What is the Incident Command System?

The *Incident Command System* (ICS) is a standardized approach to incident management that:

- Enables a coordinated response among various jurisdictions and agencies.
- Establishes common processes for planning and managing resources.
- Allows for the integration of facilities, equipment, personnel, procedures, and communications operating within a common organizational structure.

The *National Incident Management System* (NIMS) provides a systematic, proactive approach to guide departments and agencies at all levels of government, nongovernmental organizations, and the private sector to work seamlessly to prevent, protect against, respond to, recover from, and mitigate the effects of incidents, regardless of cause, size, location, or complexity, in order to reduce the loss of life and property and harm to the environment.

The *National Response Framework* (NRF) is a guide to how the Nation conducts all-hazards response - from the smallest incident to the largest catastrophe. This key document establishes a comprehensive, national, all-hazards approach to domestic incident response. The Framework identifies the key response principles, roles, and structures that organize national response. It describes how communities, States, the Federal Government, and private-sector and nongovernmental partners apply these principles for a coordinated, effective national response.

There are a number of on-line education courses, available at no cost, that provide a great background on the ICS. ARES members are expected to complete the courses: IS-100b, 200b, 700.a, and 800.b. The courses are available at: http://training.fema.gov/IS/NIMS.asp

BREAK - OVER

The Minnesota QSO Party

Saturday Feb 5th 8AM – 6PM

The time has come! The first weekend in February bring the Minnesota QSO Party to the airwaves. This one time of the year when everyone is looking to make contact with a Minnesota station.

The contest runs from 8:00AM to 6:00PM (CST) on Saturday, February 5th. You will finnd activity on the usual five HF bands plus 6M and above. You will find 80M,40M,and 20M good pretty much all day long. Check the chart for specific frequencies.

Don't hesitate to put out a call of "CQ MN QSO Party". There are stations out there looking for a Minnesota contact. The information exchange for the contest consists of your first name and your three character county designator, i.e. "Sylvester, SCO".

ARES Activities
Weekly Net Monday 7 PM 146.535 mhz (s)
Breakfast Saturday, February 12th
Digital Monday February 14th

ARES Nets

MN ARES Phone Net
      6:00PM Sunday   Freq: 3.568 mhz
ARRL MN Phone Net
      12:00p, 4:30p CST Daily   Freq: 3.568 mhz
ARRL MN CW Net
      6:30p, 9:50p CST Daily   Freq: 3.568 mhz

NETS WITH OUR NEIGHBORS

North Dakota:	Daily 3.937 mhz	6:30pm
South Dakota:	Daily 3.870 mhz	6:00pm
Wisconsin:	Daily 3.985 mhz	5:30pm
Iowa:	Daily 3.970 mhz	12:30/5:30pm

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.

This month we will take a look at some of the concepts from the IS-100 course, Introduction to Incident Command System. This is the first of the FEMA courses all ARES members must complete before participating in any response activities. You can find the course materials at this site: http://training.fema.gov/EMIWeb/IS/is100.asp. Now, test your knowledge of the ICS.

Here is the question for this month:

A basic ICS principle is that the first Incident Commander is responsible until the:

- A. Five management functions are activated
- B. Event or incident has demobilized
- C. Authority is delegated to another person
- D. Next operational period has begun

Check next month's ARES Communicator for the solution

MN QSO Party *- cont'd from page 1*

Band	Freq.	CST	GMT
10 SSB	28450	2:00 PM	2000
15 SSB	21350	1:00 PM	1900
20 SSB	14270	All Day!	All Day!
40 SSB	7250	All Day!	All Day!
80 SSB	3850	All Day!	All Day!
160 SSB	1870	5:30 PM	2330

Band	Freq.	CST	GMT
10 CW	28050	Noon	1800
15 CW	21050	11:00 AM	1700
20 CW	14050	All Day!	All Day!
40 CW	7050	All Day!	All Day!
80 CW	3550	All Day!	All Day!
160 CW	1850	5:30 PM	2330

NOTE: Times are recommendations based on propagation estimates and past year's activity. Tune around and take advantage of what propagation is available

Be sure to visit the MN Wireless Assn. website for more information on the 2011 MN QSO Party. You will find links to logging software and rover maps and schedules. You will find information here: www.w0aa.org/

This is a fun operating event with opportunities for everyone to participate. You can operate voice, sideband and FM, or digital, CW, PSK, RTTY, etc. Let's put Minnesota on the air on Feb 5th.

BREAK - OVER

Scott County ARES Contacts

Emergency Coordinator
Bob Reid N0BHC
13600 Princeton Circle
Savage, MN 55378
952-894-5178
N0BHC@arrl.net

Asst. Emergency Coordinator
Bob Minor W0NFE
5210 West 141st Street
Savage, MN 55378
952-894-2657
W0NFE@arrl.net

Asst Emergency Coordinator
Daniel Vande Vusse N0PI
5722 West 141st Street
Savage, MN 55378
952-440-1878
N0PI@arrl.net

Groundhog Day

January NIMS Knowledge Solution

Depending upon the size and type of incident or event, it may be necessary for the Incident Commander to designate personnel to provide public information, safety, and liaison services for the entire organization. In ICS, these personnel make up the:

B. Command Staff

February Contests

2011 Valentine Sprint

Sponsored by the Penn-Ohio DX Society (PODXS)
http://www.podxs070.com/valentine-sprint

Work as many stations on 40/80/160 meters as possible in a maximum of six (6) hours using PSK31 mode. This event is open to all amateur radio operators licensed to operate on the HF bands. Contest runs Friday, 11 February 2011, 2000 - 0200 (YOUR LOCAL TIME - NOT UTC!). This event features a "rolling start" based on your local time to help equalize band conditions for all contest participants. (Note: this Sprint is not actually on Valentine's Day - we figured that wouldn't go over too well.)

Contest exchange: Callsign, Name, either "OM" or "YL" and your State/Province/Country (SPC).
Examples: "W4KRN Karen YL VA" and "N3DQU Jay OM PA".

Take a Dip in the General Pool

Time to test your knowledge of the information covered by the General Class license exam. Each month we'll take a look at a selection from the question pool. Here is this month's sample:

Which of the following amateur bands is restricted to communication on only specific channels, rather than frequency ranges?
  A. 11 meters
  B. 12 meters
  C. 30 meters
  D. 60 meters

Which of the following frequencies is within the General Class portion of the 20 meter phone band?
  A. 14005 kHz
  B. 14105 kHz
  C. 14305 kHz
  D. 14405 kHz

(Check next month's issue of the ARES Communicator for the answer.)

January General Pool Answer

On which of the following bands is phone operation prohibited?
  B. 30 meters

On which of the following bands is image transmission prohibited?
  B. 30 meters

ARISSat-1 Blasts Off

At 0132 UTC January 28, a Soyuz-U rocket lifted off from the Baikonur Space Center in Kazakhstan carrying the Russian Progress M-09M cargo vehicle to orbit for a rendezvous with the International Space Station (ISS).

In addition to delivering fuel, oxygen, food and other supplies, the Progress contains the new AMSAT ARISSat-1 Amateur Radio satellite. Progress is scheduled to dock with the space station on January 30 at 0240 UTC.

ARISSat-1 will be manually jettisoned from the ISS during a spacewalk on February 16. The satellites features a new software defined transponder that will provide simultaneous 2-meter FM, CW, BPSK transmissions, as well as a Mode U/V (70 cm uplink, 2 meter downlink) transponder. The ARISSat-1 telemetry (145.920mHz) will use a new mode, 1kBPSK mode which incorporates forward error correction (FEC) and it should be very interesting to see how it performs under ad verse SSB conditions from a weak satellite signal. The receive only 1kBPSK software should be available for free download prior to satellite deployment. Check the AMSAT website for latest info: www.amsat.org

Packed for Orbit

Satellite Kedr was accommodated in the vehicle cargo compartment on January 18. The satellite is designed to carry out space experiment RadioSkaf: development, preparation and launch of supersmall spacecraft during extravehicular activity (EVA). The experiment is scheduled to be performed on January 28 at 04:31 Moscow Time." (www.spaceref.com)

"Never take life seriously. Nobody gets out alive, anyway."
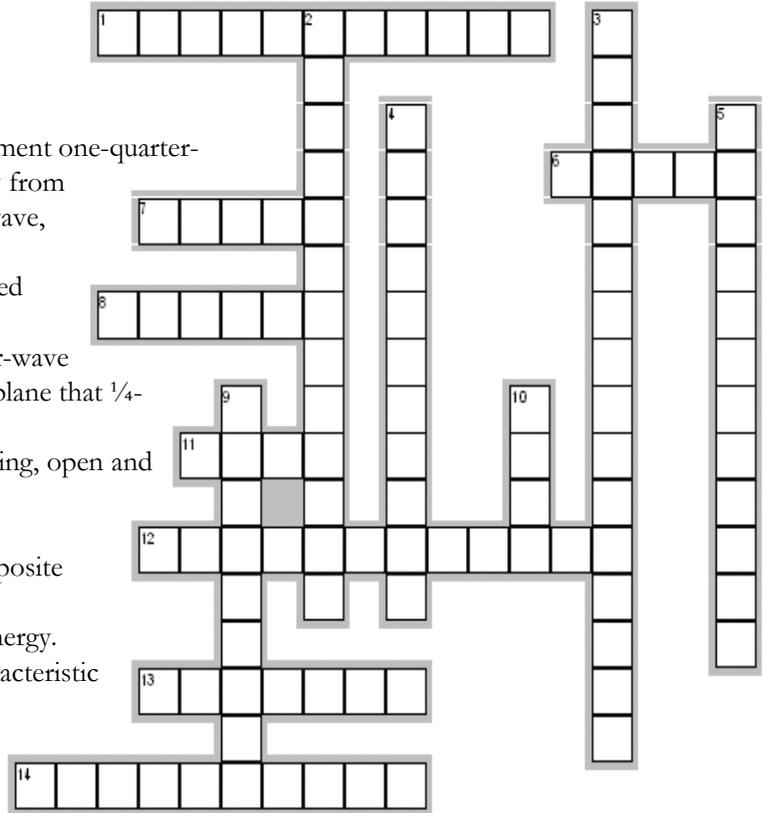   Earl Lee Bird

Antenna Terms

Across

1. A vertical antenna built with the   central radiating element one-quarter-wavelength long and several radials extending horizontally from the base. The radials are slightly longer than one-quarter wave, and may droop toward the ground.

6. Balance to unbalance, a device used to couple a balanced antenna to an unbalanced feed line (e.g., dipole to coax).

7. Consists of a half-wavelength radiator fed by a quarter-wave matching stub. This antenna does not require the ground plane that ¼-wave antennas do to work properly.

8. The basic antenna consisting of a length of wire or tubing, open and fed at the center.

11. An antenna that gives a directional beam pattern.

12. A feed line with two conductors having equal but opposite voltages, with neither conductor at ground potential.

13. A device that intercepts or radiates radio frequency energy.

14. An open wire transmission line — 600, 450 ohm characteristic impedances are typical.

Down

2. Antenna element that connects directly to the feed line.

3. Part of a directive antenna that derives energy from mutual coupling with the driven element, not connected directly to the feed line.

4. An antenna which radiates most of the transmitted energy nearly straight up.

5. Impedance-matching device that matches the antenna system input impedance to the transmitter, receiver, or transceiver output impedance.

9. An element behind the driven element in an Yagi and some other directional antennas.

10. A directional antenna consisting of a dipole and two additional elements, a slightly longer reflector and a slightly shorter director.

January Crossword Solution

Across

4. WARC—World Administrative Radio Conference at which frequency allocations are determined.

6. QRP—Very low-power operating (less than 5 watts on CW and 10 watts (peak) on phone).

8. WHIP—Antenna made from a long, thin metal rod.

9. ATTENUATE—Reduce in strength

14. OVERLOAD—A signal so strong that circuits begin to operate improperly.

15. FEEDLINE—Cable used to transfer radio-frequency energy (between Xcvr and antenna).

17. DATAINTERFACE—A device for connecting a computer to a radio.

18. SENSITIVITY—The receiver's ability to detect weak signals.

Down

1. SCANNING—Monitor a range of frequencies or a set of memory channels for activity.

2. DIGITALMODE—Communication method that exchanges characters instead of voice or Morse Code.

3. SELECTIVITY—A receiver's ability to receive only the desired signal and reject all others.

5. BALUN—Stands for "balanced-to-unbalanced", provides a transition from parallel wire feed lines or antennas to coaxial feed lines.

7. POWERSUPPLY—A device that changes ac power into dc power.

10. ALLMODE—A radio that can operate on AM, SSB, CW, Digital, and FM.

11. DIPOLE—A simple wire antenna 1/2-wavelength long with feed line attached in the middle.

12. IMPEDANCE—A measure of how easily power can be transferred into a load or through a feed line.

13. GAIN—Antenna's ability to receive or transmit energy in a preferred direction.

16. KEYER—Electronic device that generates Morse code elements.

NBEMS - Doing It The Ham Radio Way

by Charles Brabham, N5PVL
http://uspacket.org/network/index.php/topic,44.0.htm

NBEMS (Narrow-Band Emergency Message System) is perhaps the best solution available for moving eMail and other text-based information over amateur radio frequencies, to handle emergency communications. Here I will outline the reasons that I have come to this conclusion after reviewing the available amateur radio messaging systems.

Mission: Our mission is simple. - To provide an alternate means of moving messages into and out of a disaster area where regular internet access has become compromised, is limited or nonexistent. For this purpose, it is seldom necessary to transport messages or eMail via amateur radio any farther than 100 miles or so, or to move any great volume of data. It is important however that the messages get through with 100% accuracy, and in a timely manner. In most cases, this service will be needed for anywhere from a few hours up to several days.

Considerations: For amateur radio operators, the best method is to utilize the radios, software and equipment that we use every day for ham radio, and so are already familiar and comfortable with. It ideally should be inexpensive, simple and familiar so that all amateurs may utilize the system, are not faced with a steep learning curve during an emergency, and are not required to do extensive training and drilling in order to function well when needed. There also should be some flexibility to handle different needs of the situations that may be encountered.

I have reviewed the amateur radio eMail and messaging systems in current use, and have found that NBEMS best covers the mission parameters and the considerations for amateur radio operators outlined above.

NBEMS was developed as a collaborative effort between Dave Freese W1HKJ and Skip Teller KH6TY, the developer of the popular DIGIPAN PSK31 software. It consists of a suite of programs that send text, images and email files error-free. The two main programs, FLDIGI and FLARQ are designed to run under Linux, Free-BSD, Windows XP, Win2000, Vista and Windows7.

The NBEMS system is designed to operate on all amateur bands, but is optimized for short to medium range communications such as SSB VHF, or HF with an NVIS antenna can provide. It can however be utilized on VHF FM, and even operated through a FM voice repeater at need.

Digital modes currently recommended for HF NBEMS operations are: DominoEx11, DominoEx22, MFSK-16, MFSK32, BPSK-125 and BPSK250. For VHF use on simplex or through a repeater, MT63 2k is recommended and can be used to good effect without a soundcard interface. The free FLDIGI multimode soundcard software offers many digital modes, but these are the modes associated with NBEMS. Amateurs who use FLDIGI for everyday QSOs in PSK31, Hell, Olivia, MT63 etc. will be familiar with the software when occasion calls for the NBEMS system to be called up.

The second major part of NBEMS is the FLARQ software, which provides the interface to your email program, and which also provides the ARQ feature for NBEMS which gives you 100% accurate transmissions of the messages and images you transmit. In addition to email, you can send comma delimited spread sheets/data bases, text, and many ICS form-based messages.

The WRAP add-on program allows you to transmit a bulletin to an unlimited number of stations simultaneously. Each recipient can confirm individually whether they have received the data with 100% accuracy, as WRAP generates a checksum for each message.

The FLMSG program makes authoring, sending and receiving text, ICS-205, ICS-206, ICS-213, ICS-214, and ICS-216 forms in addition to ARRL Radiograms a simple point and click proposition.

NBEMS Features:
- Inexpensive (free soundcard software)
- Simple to use, reducing training requirements
- Effective, perfectly tailored to the EMS mission
- Narrowband modes conserve spectrum
- A live operator on each end, eliminating interference potential
- Flexible enough for use with most equipment under most conditions
- The software is great for everyday use, again reducing training requirements
- Specialized add-on software for net control, rig control, callbook data, logging etc. are available

BREAK - OVER

"There are two ways to live your life. One is as though nothing is a miracle. The other is as though everything is a miracle."
Albert Einstein

Worm Killer: Conficker Stopped

Conficker Group Offers Roadmap For Stopping Worm

How do you nuke a worm? That was the question posed by the Conficker Working Group, which from late 2008 until mid-2009 explored a variety of techniques for stopping the Conficker worm, which by some estimates infected 15 million computers at its peak.

The Rendon Group recently released their report, funded by the Department of Homeland Security, rounding up the 15-person-strong working group's "lessons learned." The report highlighted the group's biggest achievement: "preventing the author of Conficker from gaining control of the botnet." Doing so, however, required coordinating with organizations in more than 100 countries to block the more than 50,000 domains per day generated by the Conficker C worm.

The group's legacy includes processes for coordinating with the Internet Corporation for Assigned Names and Numbers (ICANN) and country code top-level domains (ccTLDs), the report said. "Without these organizations, the group would have been able to do little to scale the registration of international domains to block Conficker C from using domains to update."

That level of coordination was created by security researchers needing a more long-term approach to containing the worm, as well as preventing similar such outbreaks in the future. Initially, for example, "several researchers were paying for and registering the vulnerable domains by hand, one by one," said the report. That was made possible by reverse-engineering Conficker's domain creation algorithm, including the dates that the malware would begin attempting to contact specific domains. Other researchers, meanwhile, accessed botnet data and created "sinkholes" for studying the malware's spread and scope.

While some security industry watchers predicted that Conficker would cause massive damage, in fact the botnet never appeared to do anything more than serve scareware. Why is that? "It is likely that the Conficker Working Group effort to counter the spread did make it more difficult for the author to act with impunity, but the author did not seem to have tried his or her hardest," said the report. "It is possible the level of attention given to the malware scared off the author. It is also possible the author is waiting for a later date or is waiting for someone to pay for the use of the botnet."

While the Conficker Working Group doesn't plan to tackle any new worms, its members "continue to block tens of thousands of domains per day," said the report.

The Conficker worm exploited a Microsoft vulnerability that was patched in October 2008. Conficker evolved with the help of its creator or creators. After its fourth iteration, it had developed multiple avenues of infection, including USB devices. It also used a variety of sophisticated techniques to evade detection and to maintain its command-and-control channel, including a pseudo-random algorithm for generating the domains it uses to receive commands.

The worm previous polled 250 domains daily for updates. On April 1 2009, security researchers who analyzed its code say it will start scanning 500 out of 50,000 domains for updates.

The worm has some peer-to-peer functionality which means that infected computers can communicate with each other without the need for a server. This enables the worm to update itself without the need for any of the 250 or 50,000 domains.   *BREAK - OVER*

ATLANTIC OCEAN (Jan. 29, 2011) The aircraft carrier USS George H.W. Bush (CVN 77) is underway in the Atlantic Ocean. George H.W. Bush is underway conducting a composite training unit exercise.

NanoSail-D – Lost in Space!

Amateur Radio Ops asked to Help

When a NASA nanosatellite — NanoSail-D — ejected unexpectedly on January 17 from the Fast Affordable Scientific and Technology Satellite (FASTSAT), the agency called upon Amateur Radio operators to help track it. NASA asked radio amateurs to listen on 437.270 MHz for the signal and verify that NanoSail-D was operating. NASA received almost 470 telemetry packets from 11 countries.

The NanoSail-D beacon sent an AX.25 packet every 10 seconds; the packet contained data about the spacecraft's systems operation. You an watch a YouTube video of the nanosatellite's beacon, made by Hank Hamoen, PA3GUO, on January 21st at www.youtube.com/watch?v=s1vZfm500hE

Once the NanoSail-D team received confirmation that the nanosatellite did indeed ejcect, NanoSail-D principal investigator Dean Alhorn quickly enlisted Alan Sieg, WB5RMG, and Stan Sims, N4PMF, to try to pick up NanoSail-D's radio beacon. Both hams work at the Marshall Space Flight Center in Huntsville, Alabama.
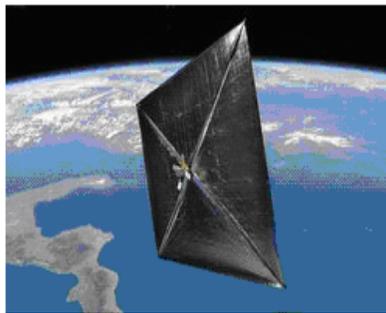
An artist's conception of NanoSail-D. [Image courtesy of NASA]

"The timing could not have been better," Sieg said. "NanoSail-D was going to track right over Huntsville, and the chance to be the first ones to hear and decode the signal was irresistible." Right before 2300 UTC on January 17, they heard a faint signal. As the spacecraft soared overhead, the signal grew stronger and the operators were able to decode the first packet: NanoSail-D was alive and well. "You could have scraped Dean off the ceiling. He was bouncing around like a new father," Sieg recalled.

According to NASA, the nanosatellite was last heard at 1354 UTC on January 21. Telemetry indicates that the sail deployed on schedule and the satellite is now believed to be out of power, which NASA said was to be expected. NASA is now asking for visual tracking and sighting reports of NanoSail-D, which is about 650 km above the Earth.

According to the agency, when the nanosatellite's sail reflects off the Sun, it could be up to 10 times as bright as the planet Venus — especially later in the mission when the sail descends to lower orbits. You can track NanoSail-D

N6R Special Event

President Ronald Reagan's 100th Birthday

To celebrate President Ronald Reagan's 100th Birthday, the Ventura Co. (CA) Amateur Radio Society (VCARS) will activate Special Events Station N6R from Thousand Oaks, CA during the period February 05, 2011 through February 07, 2011. Operation is planned continuously from 0800 PST – 1800PST, Sunday, February 06, 2011 and intermittently at other times Saturday through Monday. Further details will be available at www.qrz.com/db/n6r Requests for schedules may be sent to n6rn6r@aol.com. QSL info: SASE to Peter Heins, N6ZE; No e-QSL or LOTW, please.

Probable frequencies for "N6R" Special Events Station: President Ronald Reagan's 100th Birthday:
SSB: 3820, 7260, 14255, 21320, 28490 KHz (+/- as needed for QRM) 20M will be the workhorse
CW: 3545, 7045, 14045, 21045, 28045 KHz (+/- as needed for QRM)

BREAK - OVER

Q. Why won't clams loan their money?

A. Because they're shellfish!

on the web at: http://spaceweather.com/flybys/ or http://heavens-above.com/.

NASA estimates that NanoSail-D will remain in low Earth orbit (LEO) between 70 and 120 days, depending on atmospheric conditions.

BREAK - OVER

ARES Breakfast
Saturday February 12th
7:30AM
Perkins Restaurant
Savage, MN

NECOS Schedule February 2011

Date	Call	Name
31 Jan	KC0YHH	Tony
7 Feb	N0PI	Dan
14 Feb	W0NFE	Bob
21 Feb	KB0FH	Bob
28 Feb	KC0YHH	Tony
7 Mar	N0PI	Dan
14 Mar	W0NFE	Bob