

The Dummy Load

Official Bulletin of The Cambridge A.R.C. (Swarc Inc)
-serving the community since 1964

Issue No. 152 Jan. 2015



VE3SWA
DXCC HONOR ROLL
(335/335)
WAZ, WAC, WAS.

Next Meetings
Second Monday of every month
Preston Arena Boardroom at
8:00pm
Mon Dec 08, 2014
Mon Jan 12, 2015
Mon Feb 09, 2015
Mon Mar 09, 2015
Mon Apr 13, 2015

CLUB NEWS

The meeting began at 20:05 with 11 members and 3 visitors present.

- Minutes read by Bob, VE3MF Accepted by Shawn, VE3PSV
- Treasurer's report presented by Hugh, VA3IHM and seconded by Gerry, VE3NXV and Steve VE3USP

Club Executive President

Calvin Benoit VA3CBE
14 Edmund Rd. Kitchener, ON, N2H1J6

Vice President

Scott Buell VE3ANT
15 Woodland Dr. Cambridge, ON, N1R 2X7

Treasurer

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301/400 Champlain Blvd. Cambridge, ON, N1R 7J6

Secretary

Bob Kernohan VE3MF
1215 Avonlea Rd. Cambridge, ON, N3H 4Z7

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Steven Nyul VE3USP
58 Duchess Dr. Cambridge, ON, N1S 4C1

Club Historian

Mike Papp VA3MP
80 Attwood Dr. Cambridge, ON, N1T 1L4

Call Custodians

VE3SWA

Calvin Benoit VA3CBE
14 Edmund Rd. Kitchener, ON, N2H1J6

VE3SWR

Tom Franks VE3MAH also

Member at Large

264 Fearnwood St. Cambridge, ON, N3C 3W9

Past President

Dave Lott VE3BHZ
51 Lincoln Ave. Cambridge, ON, N1R 4W6

Meetings

Meetings held at 8:00 P.M. on the second Monday of the month, Board Room Preston Arena (Bishop St at Hamilton St.) No meetings in July and August. Visitors always welcome.

Club Net

VE3SWR repeater 146.790 Mhz every Wednesday at 2100R (9PM local)

Old Business:

- RAC winter contest discussed and Josh VE3CEN expressed interest.
- Discussed visit by Eric VE3EI and most desired topic. Remote HF stations was preferred for the presentation. DStar and Repeater Linking were items of less interest.
- Manuel Centeno contacted Calvin VA3CBW re license and Calvin had forwarded info. Steve VE3USP is also in contact and will be supplying a CD.

New Business:

- Shawn VE3PSV informed the club of his mother; Margret's passing on Nov. 17. Shawn asked for the club's assistance for the time when he will be moving.
- Visitor Robin Hilbrecht, U of W student and member of the WATSAT team at the University of Waterloo discussed her involvement with the team and the competition that could result in their completed satellite being launched in 2016. A schedule of the project was requested.
- Calvin VA3CBE discussed his purchase of flowers for Dave Lott's family gathering after Dave's unfortunate passing. Calvin asked for the support of the club for the purchase. Steve VE3USP made a motion, seconded by Gerry VE3NXV for the vote.

- Majority voted in favour. Bob VE3MF voted against and Hugh VE3IHM and Tom VE3MAH both abstained. The need for a motion and vote is because the purchase goes against the direction of the SWARC constitution. "That if a member of SWARC should become a silent key, a donation of \$25 would go to the charity requested by the relatives."
- Hugh VE3IHM made a motion to review the club's documented handling of bereavements. Seconded by Gerry VE3NXV.
- Tom VE3MAH requested to send \$10 to W.N.Y.S.O.R.C. as a participant in their repeater management.
- Tom VE3MAH reported on VE3BHZ, Dave Lott's activities with the club, starting in 1995.
- Calvin VA3CBE donated vhs tapes of Wingfield Farms for the club.

Meeting was closed at 21:01, moved by Brian, VE3ESW and seconded by Gerry, VE3NXV

Please note: Christmas goodies and coffee supplied by Calvin VA3CBE and Tom VE3MAH

Present at Meeting-: Members:

VACBE Calvin Benoit
 VE3IHM Hugh Martin
 VA3MP Mike Pap
 VA3WIF Jeff Rombough
 VE3USP Steve Nyul
 VA3CF Clarence Fatt

VE3MF Bob Kernohan
 VE3ESW Brian Lowery
 VE3NXV Gerry Allen
 VE3SKX Ken Meihm
 VE3PSW Shawn Gartley

Guests:

VE3CEN Josh Mardling
 Robin Hilbrecht

VE3JOI Jean Valtos



ARTSAT2: DESPATCH (FO-81) Satellite Goes Dark

January 5th, 2015

The ARTSAT2: DESPATCH (http://despatch.artsat.jp/en/Main_Page) sculpture/satellite (FO-81) has stopped transmitting after 1 month. The satellite was one of two carrying Amateur Radio payloads that were launched December 3 onboard a Japan Aerospace Exploration Agency (**JAXA**) vehicle into an Earth-escape orbit as piggyback payloads of the **Hayabusa 2** (http://b612.jspec.jaxa.jp/hayabusa2/e/index_e.html) asteroid sample-return mission into deep space. Crafted as a physical art object, ARTSAT2: DESPATCH transmitted a CW beacon on 437.325 MHz. The other Amateur Radio payload was **Shin'en 2** (Abyss 2, <http://kit-okuyama-lab.com/en/sinen2/>). Ground controllers at Tama Art University, who had estimated the spacecraft's battery would last for 27 days, concluded the satellite's mission on January 3.

“DESPATCH will continue to orbit around the sun as an artificial asteroid,” said Akihiro Kubota, a Tama Art University faculty member. “By examining the calculated results for the local minimum value of the distance between the Earth, DESPATCH will approach to less than 1 million km from Earth after about 350 years.” Kubota said it could come closer, “due to the interaction with unpredictable other celestial bodies.” The actual sculpture was created using a 3D printer.

Kubota expressed appreciation to the many Amateur Radio operators who received and **reported** (<https://docs.google.com/spreadsheets/d/1WP-FzXHe8axAzNy44SGbKpJqIRKWHAcIP9vXnaHMB6g/edit#gid=0>) the “super-weak” CW signal from DESPATCH’s 7 W transmitter in deep space. An algorithm running on the onboard computer drew on readings from all of the spacecraft’s sensors to compose and encode poetry “reflecting not only the sensor data but the artist’s subconscious personality.” The ground team used a “**cooperative data reconstruction**” (http://despatch.artsat.jp/en/Cooperative_Data_Reconstruction) approach, piecing together the received fragments of the satellite’s poetry broadcast to reconstruct the whole. DESPATCH received two reception reports — from PE1ITR and OK1DFC — when the satellite was some 2.9 million miles from Earth. “They were far beyond what we expected,” Kubota said.

Kubota said that while the satellite has stopped transmitting, “the life of DESPATCH as a sculpture around the Sun is almost eternal.”

The ARTSAT project will continue, Kubota added. “We already have started the conceptual design of ARTSAT3,” he reported. — *Thanks to AMSAT News Service via Akihiro Kubota*

6 Incredible Spy Technologies That Are Real

Editor's Note: This article was updated at 3:50 p.m. E.T.

Killer umbrellas, stick-on fingerprints and lock-picking cellphones — James Bond and his nemeses certainly used their share of bizarre spy gadgets over the years.

But many of the most far-out devices seen in old movies have been made obsolete by incredible leaps in today's consumer technology, said Vince Houghton, a historian and curator at the International Spy Museum in Washington, D.C.

"A modern smartphone does more than most people could do 10 years ago on 10 different things," Houghton told Live Science.

For instance, nowadays, "wires," like those used to catch mobsters plotting on tape, are now entirely wireless, and they're so tiny that they can be concealed in earrings, buttons and even patches under the skin, Houghton said.

And although most of today's cutting-edge spy technology is classified, knowledge of a few bizarre techniques does get leaked. From eavesdropping techniques to programmed kitties, here are some of the most incredible real-world spy technologies. <http://www.livescience.com/46931-darpa-military-tech-gadgets.html>

1. Cold War-era gadgets

Spying is almost as old as human civilization. Both the ancient Babylonian law called Hammurabi's Code and the Bible's Old Testament described espionage as a way to gain an edge on adversaries, Houghton said. The rise of modern nations, however, caused espionage gadgets to flourish.

During the Cold War, the golden era of James Bond's spy gadgets, a real-life Bulgarian assassin used an umbrella to fire a toxic pellet of the poison ricin into a Soviet defector in London. The Soviets also developed a lipstick gun known as the "kiss of death," which fired a single bullet at close range, Houghton said.

2. Oops, kitty kitty

During the Cold War era, a few outlandish ideas made it past the drawing board. Unlike animals, which have cochleae (<http://www.livescience.com/144-silicon-hearing-device-mimics-ear.html>) in their ears that filter out noise, listening devices were historically bad at filtering out background noise. So, in the 1950s and 1960s, U.S. spies got the bright idea to use an animal's cochlea to spy on the Soviets. They implanted a microphone into a cat's ear canal, a radio transmitter next to the skull, and a battery into its abdomen, and turned its tail into an antenna. Then, they spent hours training it to hop through obstacle courses. Unfortunately for the spies, the high-tech kitty often wandered off in search of food.

"Cats don't really do what you want them to," Houghton said.

So the team went back to the drawing board, retrained the cat to ignore its hunger signals and plopped it down in a park across from the Soviet embassy in Washington, D.C. As soon as it tried to cross the street, it got run over by a taxi.

"They had their multimillion-dollar cat there, smooshed on the street," Houghton said.

For decades, the CIA also spent millions to fund Operation Stargate, which aimed to use psychics to reveal Soviet secrets. The program was disbanded during the Clinton administration. The agency also funded the notorious MKULTRA program, (<http://www.livescience.com/17456-rfk-assassination-sirhan-sirhan-hypnotized.html>) which aimed to harness psychedelic drugs like LSD for mind control, Houghton said.

3. Visual microphone

The government doesn't develop all the strangest spy technologies.

Scientists at the University of Texas created a way to reconstruct conversations simply by taking pictures of the environment in which the words were spoken, according to a presentation at the 2014 SIGGRAPH conference. The sound spying system (<http://www.livescience.com/42984-one-way-sound-machine-created.html>) takes advantage of the fact that sound waves produce minute, invisible-to-the-naked-eye vibrations that can still be caught on camera. These vibrations can then be analyzed to recreate the original sounds. The new technique now means that, theoretically, anyone who can snap photos or video of a room could recreate conversations that occurred there — without having to bug the place or put their ear to the door.

4. Hacked medical implants

It's not just a plot point on Showtime's "Homeland"; medical devices that can be wirelessly controlled and battery operated — such as insulin pumps, implantable defibrillators and pacemakers — can be hacked. At a 2011 Black Hat Security Conference in Las Vegas, hacker Jerome Radcliffe showed that it was possible to hack his own insulin pump. A few years earlier, hackers raised the possibility that wirelessly controlled pacemakers could also be hacked. So far, no one has documented a case where malicious forces have fiddled with someone's implanted medical device (<http://www.livescience.com/39889-medical-devices-vulnerable-to-hackers.html>) — at least that we know of. But the risk has spurred the U.S. Government Accountability Office, (<http://www.gao.gov/assets/650/647767.pdf>) a watchdog agency within the government, to urge the Food and Drug Administration to require the companies that make such medical devices to eliminate these vulnerabilities.

5. I see you

International spies aren't the only ones who have an interest in watching other people. Companies that want to know more about the people who buy their products could one day use a creepy combination of tailored marketing and surveillance. The company Almax has developed a bionic mannequin called EyeSee (<http://www.bloomberg.com/news/2012-11-19/bionic-mannequins-spy-on-shoppers-to-boost-luxury-sales.html>) that could be placed in clothing stores. Behind the mannequin's dead eyes hides a camera that uses facial-recognition software that can identify a shopper's age, race and gender. The idea is to deduce what kinds of consumers buy certain products.

6. Unbreakable codes?

Ultimately, the goal of most espionage organizations around the world is to create perfectly secure communications. Some think that quantum encryption — which uses the principles of particle physics to ensure that a message is readable only to its intended recipient — may be the key to creating codes that can't be broken.

"At this point, the [National Security Agency] can listen to anything they want to, regardless of what encryption is used," Houghton said. "Quantum encryption (<http://www.livescience.com/44389-quantum-cryptography-enables-perfect-privacy.html>) would be the first time you could create a completely unbreakable code."

Today, quantum encryption is still in the proof-of-concept phase, as far as we know. However, the technology is now getting practical enough that governments are probably very interested, he said.

"The first country to pull that off is going to be way ahead of everyone else," Houghton said.

Robin Varcoe, VE3OAV, member of our Club has had a wonderful vacation in the last summer. Robin went to northern Ontario at the Sault Ste. Marie area where he visited Canadian Bushplane Heritage Centre (CBHC), <http://www.bushplane.com> in the city and is kind enough to share with us the pictures and notes he made. The Museum preserves and tells the story of Canada's bush plane and forest protection heritage.

The most interesting aspect of the museum of course is the use of radio in fire spotting from observation towers throughout the

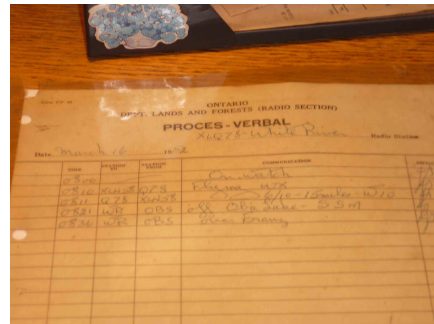
The first fire lookout towers in Ontario appeared on the scene in the 1920's. These early towers were constructed of wood; some were simply platforms in tall trees. By 1947, there were 52 wooden, and 227 steel towers across Ontario. The 1950's and 1960's marked the glory years for fire lookout towers in Ontario. By 1962, there were a total of 316 steel towers in operation throughout the province; by which time most or all of the wooden towers, save one, had disappeared. Towers were organized into divisions; in each division, a "key" tower was established. All of the towers in a particular division reported to the key tower, which in turn, reported to Chief Ranger's Office, who reported to the Forest Protection Office and the Forest Protection Supervisor. Key tower operators were always the most experienced and reliable. The regular routine called for the key tower to conduct a roll call to determine local conditions such as rain, lightning, etc. All divisions operated on the same radio frequency so that if a smoke was

By the late 1950's and early 1960's, all towers were connected by telephone lines; in fact at one time, the former Department of Lands and Forests had more miles of telephone line than Bell Canada.

From the hay days of Radio Operations come these pictures:



Ontario Department of Lands and Forests Radio Station



Station Log Book.



Field setup

The impetus for the development of the network was the "Haileybury Fire", of October 1922.

The Ontario Provincial Air Service (OPAS) was formed by the Government of Ontario in 1924 to protect Ontario's vast forests through the aerial detection of forest fires, aerial transportation of fire crews and equipment, map making, aerial photography and forest inventory. At the same time, they constructed a hangar on the shore of the St Mary's River in Sault Ste. Marie to house an initial fleet of World War I surplus Curtiss HS-2L flying boats. (<http://www.bushplane.com/index.php?id=bushplanes-hboat>) In the first year of operation, 600 forest fires were spotted. The first aerial waterbombing (<http://www.bushplane.com/index.php?id=waterbomb>) of forest fires by the OPAS was conducted using water-filled paper bags dropped from aircraft. In 1957 successful waterbombing began using a piston DHC-3 Otter with roll-over water tanks mounted above the aircraft's floats. This evolved into water storage directly in the floats of DHC-2 Beaver (<http://www.bushplane.com/index.php?id=bushplanes-dhc2>) and DHC-3 Otter (<http://www.bushplane.com/index.php?id=bushplanes-dhc3>)

The current home of the Museum is the old hangar for the water bombers used to control forest fires in a huge part of Ontario. Some of the planes in the exhibit are priceless from the first of the Beaver float planes:



Beaver *CF-OBS* was the first production de Havilland Beaver (<http://www.bushplane.com/index.php?id=bushplanes-dhc2>) manufactured by de Havilland Canada. It was purchased by the Ontario Provincial Air Service (<http://bushplane.stitchkinggroup.com/operators/histories-opas/>) in 1948 and was the first of a total of 44 aircraft purchased by them over the years. *CF-OBS* is the oldest production beaver in flying condition.

The next is a sketch of a plane close to my heart:



Thanks Robin for the nice pictures and the excellent field report!

Have you worked them? DX news for the month

6W, Senegal:

Francis, F6BLP, returns to Saly Partudal and will be active again as 6W7SK from Jan. 10 to Feb.5. QRV mainly on CW and RTTY on 160-10m. Log will be uploaded daily to ClubLog, QSL via F6BLP (B), OQRS, LoTW. <http://f6blp.org/>

LZ, Bulgaria:

The Bulgarian Radio Club Blagovestnik (LZ1KCP) offers a new All Saints 2015 award, honouring Bulgarian Saints with the following special event calls:

Januar - LZ290MB	February - LZ550SI	March - LZ386SKI
April - LZ883PI	May - LZ102SIB	June - LZ293MA
July - LZ429PS	August - LZ250MM	September - LZ129WNLS
Oktober - LZ130SAK	November - LZ259PA	Dezember - LZ362MT

LZ290MB honours the memory of the martyr Boniface. QSL via bureau, LZ1KCP.

PJ2, Curacao:

Anders, SM4KYN, continues to operate holiday-style as PJ2/SM4KYN until the 15th on HF. QSL via SM4KYN.

PY0F; Fernando de Noronha:

Leo/PP1CZ operates as PY0F/PP1CZ between the 8th and 15th from Fernando de Noronha (SA-003, DIB OC-01, WLOTA 1208, PYFF-016). QRV on 80-10m on CW, SSB, and RTTY. QSL via h/c (d/B), LoTW, OQRS.

SP, Poland:

Members of the club station SP7PTK operate as HF7SIEMA until January 20 in the context of a musical Christmas Charity event. QSL via bureau. <http://sp7ptk.pl/>

T8, Palau:

Operators Yu/T88HK (JE6DND), Hiro/T88HS (JA6KYU), Yasu/T88RR (JA6UBY), and Mike/T88SM (JA6EGL), all members of the Hakata Radio Club, are going to get on the air from Koror Island (OC-009, WW Loc.: PJ77fi) between the 7th and 15th. QRV on 160-6m on SSB, CW, and RTTY. QSL via homecalls.

TA, Turkey:

TC100GLB commemorates the Battle of Gallipoli 100 years ago. QRV until April 30 on HF on SSB, RTTY, and PSK. QSL via TA1CM.

ZD9, Tristan da Cunha and Gough Island:

David, ZS1BCE, is currently working as a radio technician on Gough Island (AF-030) until September. He plans to get on the air during his spare time signing ZD9A on SSB and digital modes. His QSL manager will be Alan, ZS1LS, who will also take care of LoTW uploads.