



ARES COMMUNICATOR

Information for Scott County Amateurs



July, 2010

Accurate, Reliable Emergency Communications

Volume 10, Number 7

New Section Affiliated Club Coordinator

Skip Jackson, MN Section Manager, announced that Effective immediately, Frank Karnauskas, N1UW is appointed to the position of Section Affiliated Club Coordinator.

The position of Affiliated Club Coordinator is one that Frank has held before. Most recently he was the Section Emergency Coordinator, a position now held by Dan Anderson KDØASX.



Frank Karnauskas, N1UW

Frank Karnauskas, N1UW, pictured here, travels the state extensively in the course of conducting his business and has many contacts and friends throughout Minnesota. Frank is an excellent speaker and is well known by the amateur radio community.

Please contact Frank to assist you with your affiliated club and he will be glad to help. Frank can be contacted by email at n1uw@arrl.net.

Frank wants to visit each club in Minnesota but of course, that is a big job. It might take him a while as we have more than forty clubs on the books. He will be attending many of the amateur radio events around the state so look him up at the next hamfest as he will probably be there.

BREAK - OVER

The ARES COMMUNICATOR is published for the benefit of Amateur Radio Operators in Scott County and other interested individuals.
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Field Day 2010!

The 2010 edition of the premier nationwide emergency communications exercise is now history. The Scott ARES volunteers set up two high frequency communications stations under the picnic shelter at the Canterbury city park in Savage during the 24 hour event. A demonstration station was also available for communications with local amateurs on VHF frequencies.

Severe weather shut operations down Saturday evening around 7 PM as thunderstorms crept closer to the site and the National Weather Service issued warnings. Scott ARES operators assumed the role of Skywarn Spotters, monitoring the Metro Skywarn Net. Thankfully the tornadic activity in Scott county occurred in a sparsely inhabited area in the extreme southeastern corner of the county. Damage was mostly limited to some crops in the field.

The Field Day exercise operating time was shortened to slightly more than nine hours due to the storm and park hours. During the limited operating time, the Scott ARES crew contacted 195 stations in 43 states and 4 Canadian provinces.

Field Day *cont'd on page 3*

ARES Activities

Weekly Net Monday 7 PM 146.535 mhz (s)

Breakfast Saturday, July 10th

Digital Monday July 12th

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 |

Propagation Program "VOACAP" Is Online

Making point-to-point HF propagation predictions is now easier than ever as "VOACAP" Online, <http://online.voacap.com>, has been opened to the public.

The service uses VOACAP (Voice of America Coverage Analysis Program) which is arguably one of the best HF prediction engines available on the market today.

VOACAP Online is free to all and makes using VOACAP a 'no-brainer.' Just enter the coordinates of the transmitter and the receiver, and that's all. To find the coordinates, you can use the Google Maps based QTH Locator at <http://www.voacap.com/qth.html>

The prediction is given as a "circuit reliability" graph that shows the probability of achieving a CW-grade transmission quality between the transmitter and the receiver.

VOACAP is a radio propagation model that uses empirical data to predict the point-to-point path loss if given as inputs: two antennae (configuration and position), solar weather, and time/date. It was originally designed for Voice of America.

There is a 'Quick Guide' at: <http://www.voacap.com/>

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.

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:

There is no correlation between the ICS organization and the administrative structure of any single agency or jurisdiction. This is deliberate because:

- A. There is a need to protect agencies and jurisdictions against potential liability claims resulting from incident response.
- B. It is easier to account for resource expenditures associated with incident responses when the position titles are unique.
- C. Confusion between agency position titles/organizational structures and the ICS structure needs to be avoided.
- D. Every incident requires different management organizational structures and position titles to be effective.

Check next month's ARES Communicator for the solution

June NIMS Knowledge Solution

Which General Staff position manages costs related to the incident, and provides accounting, procurement, time recording, and cost analyses?

- C. Finance/Administration Section Chief

French Spectrum Expands

The Official Journal of the French Republic finally published the details of the expansion of 7 MHz for French stations on June 30, 2010.

After seven years of waiting French stations can now legally operate in the 7.1 to 7.2 MHz band. This includes stations from Corsica (TK).

BREAK - OVER

Scott County ARES Contacts

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Field Day! - cont'd from page 1

CQ FIELD DAY

A number of visitors to the site satisfied their curiosity and were welcomed with amateur radio information and the opportunity to make some radio contacts.

Scott ARES is grateful for the cooperation of the Savage City Park & Recreation Department and the Savage Police in allowing the Field Day operation in Canterbury Park.

Check out the Field Day 'action' photos elsewhere in this issue see the Scott ARES group on the air during the exercise.

BREAK - OVER



Scott ARES Assistant Emergency Coordinator, Bob, W0NFE, prepares to log contacts as he waits for an operator. "Hey! Let's get this show on the road!"



ARES members Larry, K0LEJ, and Tony KC0YHH, scour the band for another new contact. Tony coordinated the computer network used for logging Field Day contacts.

CQ FIELD DAY
CQ FIELD DAY



Scott ARES Field Day operation took place from the park shelter at Canterbury City park. Two stations shared space under the picnic area. One trap dipole antenna is visible in the foreground. Another antenna was erected within the hockey rink to limit accidental contact by visitors.

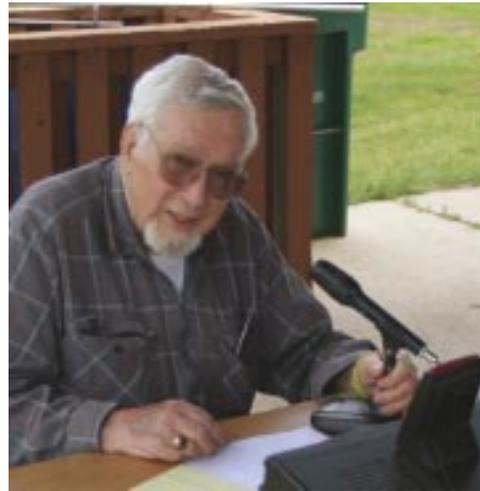
Field Day cont'd on page 4

Field Day! - cont'd from page 3

CQ FIELD DAY



Dan, N0PI, Assistant Emergency Coordinator, and Chris, KC0TZN, operate another station during the Field Day Emergency exercise.



Bernt, W0SER, from Prior Lake stopped by to check out the Field Day operation.

ZA MN ZA MN QSL!



Noelle waits while Grace talks to a local ham operator using the handie talkie. Grace's dad, Dave, talked with ARES members about amateur license requirements.



Tony, KC0YHH, logs as Bob, KB0FB, mans the mic searching for new contacts during Field Day operations.

73 GOOD LUCK

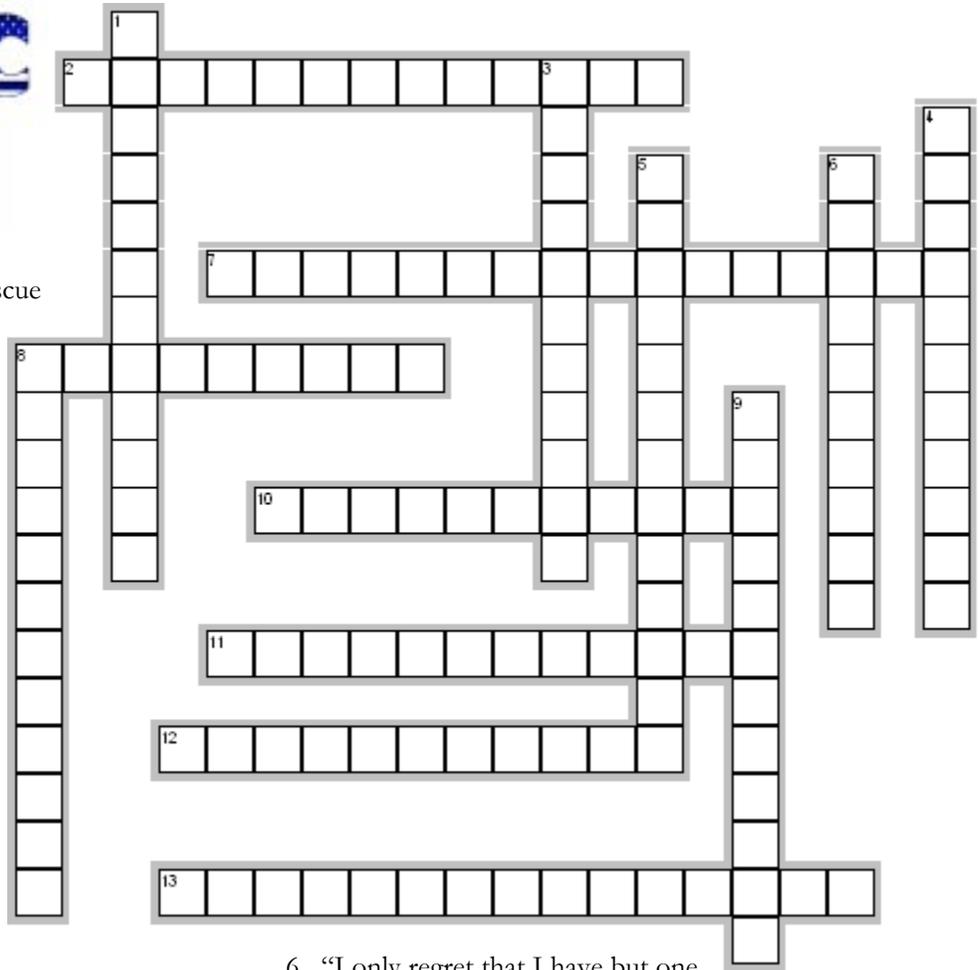
PATRIOTIC QUOTES

Across

2. "The contest for ages has been to rescue liberty from the grasp of executive power."
7. "Associate yourself with men of good quality if you esteem your own reputation for 'tis better to be alone than in bad company."
8. "Fear is the foundation of most governments."
10. "A great empire, like a great cake, is most easily diminished at the edges."
11. "Don't fire until you see the whites of their eyes! Then fire low!"
12. "The public cannot be too curious concerning the characters of public men."
13. "All tyranny needs to gain a foothold is for people of good conscience to remain silent."

Down

1. "I know not what course others may take; but as for me, give me liberty or give me death."
3. "Lead, follow, or get out of the way."
4. "There! His Majesty can now read my name without glasses. And he can double the reward on my head!"
5. "I wish to have no connection with any ship that does not sail fast; for I intend to go in harm's way."



6. "I only regret that I have but one life to lose for my country."
8. "The truth is that all men having power ought to be mistrusted."
9. "Patriotism is as much a virtue as justice, and is as necessary for the support of societies as natural affection is for the support of families."

June Crossword Solution

Across

1. POWERSUPPLY—Device that changes ac power into dc power.
4. TRUNKED—VHF/UHF systems used by commercial and government agencies, sharing a few channels among many users by using computers to control the radio's frequencies.
6. CROSSBAND—Receiving on one band and transmitting on another.
9. WALLWART—light-duty power supply plugged directly into the an ac outlet.
12. GAIN—Antenna's ability to concentrate received or transmitted energy in a preferred direction.
13. IMPEDANCE—Opposition to ac current flow by a circuit, feed line, or antenna.
14. ALLMODE—A radio that can operate on AM, SSB, CW, digital modes and FM.

Down

2. POLARIZATION—Orientation of radio waves with respect to the surface of the Earth.
3. AIRBAND—VHF channels for aviation air-to-air and air-to-ground communications.
5. DIGITALMODE—Communication method that exchanges characters instead of voice or CW.
7. SCANNING—Monitor a range of frequencies or a set of memory channels for activity.
8. FEEDLINE—Cable used to transfer radio-frequency energy.
10. MONITOR—Listen without transmitting or disable a radio's squelch to listen for weak signals.
11. SIMPLEX—Transmitting and receiving on the same frequency.



GPS Upgrade

Most people may associate the Global Positioning System with the navigation devices that are becoming standard equipment on new cars. But GPS has become a nerve center for the 21st century rivaling the Internet - enabling cargo companies to track shipments, guiding firefighters to hot spots and even helping people find lost dogs.

"It's a ubiquitous utility that everybody takes for granted now," said Bradford W. Parkinson. He should know. Three decades ago, as a baby-faced Air Force colonel just out of the Vietnam War, Parkinson led the Pentagon team that developed GPS at a military base in El Segundo (Los Angeles County).

Now, scientists and engineers - including those at a sprawling satellite-making factory in El Segundo - are developing an \$8 billion GPS upgrade that will make the system more reliable, more widespread and much more accurate.

The new system is designed to pinpoint a location within an arm's length, compared with a margin of error of 20 feet or more today. With that kind of precision, a GPS-enabled mobile phone could guide you right to the front steps of Starbucks, rather than somewhere on the block.

"This new system has the potential to deliver capabilities we haven't seen yet," said Marco Caceres, senior space analyst for aerospace research firm Teal Group. "Because GPS touches so many industries, it's hard to imagine what industry wouldn't be affected."

The 24 satellites that make up the GPS constellation will be replaced one by one. The overhaul will take a decade and is being overseen by engineers at Los Angeles Air Force Base in El Segundo, where Parkinson and his team developed the current system.

"We know that the world relies on GPS," said Col. David B. Goldstein, the chief engineer for the upgrade. San Diego found out firsthand in 2007, when the Navy accidentally jammed GPS signals in the area, knocking out cell phone service and a hospital's emergency paging system for doctors.

The upgrade is designed in part to prevent such outages by increasing the number of signals beamed to Earth from satellites orbiting 12,000 miles above. By triangulating the signals from four satellites, GPS receivers - and there are now more than a billion of them - can pinpoint your exact location on the ground.

Although "positioning" is an obvious application of the technology, it's also become a crucial timekeeper for the

financial industry.

Transactions made everywhere, as varied as ATM withdrawals and Wall Street stock trades, are time-stamped using precise atomic clocks ticking within the GPS satellites. The clocks are accurate to one-billionth of a second. It's a crucial technology for Wall Street, where a fraction of a second could mean billions of dollars.

Before GPS, explorers and seafarers figured out where they were by looking at the sun and the stars. Even with the advent of gyroscopes and radios, navigation was still imprecise, with an average margin of error of a mile or two.

BREAK - OVER

CQ Sommeliers



Morse Code - it's not just for dinner any more. Who says code is dead? Here's an Australian wine label that honors the 'telegraphers' language of yesteryear!" You can find more information at: <http://www.bevlaw.com/bevlog/wine/morse-code-labels>. photo by: Eric K1TVV

Finally My Jet Pack is Here!

It's been a long time coming. While Arthur C. Clarke's satellites have taken to space, and James Bond's futuristic mobile technology has become common place, still the dream of sustained personal flight has eluded us. But the future is here! Finally we can all take flight as Martin Aircraft in New Zealand releases the first commercially-available jet pack!

Like many science fiction concepts, the jetpack design has become firmly entrenched in the collective psyche: ask anyone to draw you a jetpack and they will give you a man with two fiery pods strapped to his back gravitating him skyward. We owe much of this to James Bond's *Thunderball*, which served to advertise the most successful of all the jetpack inventions; the Bell Rocket Belt.

Developed by the U.S. military in 1961 with the aim of producing an all-terrain vehicle to move military commanders around a battlefield, the Bell Rocket Belt could only maintain flight for 26 seconds on a full tank of fuel. After the film was released the subsequent clamoring for sales only served to prove what a marketable product a jetpack might be if one could be properly developed. Sadly with such limited application the Bell Rocket Belt was consigned merely to film work and TV appearances.

More recently, aside from the exploits of a brave few like Yves Rossy, attempts to realize a one-person flying machine ranging from flying exoskeletons to ion-propelled and water-drive technology have failed to gain momentum.

In 1998 and Martin Aircraft of Christchurch New Zealand was formed with the specific aim to build a jetpack that improved on the Bell Rocket Belt's record fly time by 100 times. The concept, developed by Glenn Martin, manager of Martin Aircraft in 1981, was verified by the Mechanical Engineering Department at the University of Canterbury, New Zealand. Since then nine prototypes have been developed and it is lucky number nine that in 2005 broke the mold and achieve sustained flight times.

The Jetpack is constructed from carbon fiber composite, has a dry weight of 250 lbs (excluding safety equipment) and measures 5 ft high x 5.5 ft wide x 5 ft long. It's driven by a 2.0 L V4 2 stroke engine rated at 200 hp (150 kw), can reach 8000 ft (estimated) and each of the two 1.7 ft wide rotors is made from carbon / Kevlar composite.



There is always risk associated with flying so Martin Aircraft has been careful to equip the pack with redundant systems that will take over in the event that the main system goes down. If a crash-landing is required, a pilot-operated toggle will rapidly fire a small amount of propellant deploying a ballistic parachute (similar to a car airbag) which will allow the pilot and jetpack to descend together. It also has an impact-absorbing carriage, patented fan jet technology and 1000 hours engine TBO (Time Between Overhaul). Small vertical take-off and landing aircraft (VTOL) are not subject to the same limitations as other helicopters and fixed wing aircrafts but Martin Aircraft have built it to comply with ultralight regulations and therefore suggest it as at least as safe to operate, and claim it is the safest of all jetpacks yet built.

The Jetpack achieves with 30 minutes of flight time and is fueled by regular premium gasoline, though you will undoubtedly earn some disbelieving stares at the petrol station. Since it has been built according to ultralight regulations no FAA recognized pilot's license is required to fly one in the U.S., though this will depend on a country's specific requirements. However, despite being significantly less complex than a helicopter to fly as pitch and roll are controlled by one hand, thrust and yaw by the other, Martin Aircraft won't let anyone take receipt of their jetpack before completing their specially-developed Martin Aircraft Company approved training program. The pilot must also weigh between 140-240 lbs.

After nine prototypes Martin Aircraft have an accurate expectation for how much a jetpack will cost, and suggest that at \$86,000 it is pitched at the level of a high-end car. As sales and production volume increase they expect this to drop to the price of a mid-range car. A 10% deposit buys you a production slot for 12 months hence; progress payments are made during manufacture with final payment due on delivery.

BREAK - OVER



Colonies Independence Week

Starting on July 1st to July 6th, 2010 (5 Days) all thirteen 1776 original colonies will be on the air, AGAIN!

A magnificent NEW, full color, 8 1/2"x11", certificate, printed on heavy card stock, with a map and the state flags of all the 1776 colony states, adorns this award. You can work one state or, all 13 and, be eligible for the certificate.

The theme for 2010 is George Washington. A special "Contact" logo will be affixed if you worked one or all 13 stations. A "Clean Sweep" indicator will also be affixed, for those lucky enough to "Q" all 13.

Special event call signs will be used (K2A Thru K2M). All modes of operation should be represented-SSB, CW, RTTY, Digital, Etc. - The mode of operation is up to the individual colony state station. Please refer to the Station information page for details.

Each OP is to send a contact log stating the Date, UTC, Band, & call sign of each contact, and a BLANK QSL CARD +\$4.00 US. (to help defray printing costs). The blank QSL card is needed because sometime we cannot



read some folks hand writing All the info is on your card, which insures you will get the certificate in short order.

See the Colonies Independence Week website at: <http://www.13colonies.info/> for detailed information.

BREAK - OVER

Scientists Rescue Voyager 2

Voyager 2 was launched 33 years ago and currently remains on course, traveling out of the solar system. It is currently 8.6 billion miles (13.8 billion km) from Earth, passing through the heliosphere, a magnetic bubble that surrounds our solar system. It continues to transmit data, even as it passes through this volatile region.

However, three weeks ago the probe started transmitting garbled messages to Earth. NASA program administrators put the spacecraft in an engineering mode, restricting it to only sending health updates to Earth, while they diagnosed the issue.

It turns out the problem was caused by a single bit in the probe's memory that had flipped. The memory was successfully reset to the proper value and normal operations resumed. In near-Earth satellites, bit flip occasionally occurs due to solar radiation. Since Voyager 2 was so far from the Sun, though, it's unclear exactly what caused the bit flip instance.

NASA's Voyager 2 project manager Ed Massey comments, "In some spacecraft that are closer to the sun one could think of single event upsets caused by solar activity.

But we're so far away, it's hard to say that's what caused it. We're like 93, 94 AU out."

The command to reset the probe was set on May 19, and by May 22 the probe was back in action talking to Earth in its usual fashion.

Voyager 2 was launched in 1977. Its primary mission was to study Saturn. Along the way the craft made flybys of all the other outer gas plants — Jupiter, Uranus and Neptune — thanks to a planetary alignment that only occurs once every 176 years. Even though the probe is leaving the solar system, its sensor measurements are still yielding clues that scientists can use to determine the nature and origin of the heliosphere.

BREAK - OVER

"Discovery consists of seeing what everybody has seen and thinking what nobody else has thought." Jonathan Swift

Sony Laptops Go **BOOM!**

More than half a million Sony laptops sold this year contain a software bug that could lead them to overheat, the company said Wednesday.

Sony has recorded 39 cases of overheating among Vaio F and C series laptops that have been on sale since January. In some cases the overheating has led the laptop case to deform.

A bug in the heat management system of the BIOS software is to blame. Sony is asking users to either update the software themselves or return their laptops so it can apply the update.

The fault affects 535,000 computers although Sony is asking a total of 646,000 owners to update their machines. The additional 111,000 machines are susceptible to several less serious problems that have also been found in the software, said Sony.

BIOS is present in every PC and runs below the operating system, controlling the most basic functions of the computer and interaction between major components. It's usually invisible to users except for a BIOS start-up message that is typically seen when a PC boots.

Sony didn't write the BIOS in the affected computers. It sourced it from a third party and had it customized for Vaio laptops by a different third-party supplier, the company said. But Sony did test it before installing it in the machines.

The problem affects machines sold both in Japan and the rest of the world. Affected models sold outside Japan are the VPCCW25FG/B, VPCCW25FG/P and VPCCW25FG/W.

BREAK - OVER

Invisible Phone

Yet another reason why Kim Jong-Il may just be the most talented person on the planet. After their World Cup loss to Brazil, North Korea's coach may need to call up the country's Supreme Leader for some advice. Good thing Jong-Il invented those invisible phones.

From ESPN: "Kim Jong-Su, the general secretary of the North Korean FA, has said the Dear Leader gave 'in-depth guidance' on how to develop the game in the country and the coach himself has claimed he received regular tactical



cont'd col. 2

Airport Scanner Solution

A. Nony Moose, our intrepid roving reporter, spotted a new proposal in the air travel industry. Researchers are proposing a solution to all the controversy over full-body scanners at the airports: Have a booth that you can step into that won't X-ray you, but will detonate any explosive devices in your possession or on your person.

It would be a win-win scenario for everyone, and there would be none of this racial profiling crap. This method would also eliminate a long and expensive trial. Justice would be quick and swift. Case closed!

This is so simple that it's brilliant.

Imagine: you're in the airport terminal and you hear a muffled explosion. Shortly thereafter, an announcement comes over the PA system, "Attention standby passengers... we now have a seat available on flight number . . ."

Ed Note: This will probably take care of your SONY laptop too!

BREAK - OVER



Invisible Phone *cont'd from col. 1*

advice during matches, apparently using mobile phones that are not visible to the naked eye."

Jong-Il, a man of many talents, is said to have developed the technology himself. Before you laugh in disbelief, remember this is the man who scored 38 under par in his first-ever game of golf — with five holes in one — making him the greatest golfer of all-time. He's got skills.

No word yet whether North Korea also has an invisible vuvuzela in the works.



ARES Breakfast

Saturday July 10th

7:30AM

Perkins Restaurant

Savage, MN

NECOS Schedule July 2010

5 Jul W0NFE Bob

12 Jun KB0FH Bob

19 Jun KC0YHH Tony

26 Jun N0PI Dan

2 Aug W0NFE Bob