



Mike Shy

Official Publication of
Society Radio Operators



Volume 77 Number 9 & 10

September-October 2017

Trip Through The Rockies and Canada

Salvation Army - Norridge Thurs Oct 12th - 7:30 PM

Mike WA9EVF and his family will take us on a trip out west and to the north to see Theodore Roosevelt National park, Glacier National park, Banff National park (Alberta), Yoho National Park



(British Columbia), Jasper National park (Alberta), Badlands National Park and Buffalo Gap National



Museum of the Rockies, Hot springs Mammoth Dig site and the Minuteman National Site.

President's Message

Well I am back from our excursion. We covered 8160 miles and I shot 4,660 pictures. I am pulling some out for our next meeting to show you a fraction of what we saw on our trip. Cathy and I spent time in Theodore Roosevelt National park, Glacier National park, Banff National park (Alberta), Yoho National Park (British Columbia), Jasper National park (Alberta), Badlands National Park and Buffalo Gap National Grassland. we also went to the Museum of the Rockies, Hot springs Mammoth Dig site and the Minuteman National Site. It should be very entertaining.

I want to remind members that the meetings start at 7:30pm. Please be on time.

Reminder that the Bank of America Chicago Marathon is coming up and once again the CFAR repeater will be used for medical communications. The date is October 8th from 6 AM till 3 PM.

73 de WA9EVF Mike

SRO Notes for August 10, 2017 (*Or: Is that a robot in your eye?*)

By Jim Hawes AA9DT



TONIGHT'S MEETING at the Norridge Citadel opens at approximately 8 p.m. on the sundial. Since the sun actually set tonight at 7:58, we had to read our sundial's radium numerals. The other option would have been to break out the club's moondial.

Ha, you scoff! There are no moondials, because the moon doesn't give off enough light: Even considering the logarithmic sensitivity curve of the human eye. Rods and cones as it were, come into play, as well you might think. And yet, as club cognoscenti understand, technical fact must obviate the mythology, the malarkey, the moonshine. Well, not necessarily the moonshine. We pause for just a sip, but **never** inside the Citadel. And then we understand that our moondial need not depend on rod vision. Instead, our delicate moondial operates with selenium, the lunar element. Of course! As precision would dictate.

Now that I've cleared that up, don't you feel a sense of amazement? How about relief? Very well then. For your perspicacious perplexity, take two selenium tablets and call me in the morning. You misplaced your selenium? You mischievous person. Try lithium. And a tall glass of water, eight ounces. But don't call me in the morning. Never for lithium and water. Soon you'll lithium hydroxide, and an awful mess.

The lithium, you know, will also clear up any bipolar tendency. But you'll be left with a unipolar tendency. So for one week, stay away from electronic equipment, and refrain from repairing ham radio equipment. Otherwise a compulsion will grip you. You'll substitute field-effect transistors for bipolar transistors. If you have a magnet, it will attract, but not repel. Directions might be confusing. You'll be able to drive north, but never south. (A little unipolar humor.) But eventually you'll find your compass. Stand before our club orchestra, and take a bow. With my tutelage, you'd be able to semiconduct: Razzmatazz.

TREASURER'S REPORT. Apparently we have money, or the club wouldn't be gathering here tonight. For members at our October general meeting, Treasurer Mike Brost will provide a detailed update.

TONIGHT'S PROGRAM is **Making Stuff Small,** with David Pogue. Here are some highlights...

GRAPHENE. Silicon is the semiconductor that makes cell phones, computers, TV sets, and cars operate. But now there's a new semiconductor on the block: Graphene. In graphene, electrons travel faster than they can in silicon: At the speed of light, in fact. Despite producing almost no heat. Graphene is only one atom thick, making it our thinnest material. It's also our best conductor. What is graphene? A new material that will revolutionize the chip: From transistors to computers. In fact, computers, appliances, and medicine will be smarter, faster, and more efficient. New devices will operate on mere smidgens of power. For graphene, Russian scientists Andre Geim and Konstantin Novoselov earned the 2010 Nobel Prize in Physics. They made the first batches of graphene with Scotch tape and graphite from pencils.

MICROROBOTS will soon perform minimally invasive surgery. The program depicts an experimental microrobot that can swim around inside an eyeball. Eight external electromagnets pilot the robot to the surgical location. The experiment uses pig cadaver eyes. A surgical housing surrounds the patient's head and drives the robot. A scope allows the operating technician to locate and direct the robot in the eye. The same research team is working on a robot that will be able to swim inside veins. At the robot's size, smaller than a grain of rice, the blood becomes a significant impedance. The best mode of transport is a flagella-like, corkscrew tail. The tail mimics the tail on some types of bacteria, such as salmonella. The robot is one-third the width of a human hair.

Foxhunt Report



CFAR 2M Foxhunt - Aug 5th, 2017 by John K9JK

I had parked my car at: 42.106982, -88.00993; near a walk-in entrance to the park area from the neighborhood just to the north. I had a fairly short walk (about 1/10 of a mile, maybe a little more) to the den with radio, antenna and an amazing battery that I'd borrowed from PW. Too bad Jacob and Mac couldn't make it as the spot I had picked had a play area (as Jacob had requested) not too far away, about 100 feet to the SW.

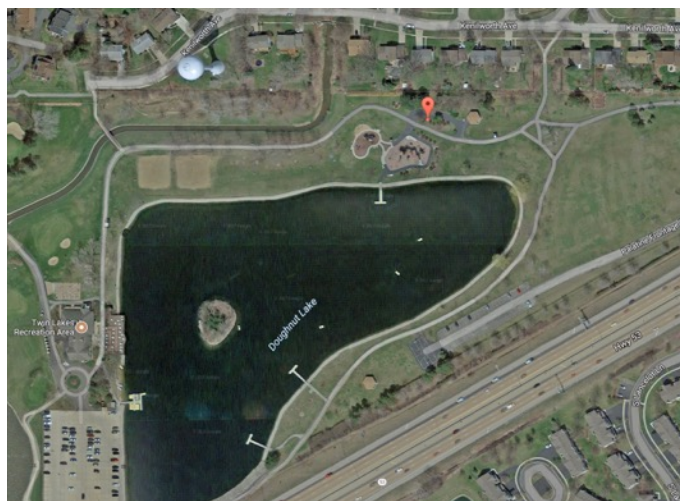
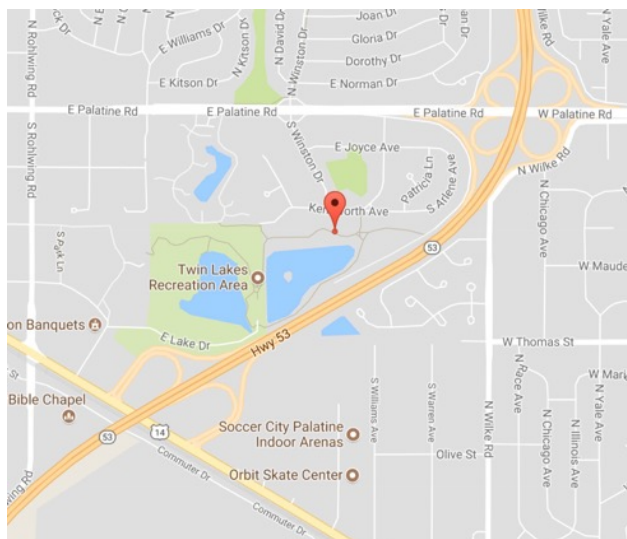
Tom N9CBA, was first at about 8:42PM. Don W9RA, came in second at about 9:09PM. Both parked in the parking area near 42.104918, -88.01072 and walked around the NE corner of that lake to find my "Den". "Den" coordinates were: 42.106346, -88.01122; a bench in the park area.

1. Tom N9CBA - 8:42PM

2. Don W9RA - 9:09PM

DNF - Matt KC9SEM, John WD9EXW,
Mike WA9FTS, Jacob, Mac

Comments from Mike WA9FTS - Due to a death in the Williams/Sanderson family during the hunt, Matt's team turned around to get the family together at this important time. Only three pictures were taken at the starting point.



ARISS Moves One Step Closer to Flying New Ham Equipment to ISS

10/03/2017

Amateur Radio on the International Space Station (ARISS) International Chair Frank Bauer, KA3HDO, has announced that his program has submitted its Interoperable Radio System (IORS) flight safety data package to NASA for review. ARISS has been developing the IORS to replace most of the Amateur Radio hardware that's now on the space station. It is called "interoperable" because it's designed to operate anywhere on the ISS. A NASA flight safety review in about a month is the next step. Bauer said he was highlighting the accomplishment because all the work on the safety data submission was developed exclusively by ARISS volunteers, rather than NASA or other contractors, as had been done in the past. It also meant a substantial saving to ARISS, which has become more reliant on donations in recent years.

"This is a very major IORS milestone," Bauer said. "We cannot get [the new equipment] to orbit without successfully completing the safety review process and getting our hardware certified for flight."

Bauer said having the work done by volunteers not only was "innovative and gutsy," but will shorten the timeline involved to get the new Amateur Radio hardware on board the International Space Station. "Otherwise, we probably would have to slip launch 1 - 2 years while we acquired additional funding to get this done," Bauer said.

He explained that the material turned in for NASA Human Spaceflight Safety Certification covers the first three phases of a four-phase process. The initial steps in the process are aimed at ensuring that NASA understands the design, demonstrating that ARISS understands the potential hazards that the new hardware systems could introduce, and how it has mitigated or prevented them.

"One example is to demonstrate to NASA that our IORS was designed with electrical wiring and circuit breakers that possess adequate features and sufficient margin to prevent an electrical shock or fire on board the ISS," said Bauer, who previously worked for NASA. "Critically important stuff!"

The final phase will be complete when ARISS has finished all testing and NASA deems the hardware flight worthy. ARISS is hoping that will happen next spring.

The new hardware will be used in the two areas of the ISS that have legacy Amateur Radio antennas — the Columbus module and the Russian Service Module. "Interoperability allows us to leverage existing ISS power cables, move it between modules in the event of on-orbit failures, and use it to support common training and operations," Bauer said.

"The IORS is the most complex in-cabin hardware system we have ever designed, built, tested, and flown as a volunteer team," Bauer continued. "We will remove the 3-W Ericsson handheld radio system, initially certified for flight in 1999, and the packet module — both of which have recently had issues — and install a brand-new, specially modified 25-W JVC Kenwood TM-D710GA radio to enable a multitude of new or improved capabilities on ISS, including voice repeater and better APRS operations."

A key development, Bauer explained, is the multi-voltage power supply (MVPS), which interfaces with multiple electrical outlet connector types on the station and provides a range of power output capabilities for current and future ARISS operations and Amateur Radio experiments. It will also allow the ham video (HamTV) digital Amateur Radio TV (DATV) system to have its own power outlet instead of having to share, something that occasionally shuts down the DATV system.

Bauer praised the IORS development team, which includes Chief Engineer Lou McFadin, W5DID; lead MVPS designer Kerry Banke, N6IZW; the MVPS lead designer; MVPS Mechanical enclosure designer Bob Davis, KF4KSS; Ed Krome, K9EK; Dave Taylor, W8AAS; Bob Bruninga, WB4APR; Shin Aota, JLiIBD; Phil Parton, N4DRO, of JVC Kenwood; Operations Lead Kenneth Ransom, N5VHO, and safety package team Ken Ernandes, N2WWD, and Gordon Scannell, KD8COJ.

"Designing, building, and testing the IORS is a huge undertaking and very expensive," Bauer said. That's at least due in part to the fact that ARISS must build 10 duplicate units to support flight hardware and spares, testing, and training. "Hardware parts, development tools, fabrication, testing, and expenses to certify the IORS are expected to cost approximately \$150,000," said Bauer. "And the hard part — that is, the most expensive part — is just now starting."

ARISS invites contributions to help cover the expenses of its work. All donations go directly to ARISS.

Meeting Attendance



Regular Meeting - Aug 10th
Salvation Army - Norridge

Jim AA9DT Pete WV9P
Jean KB9FXL Mike WA9FTS

CFMC Upcoming Regular Meetings - 16th District Police Station

5151 N Milwaukee Av,
Chicago - Wed Oct 25th /
Nov 22nd - 7:30 PM

If you move, let the Editor know your new mailing and email addresses. It is our way of getting Mike Shy to you each time.

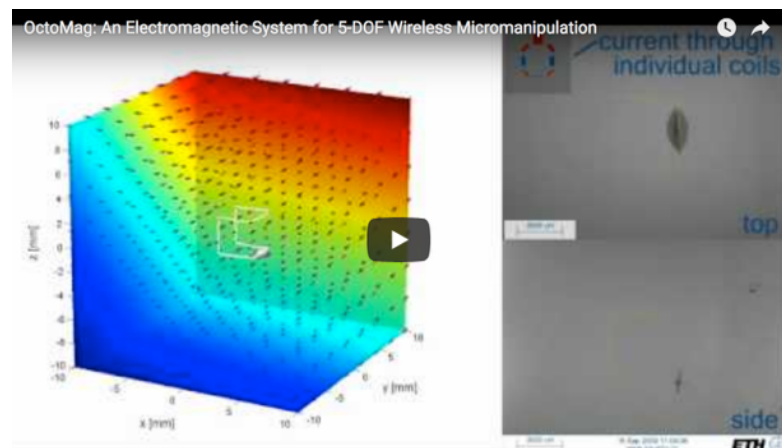
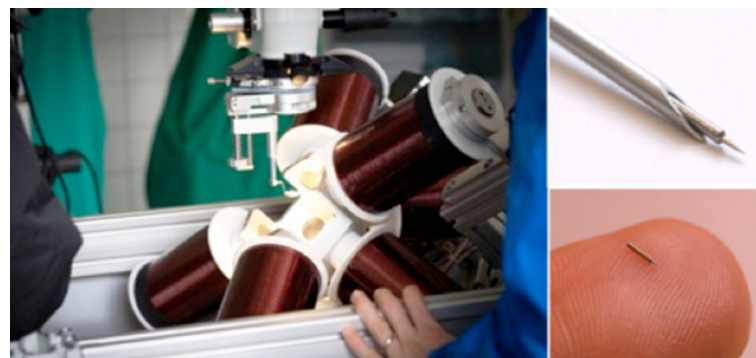
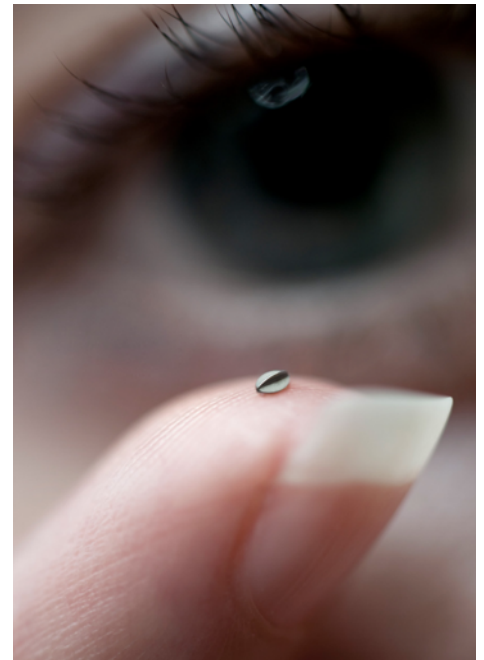


Minimally-invasive eye surgery on the horizon as magnetically-guided microbots approach clinical trials

Unlike larger robots, microrobots for applications in the body are too small to carry batteries and motors. To address this challenge, we power and control robots made of magnetic materials using external magnetic fields. Developed at ETH Zurich's [Multi-Scale Robotics Lab \(MSRL\)](#), the [OctoMag](#) is a magnetic manipulation system that uses electromagnetic coils to wirelessly guide microrobots for ophthalmic surgery.

The OctoMag is capable of generating magnetic forces and torques in three dimensions, and is physically restricted to a single hemisphere to allow easy access for patients and physicians. Using an early OctoMag prototype, ex-vivo experiments were performed in pig eyes to study the navigation tasks required for retinal surgery. Following these experiments, a next-generation system was built to accommodate a small animal head, allowing for in-vivo trials. With this system, mobility experiments were conducted in which a microrobot with a diameter of $285\text{ }\mu\text{m}$ (about four times the width of a hair) was navigated reliably through the eye of a rabbit, demonstrating the feasibility of using this technology in surgical applications.

Robots are capable of exploring many environments that are difficult, if not impossible, for humans to reach; the edges of the solar system, the planet Mars, the inner depths of volcanoes, and bottom of the ocean are just some examples. The goal of these robotic explorers is to obtain knowledge about our universe and to answer fundamental questions about the nature of life on Earth. Recently, micro- and nanotechnologies have fueled an exciting expansion of this field by allowing scientists to use robots to probe life at much smaller scales. [Nanorobotic systems for exploring the structures of biological cells](#), and [robotic motion planning strategies for the investigation of protein folding](#), are two compelling examples of the intermarriage between robotics and nanotechnology. Such efforts and others like them illustrate how several areas of science and engineering are rapidly converging to create a new, interdisciplinary approach to research that promises to revolutionize our understanding of the world around us.



Foxhunt Report

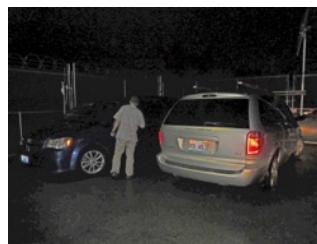
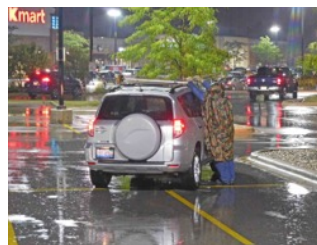


CFAR 2M Foxhunt -

Sep 2nd, 2017 by Mike WA9FTS

John WD9EXW and Janet were the fox. It rained heavily before the hunt while I was at Matt and Patty's and then later just before the hunt. You can see Tom in his rain gear working on his antenna before the hunt. John had a weak signal and had to change antenna and location due to the rain. When the hunt started, the rain quit and we had a mostly dry hunt. Several hunters took North Av west and others, including Matt and Pete took 290 to Lake St and south on Powis to the DuPage Co airport. The problem was to find the street and dead end that John chose. It took a while although Tom made the right pick early for the win. John and Janet were in a parking lot off the intersection of Howard and Arthur. A truck was partially blocking the entrance to the parking lot. As we entered, Pete and John were arriving for 2nd. We got 3rd. Shortly Don arrive and Marty ended the hunt at 9:20. John was running 70w to a tape measure beam. We went to Giordano's nearby. Results:

1. Tom N9CBA - 8:49PM
2. Pete K9PW, John K9JK - 9:10PM
3. Matt KC9SEM, Patty N9PLS, Mike WA9FTS, Jacob, Mac - 9:10PM
4. Don W9RA - 9:14PM



SRO Officers

President
Mike Leibovitz - WA9EVF
Vice President
Jean Pressel - KB9FXL
Secretary
Jim Hawes - AA9DT
Treasurer
Mike Brost - WA9FTS

SRO Directors

Don Moriarty - W9RA
Jon Tammen - K9IQF
Jean Pressel - KB9FXL

Mike Shy Staff

Editor/Circ. Mgr.
Mike Brost - WA9FTS
E-Mail: mikeb2006@comcast.net
708-457-0966 Voice

Mike Shy is published 6 times a year by the Society Radio Operators. Deadline is 2 weeks before the meeting. Contributions are welcome & should be sent to the Editor.

Regular Meeting Place

Salvation Army every even month at 7:30 PM unless other-wise indicated in Mike Shy and SRO web site. Check for exact date & time.

Standing Committees

Membership - WA9FTS
Program - AA9DT
Meeting Refresh. - KB9FXL
Foxhunting - WA9FTS
Repeater - K9IQF
Field Day - WA9EVF
Education - WA9EVF
Mike Shy - WA9FTS
Picnic - WA9FTS
Christmas / Hanukkah Party - WA9EVF
Webmaster - WA9FTS

SRO Web Site

www.w9sro.org
Mike Brost - WA9FTS

SRO Repeaters

	In	Out
CFAR (107.2) PL	147.750	147.150
TOOFAR (110.2) PL	223.260	224.860

Repeater Personnel

Trustee - TBA
CFAR Chairman - K9IQF
Site Maintenance
K9IQF, W9RA & W9BEA
Control Operators
K9IQF, TBD
NW Maintenance
W9JEM
Northeast Maintenance
K9IQF & TBD
Lisle Maintenance
W9AEK

Regular meetings - Salvation Army
- 8354 W Foster Av, Norridge

Board Meetings - Nov 1st - 7:30 PM at QTH of WA9EVF

Mike Shy

Mike Brost - WA9FTS - Editor
5127 N. Monterey Dr.
Norridge IL 60706-3245

Trip Through The Rockies & Canada



First Class Mail



Salvation Army
October 12th - 7:30PM

