and ask ourselves, *is the sun getting brighter or dimmer?*"

Lately, the answer seems to be dimmer. Measurements by a variety of spacecraft indicate a 12-year lessening of the sun's "irradiance" by about 0.02% at visible wavelengths and 6% at EUV wavelengths. These results, which compare the solar minimum of 2008-09 to the previous minimum of 1996, are still very preliminary. EVE will improve confidence in the trend by pinning down the EUV spectrum with unprecedented accuracy.

The sun's intrinsic variability and its potential for future changes are not fully understood—hence the need for EVE. "The EUV portion of the sun's spectrum is what changes most during a solar cycle," says Woods, "and that is the part of the spectrum we will be observing."

Woods gazes out his office window at the Colorado sun. It looks the same as usual. EVE, he knows, will have a different story to tell.

BREAK - OVER

Test Your NIMS Knowledge

ARES members are familiar with the Incident Command System from their study of the FEMA Institute courses. Now it is time to see how much you remember from those courses! Each month you will have the opportunity to test your ICS knowledge on a questions dealing with one ICS area. We'll start at the beginning with ICS 100.

Here is the question for this month:

Check-in officially logs you in at the incident. The check-in process and information help to:

- Ensure personnel accountability.
- Track resources.
- Prepare personnel for assignments and reassignments.
- Organize the demobilization process.
- ___

a. Determine how food and lodging will be provided
b. Identify purchasing authority and procedures
c. Determine procedures for reimbursing your headquarters
d. Locate personnel in case of an emergency

The answer will appear in next month's newsletter.

Old Logs

University Researchers Need Your Help as they Study Early Amateur Station Logs

Researchers at the University of Wisconsin and Miami University of Ohio are seeking copies of amateur station logs from 1913-1927 in hopes they may offer insights into the relationship between individuals' work and leisure activities, technology, and their social networks.

"Early hams laid the foundation for the now-ubiquitous use of technology for communications and entertainment," said Director of Engineering and Operations for Wisconsin Public Radio Steve Johnston, WD8DAS. "Many operators did not work in a technical field, but pursued Amateur Radio as a hobby for its own sake. This is a true success story about how a pastime can develop into an entirely new commercial and social phenomenon."

Phil Kim, an Assistant Professor at the Wisconsin School of Business, has noted that diaries, letters, QSL cards and station logs can contain valuable insights into the link between an individual's occupation, hobbies and friends. Early in Amateur Radio history, thousands of ham radio enthusiasts were licensed by the government to comply with the Radio Act of 1912, and began to more carefully document the new communications era.

"Amateur Radio operators during this time period were on the forefront of a new method of communication and social interaction, similar to how social media is evolving today," Kim said. "We notice a lot of similarities between these two groups, even across time."

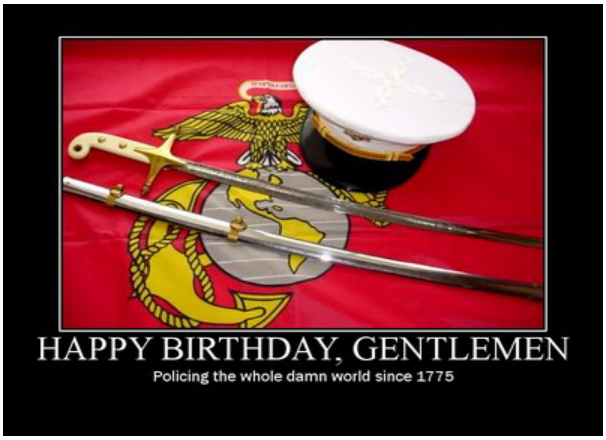
Steve Lippmann, an Assistant Professor at Miami University of Ohio, concurred: "We can learn a lot about ourselves — and our own interactions — from how these pioneers pursued their hobby and expanded their social networks."

In an effort to uncover new information about approaches to work and leisure time and the development of social networks, Kim, Lippmann and Johnston are comparing early ham licensing records from the Department of Commerce with detailed information in amateur operators' station logs. If you happen to have an old ham station log from the period (1913-1927) that you would like to include in this study, please contact Steve Johnston, WD8DAS, via e-mail or by telephone at (608) 262-5584.

BREAK - OVER

Happy Birthday USMC

Nov. 10, 1775



"Marines are warriors. Comprised of smart, highly adaptable men and women, the Marine Corps serves as the aggressive tip of the U.S. military spear. Ours is a smaller, more dynamic force than any other in the American arsenal, and the only forward-deployed force designed for expeditionary operations by air, land, or sea. It is our size and expertise that allow us to move faster. Working to overcome disadvantage and turn conflict into victory, we accomplish great things, and we do so together.

"In the Marine Corps, there is a motto that describes our commitment to each other, our organization, and our country. It is Semper Fidelis or "Semper Fi." Translated from Latin, it means "Always Faithful."

"Some people spend an entire lifetime wondering if they made a difference. The Marines don't have that problem."

- President Ronald Reagan, 1985

ARES Breakfast
Saturday November 14th
7:30AM
Perkins Restaurant
Savage, MN

NECOS Schedule November 2009

2 Nov N0PI Dan
9 Nov W0NFE Bob
16 Nov KB0FH Bob
23 Nov KC0YHH Tony
30 Nov N0PI Dan
7 Dec W0NFE Bob