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Radio Amateurs &Canada OCTOBER 2018

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VE3ERC-LUB



Wes' (VE3ML) new tower and antenna. See more on page 5.

Back-of-the-Napkin Eyeball

QSO notes and stuff by Rich, ve3DCC

OCTOBER 2018

s promised last month, I will comment on an excellent work of non-fiction that was published in March 2018. It is called "The Perfectionists: How precision engineers created the modern world". The author is Simon Winchester. I will also offer a few personal, perhaps controversial, insights on the material.

For those who are intrigued with the precision with which complex machines operate, this book is an eye-opener. It examines everything from the early machining involved in primitive cannons thru to the building of Rolls-Royce and Ford engines to the etching of tiny circuit boards. I could not put it down.

I was especially enthralled by Chapter 8, "Where am I and What is the time". On October 7, 1957, an artificial moon was in orbit around the earth-- Sputnik. The launch of this "two hundred pound, twenty inch diameter sphere of polished titanium alloy" caught the Americans by surprise. It orbited the earth roughly once every 96 minutes continuously emitting a radio signal. Many Hams tuned in to listen. By listening at the central frequency and monitoring the beep being sent out at twice a second, scientists determined that the frequency actually changed as the satellite approached, passed overhead then disappeared into the distance much as a train whistle does as it passes. This is called Doppler Effect. Essentially, as the satellite beeps, it "catches up" to its transmitted signal, effectively shortening the wave length and hence increasing the frequency. As it speeds away, the wavelengths are lengthened so the frequency is reduced. Several NASA scientists at the Applied Physics Lab used this shift and the calculated speed of the satellite (roughly 18,000 mph) to determine how far away SPUTNIK was on each pass. One scientist, Frank McClure, realized that "if an observer on the ground could establish with precision the position of a satellite in space, then the opposite, the numerical reciprocal, could be true as well. From the position of the satellite, one could compute the exact position back on earth of the person or machine that observed it."

Effectively, this Doppler principle created a brand new navigation system—GPS! NASA was quick to exploit this to predict the orbits of EXPLORE 1 and other satellites as the USA joined the space race. The early system, called TRANSIT, was then used to secure and locate the fleet of Polaris-missile armed nuclear submarines up to 1996. (pp 262, Winchester). Roger Easton, U S Navy, realized that if there are two "clocks" perfectly in synchronization that are separated and can be monitored by a listener, the speed of the signal between them is fixed, the clocks show the same time so the difference in the time of reception of the "clicks" is the result of the distance between them. He devised a simple experiment—he installed an accurate quartz oscillator which could give a constant frequency standard (a "clock") in the trunk of a colleague while keeping the "twin" clock in his lab. As his colleague sped away, the receiver oscilloscope showed the discrepancy in frequencies, to the extent, that Easton could "see" when the vehicle sped up or changed lanes. Clock-difference navigation was shown to work.

Unfortunately, the book omits a key detail. To fill in the gap, I need to go to another source and National Best Seller: "Einstein's Universe" by Nigel Calder.

Einstein predicted that clocks would be affected by motion and gravity. The first is Doppler-like but the second is a bit more intriguing. This is called Relativity, and in the early satellites, as lore has it, there were two pieces of software on board—one without the Einstein adjustment and one with. Very quickly, the Einstein module had to be activated because the location calculations were in error. To appreciate this, let me quote from Calder (page 60):" In 1971, two American physicists, J.C.Hafele and Richard Keating, carried out a pioneering experiment of taking portable caesium clocks (four of them, for safety and reliability) right around the world in passenger jet aircraft. They compared them at the beginning and end of the journeys with the reference clocks at the US Naval Observatory in Washington DC. One circumnavigation was made eastwards and one westwards with both journeys taking about three days." The clocks NO longer agreed.

"The eastbound clocks lost, on average, 59 nanoseconds (billionths of a second) compared with the clocks in Washington, while the westbound clocks ganed 273 nanoseconds.... When the flight paths are accounted for, relativity theory predicted a lost of 40 and a gain of 275 nanoseconds."

Two effects on time-keeping were confirmed:

- 1. Clocks run faster at high altitudes where gravity is weaker and
- 2. The differences arise from a subtle point in Einstein's theory concerning the behaviour of clocks travelling in the SAME direction of the Earth's rotation or AGAINST it.

It is worth noting, that to "keep" time, you need a reliable device that "clicks" steadily. "Every atom in the universe is a natural timepiece because it absorbs and emits light at precisely defined frequencies....In the case of light, the vibrations are electric. "(Calder: pp54). Presumably, the atoms in living animals behave the same way.

"The standard atomic clock uses a continuous beam of atoms of the element caesium... In a cavity inside the clock, the atoms stimulate one another to make the change and produce a continuous wave at a precise frequency. The wave is used to regulate the vibrations of a quartz crystal, which in turn can drive an electronic digital display... Caesium is not the only element used in atomic clockmaking: rubidium serves in many clocks for practical applications, and hydrogen in clocks for scientific work where exceptionally high precision is required."(page 58)

"Since 1967, officially and internationally, the reckoning of time is based on the caesium atomic clock. Nowadays one second is defined as 9,192,631,770 vibrations of the microwave radiation emitted by caesium-133 atoms during a specified atomic rearrangement... the atomic clock is far more reliable as a timekeeper than the rotation of the Earth, the apparent motions of the Sun and the stars." (page 59)

It is worth noting that some 80 atomic clocks in government labs around the world are pooled and weighted at the International Time Bureau in Paris. Occasionally a "leap second" is added or subtracted to adjust for discrepancies between atomic and astronomical time for changes in the length of a "day".

Remember that in this mechanical universe, the "day" is not the basic currency—the moon does NOT have an exact 28 day orbit, nor does the Earth have a 365 day orbit around the Sun.

How then to measure the passing of events, for that truly is what "time" is. I wonder if it is an artificial creation of the human mind to track the chronology or order of events. Surely, if we had no capacity for memory, we would not have to "remember" either events or the order they occurred in? Events would just happen without record?

So, what if the clock device is in fact in "error".. either slow or fast..? The variance in the measuring device cannot alter reality- that is, fanciful notions of going "back" in time are just that! In reality, Once the dominoes fall, with all of the collateral side-effects that occur, they cannot be undone. Some have conjectured that the rate of atomic clocks and aging within a body can be retarded by orbiting the event horizon of a black hole so that an astronaut does not age and outlives all family and friends. That is not a happy thought!

Of course, as we look into the night sky, we can witness star events, light, that started off on a journey to us, many, many years in the past. But witnessing the event, does not

mean we can interact with that exploding star... the event has already occurred. Similarly, if we could go far enough out into space, say 60 or 70 light years, we might, with the right location and powerful telescope, witness the JFK assassination—but, we could not tell him to duck. Time is a one-way street.

The notion of "clockwise" is also worth of consideration. The direction of the hands of a clock mimic the movement of the shadow on ancient sundials as our Sun "traverses" across the sky, west to east. Einstein nailed it when he specified WITH the direction of rotation or against. There is nothing sacred about going clockwise.

What this means is that, in addition to Doppler, there is something that occurs at a quantum level, that slows down an atomic clock as the clock travels in the direction of rotation into the "mist" of particles that surround the earth. Nature abhors a vacuum and seems to want to fill it, but with what? What do the layers of space above the Earth do? Although American physicists, Albert Michelson and Edward Morley, in an 1887 experiment designed to show that an "ether" exists in space, appeared to show the opposite, the strange behaviour of atomic clocks suggests that something is there to slow the clock down, to s t r e t c h that wave-length... while, the motion AGAINST the rotation, "counter-clockwise", interacts with the motion of the Earth, to actually SPEED up the clock and shorten the wavelengths.

Sometimes, examining the exceptions to a rule help us to understand the rule. Considering how fluids in space like to form spheres with minimum area for a given volume, and how objects in water float if they can displace their weight in fluid, and how helium balloons are indeed anti-gravity devices that follow the same Archimedes principle for flotation, is it possible that columns of "stuff" surrounding the planet see an imbalance that pops the offending balloon "up" or forces matter into spheroids. If there is an edge to the Universe as some scientists suggest, then could gravity be partly the force of the Universe pushing in and down? Is the Universe infinite but finite? Could this be the reason that these clocks behave as they do?

Winchester closes the last chapter with this thought:

"..fully recognized by teams of metrologists, that time underpins everything. 'Everything' even includes, it now seems, the property of gravity. A clock that is on a table just five centimeters higher than another will record seconds that are barely measurably longer—but incontrovertibly longer, nonetheless- than its partner. And this is simply because it is less affected by the Earth's gravity, the planet's centre being that tiny number of centimeters more distant." (page 354)

PS: I personally find the speeding up of the clock even more intriguing.

Winchester concludes with:"....they are trying to establish and prove a physical, traceable connection between on the one hand the mysterious force that keeps us all rooted here on Earth and on the other hand the fundamental steady tick of duration--The duration by which, fundamentally, we measure everything that we make and use, and which in turn helps establish for us with unfailing exactitude the precision that allows the modern world to function." (page 355)

A book like "The Perfectionists" certainly leaves you thinking in new directions. As always, I hope that I have poked your brain, a wee bit. Read the Book!

Cheers,

73, De ve3DCC, Rich.

Suggested Reading:

Einstein's Universe by Nigel Calder, Penguin Books, 1979, ISBN 0 14 00.5499 5

The Perfectionists by Simon Winchester, HarperCollins Books, 2018, ISBN 978-0-06-265255-3

The Quantum Physics Bible, by Brian Clegg, Firefly Books, 2017, ISBN 978-1-77085-992-0

Adventures in Raising a Tower By Wes Snarr (VE3ML)

It began with a dream.

In the teenage years that I was active in the hobby, I was on the air with the antennas that were within my meagre budget. These consisted of a dipole and a single band HF vertical, the latter being fashioned from a repurposed TV antenna mast affixed to a well aged fence post with discarded bicycle tubes serving as clamps and insulators. Owning directional antennas was something that I could only dream of.



When I went off to University more years ago than I care to admit, the equipment was sold, my station license expired, and life happened.

Fast forward to the fall of 2017, I've just retired, have held my renewed license since 2012, and am at a stage of life where I have the time, the means, favourably disposed neighbours, and most importantly, a supportive XYL to erect a tower with the dreamed of directional antennas.

With the advice of fellow club members I settled on a tower with a height of approximately 40 feet plus 8 feet of rotating mast projecting above the tower. The mast I was able to source would project



10' and 6". One club member was horrified when he heard that I was going to shorten a perfectly good aluminum mast by two and a half feet, and so it remains at its original length.

A DMX series tower with 6 sections was acquired from a Ham in the Niagara Region just before I retired last year. I spent several weeks in the spring of 2018 sanding it down, applying a coat of boiled lin-

seed oil, and then a coat of Tremclad oil based paint. The glossy blue color gives it a sort of quasi-military look.

The Ham IV rotor is circa late 1970's, and was given a complete overhaul prior to putting it up on the tower. The antennas consist of a Mosely M-33 tri-bander, a Maple Leaf Communications 4 element six metre

yagi, an M2 seven element 2 metre yagi; all topped off with a Diamond X-50 dual band VHF/UHF vertical. The tower is highly visible from the street and really stands out in a newer development with underground services.

Half the fun has been planning the tower, including the acquisition of the many components from diverse sources; it's not unlike assembling a giant Meccano project. The other half of the fun is using it. It's been a pleasure to have worked with others to see this project



through to completion, and I gratefully acknowledge your help and advice. I couldn't have done it without you.



73, de VE3ML Wes Snarr

Thanks to Harold Braun VE3CD for sending off this historic article from 1976 which appeared in TOA, January of 1976. TOA was the magazine published for **Canadian Amateur Radio Federation (CARF) that changed their name to RAC in the '90s.**

World's Most Powerful Satellite

The world's most powerful satellite, CANADA'S COMMUNICATIONS TECHNOLOGY SAT-ELLITE (C.T.S), designed and built in Canada, will be launched from Florida early in 1976.

A little more than a decade has passed since Canada became the first nation to join the Soviet Union and the U.S.A. in the space age.

Seven successful scientific and communication satellites have now earned this country's space scientists and engineers a performance and reliability record respected around the world.

In 1958, a year after the Russians launched SPUTNIK I, the world's first artificial satellite, Canadian scientists outlined proposals for satellite studies of the ionosphere.

At a conference in the U.S.A. that year, the Canadian proposal was recognized as the most advanced to date, but no action was taken. However, when NASA decided to put up such a satellite, Canada was ready with a detailed proposal. An agreement with NASA was signed and Canada entered the space age in 1959.

Three years of hectic activity followed for scientists, engineers and technicians at Ottawa during the building of Alouette I.

The main experiment on Alouette I was the sending of radio waves at various frequencies into the ionosphere and measuring their reflection by the layers of charged particles. Changes were still being made in the final days before launch, but the satellite went up on schedule at 2:06 AM, September 29, 1962. Tired crews were relieved when ground stations in South Africa and Alaska confirmed Alouette I was in orbit and operating.

The four experiments it carried resulted in some 400 scientific papers, more than those made possible by any other satellite. Sounding of the ionosphere from above with radio waves, measuring cosmic noise, listening to very low frequency radio signals and counting the charged particles around the satellite, gave the first global information of the upper regions of the ionosphere.

Its designers and builders expected it to have a one year life, yet Alouette I continued to send back useful information for almost a full eleven year cycle of solar activity.

Alouette II followed and was launched November 25, 1965. It was a standby model of Alouette I which was modified and rebuilt for its new mission. Alouette I was in a circular orbit 625 miles above the earth but Alouette II was placed in an elliptical orbit ranging from 320 to 1,800 miles. Carried aboard were five scientific experiments including one provided by NASA, involving the U.S. satellite Explorer XXXI to provide measurements that could not be made by a single satellite. Again results more than lived up to expectations.

ISIS I resulted from the experience gained from these two satellites and was launched January 28, 1969. It weighed 580 lbs. and carried 10 experiments. Its elliptical orbit ranged from 360 miles to 2,160 miles covering the most important areas of the ionosphere. ISIS II was launched into a circular orbit at an altitude of 756 miles on March 31, 1972. It carried 12 experiments including one making it possible to piece together better pictures of the aurora borealis. Together, the four satellites firmly established Canada's position in the space age.

Canada entered a new phase in 1972 when Anik I was launched November 9 giving Canadians the world's first domestic geostationary telecommunications satellite system. Anik I provided high capacity transmission of TV, telephone and data when it became operational on January 1, 1973. Anik II followed on April 20, 1973 and Anik III in February of 1975.

The Aniks represent the current "state of the art" of satellites and were important steps

toward the goal of equal access to communications for all Canadians. But new technology was needed to develop advanced, higher-powered systems to extend satellite communications and meet specific Canadian needs in the 1980's.

On April 20, 1971 an agreement was signed by the Canadian D.O.C and the U.S. NASA to build the Communications Technology Satellite. No funds cross the border. Canada designs and builds the spacecraft. NASA provides some advanced components and performs the launch. Experiment time is to be shared 50-50 between the two countries. The program is managed by Communications Research Centre near Ottawa and among the Canadian companies participating in the 60 million dollar project are Spar Aerospace Ltd. Of Toronto, RCA of Montreal and SED Systems of Saskatoon.

Why a more powerful satellite? Certain restrictions inhibit development of present satellite communications systems to meet the needs of tomorrow. They operate in the 4-6 GHZ band shared with other types of systems on the ground. Power levels are limited to prevent interference and large, expensive ground antennas are required.

Better ways have to be found to expand television distribution and provision of voice and data services to even our remote locations. There is keen interest in systems which permit origination of live colour TV programs to all of Canada from areas not served by conventional micro-wave links. A possible solution is the use of more powerful satellites operating at much higher frequencies with smaller, less expensive, possibly even portable ground stations.

The design of C.T.S is based on three major advanced subsystems:

- 1. A pair of lightweight extendible arrays carrying enough solar cells to provide an initial power output of more than 1 kilowatt.
- 2. A travelling wave tube amplifier of novel design having an efficiency of greater than 50% at a power output of 200 watts.
- 3. A three axis stabilization system employing a fixed momentum wheel and hydrazine gas thrusters to maintain antenna boresight pointing accuracy to within plus or minus .2 degrees in pitch and roll and plus or minus one degree in yaw.

Conventional satellites are stabilized by spinning. Because solar cells are mounted on the outer circumference roughly two-thirds of the cells are in darkness at any one time. The

C.T.S. could not afford the luxury of a one-third efficiency power source.

To provide the necessary power the pair of arrays will unfurl on command from the earth when the C.T.S. is on station. With the "sails" deployed the spacecraft will measure 55 feet from tip to tip. A sensor mounted on each sail will control a drive mechanism to enable the sail to track the sun.

The key to the efficiency of the new travelling wave tube developed by NASA is its multiple collectors which attract electrons over a varying range of voltages. Along with the 200 watt amplifier the subsystems consist basically of a high sensitivity, high-gain receiver, driver travelling wave tube amplifiers and two steerable 2.5 degree beam width dish antennas.

The transponder will have four 85 MHZ pass bands, two for transmitting between 11.7 and 12.1 GHZ and two for receiving between 14.0 and



14.3 GHZ.

The primary function of the C.T.S. three axis stabilization system is to keep the antennas pointing accurately towards the centre of selected targets on the earth while her solar cells always face the sun.

C.T.S. will be launched January 13, 1976 from Cape Kennedy in Florida and will be placed in a geostationary orbit 22,300 miles over the equator at roughly the latitude of Calgary. The expected lifetime is two years.

Eighteen lightweight easily transportable earth stations are being built to be used in the experiments. Ten terminals will have 3 feet diameter dish antennas while eight will have 8 feet diameter antennas. Nineteen groups from coast-to-coast ranging from provincial government to a native people's association are engaged in the experiments. The group include broadcasters, educators, technologists and

Posthumous recognition for Kanata space scientist

Canada's eighth satellite, the world's most powerful, went into its permanent orbit 22,300 miles above the equator almost three days after a US Delta rocket hurled it into space.

Lauched at precisely 6:27:54 pm, January 17, 1976, the Communications Technology Satellite (CTS) draws its more than 1,000 watts of power from the sun's rays by means of solar cells covering the spacecraft's wings.

The new spacecraft, operating at higher frequencies than conventional satellites, is seen as a forerunner to the direct broadcasting satellite, which may eventually beam television programs directly to home receivers. CTS was bult by the Department of Communications at its research centre near Ottawa.

Placed in the Satellite was a small plaque engraved with the names of two members of the CTS team who died before seeing the result of their work, L D Braun and W P Nolting.

Recently a presentation of a replica of this plaque was made to Mrs Maurine Braun of Kanata, to commemorate Dr Lorne David Braun's contribution to the program.

Dr Braun graduated with a Ph.D. from the University of Toronto in 1968. He was a member of the faculty of that University until joining the CTS program in 1971. He moved with his wife and son to Kanata at that time. One of his great pleasures was walking or cycling in and around Kanata. Dr Braun is survived by his wife

Maurine, sons Steven and Dale and a daughter, Sandra.

doctors.

The Government of Ontario is planning experiments involving multi-ministry administrative, operational functions; Queens University is experimenting with a satellite communications link to locate trains and Queen Charlotte Islands Hospital with health care

Satellite launching said 'near perfect'

WASHINGTON (CP) — At about 6 p.m. EST tonight, more than 22,000 miles out in space, a small rocket motor will fire a short burst and Canada's \$60-million communications satellite will "park" for the next two years.

The six-foot cube will grow wings—two long solar arrays to capture power from the sun — and take up station over the equator just off the west coast of South America.

"It's a near-perfect mission," a spokesman for the U.S. National Aeronautics and Space Administration (NASA) said Sunday. "All systems are functioning normally."

The Communications Technology Satellite (CTS), with a broadcast power between 10 and 20 times greater than any other communications satellite ever sent aloft, lifted off from Cape Canaveral, Fla., at 6:28 p.m. Saturday—five days and seven minutes behind schedule.

Scientists, reporters and diplomats gathered in the topsecret operations room of Goddard Space Flight Centre to watch the launch on live, closed-circuit television.

They heard the voice of Mission Control from Cape Canaveral crackle: "We have liftoff," and they watched and listened to a running commen-, tary as the big Delta booster rocket went through its various firing stages.

Then, 25 minutes after liftoff, the voice came through again— "We have separation; the spacecraft has separated."

At this point, the CTS was on its own, sweeping in an eliptical orbit that took it from 116 miles high to an apogee of 22,600 miles. Its parking orbit will be 22,300 miles up.

The voice of the Goddard commentator came on: "Canada and the United States new are the proud parents of the world's most powerful technology satellite."

The CTS heralds a two-year project in space communications experiments to be undertaken jointly by Canadian and Goddard scientists beginning next spring. The project includes 26 Ca-

The project includes 26 Canadian experiments of transmitting medical information, two-way picture and voice exchanges among French-speaking communities in northern Saskatchewan and Quebec, educational courses for some federal and Ontario civil servants and television as well as radio programs by the Canadian Broadcasting Corp.

delivery to remote areas. Federal D.O.C. experiments include the possibility of TV reception with a 30 inch dish antenna.

The experiments have a variety of needs, some requiring only voice links, others more complex combinations of voice, TV and data.

The satellite will probe the social, cultural and economic impact of its own new technology and attempt to show planners of future systems new ways of using modern communications tools.

Amateurs attending the R.S.O. Convention in Ottawa had the opportunity first hand to discuss the program with D.O.C. officials and to view a model of the spacecraft. While experiments require D.O.C. approval and expensive equipment capable of receiving the 12 GHZ signal, possibly amateurs will participate in Canada's space program in the future.

The author acknowledges with thanks the support and assistance supplied by J. Mike Bryan, VE3CGT, Information Officer of D.O.C. in providing information and the photograph.

Correspondence

Ted VE3TRQ sent the following information on:

Good post on station grounding from the Elecraft group

Re: Surge protection for AC circuit serving my station KPA1500

From: Drew Vonada-Smith K3PA Date: Tue, 16 Oct 2018 11:35:20 PDT Larry,

What you are doing is a great idea, but only half the story. The other half is the way the station ground returns are handled. No amount of parallel surge protection is effective if different station grounds are rising to different potentials during the transient event.

1) All 120V station equipment should be common to the same outlet/branch.

2) All station equipment should be connected to one and only one ground, and that should be the one common to your AC mains service. If you have additional grounds such as more rods, they should only route to that same mains ground central point.

3) The 240V amplifier ground and the 120V outlet should be the same ground, to the degree possible given they are different outlets.

4) If, besides the power outlet, you bond equipment chassis together - only return that to the same power mains ground.

5) All coax cables should be grounded where they enter the building, and that should also be that same power mains ground.

The bottom line is, if you have different grounds to different parts of the station, no amount of neutral to hot or hot to hot protection cured that face that you have large potentials between equipment because of ground paths. If anything, these procedures make MORE difference than transient protectors.

73, Drew K3PA

Last month featured an article on

"The Ham Tech Experience," where

Dr. Gordon Hayward discussed his research into early detection of ovarian cancer using RF waves. The heart of this circuitry was a tiny Surface Acoustic Wave (SAW) circuit board. Dr. Hayward was kind enough to send a photo of the SAW oscillator.



Mike VE3MKX sent this Youtube website loaded with videos on QRP topics. Great stuff.

nice video's https://www.youtube.com/channel/UCdqWV0nPVEeso6uth7uRk6Q

Also see Mike's article on next page.

Beaches / Parks on the air by Mike VE3MKX



Hams from the Barrie ARC WAX (Wireless Experimenters Group) attended Wasaga Beach Provincial Park on Thursday October 18th and got radio active !

Three stations were put on the air with various antenna and HF rig set ups. It was a lovely OC outside with heavy winds off of Georgian Bay ! Unlike last year where we had shorts and Tshirts on

!!....dont try and visualize.... just move on ! :)

In the one pictures you can actually see in the background snow on the Blue Mountain ski hills !!

Many QSO's were made...that included the Caribbean, US and Europe !

Operators present: Tom VE3THR, Ryan VE3RJT, Brian VE3XNS, AI VE3RRD, Andrew VE3NED, Joe VE3GSL and Mike VE3MKX

A fun time was had by all attendee's !

73 Mike







CONTRIBUTIONS TO VE3ERC-CLUB NEWSLETTER

Do you have an article you'd like to submit? Or photos? Do you have any comments you'd like to make?

Perhaps you'd like to share a photo of your shack, a special project you are working on or a special

> interest! SEND THEM TO: Bob bobve3ixx@gmail.com (519-787-2279)



"I don't care if Division doesn't Send QSL card's Soldier ... GET ON THAT RADIO!!!"

WEDNESDAY NITE NET CONTROLLERS

SEPTEMBER 5 - BRIAN VA3DXK SEPTEMBER 12 - BOB VE3IXX SEPTEMBER 19 - TED VE3TRQ SEPTEMBER 26 - M E E T I N G OCTOBER 3 - AL VA3TET OCTOBER 10 - REG VE3RVH OCTOBER 17 - TOM VE3DXQ OCTOBER 24 - DINNER AND MEETING OCTOBER 31 - PAUL VE3PVB NOVEMBER 7 - BRIAN VA3DXK NOVEMBER 14 - BOB VE3IXX NOVEMBER 14 - BOB VE3IXX

Thanks again to Mike VE3MKX for sending this link from QRZ forums

http://forums.qrz.com/index.php?threads/w6cba-continues-to-bust-stereotypes-from-herliving-room.629273/

One of FBI's first female dispatchers continues to bust stereotypes from her Fullerton living room

Walk into Vi Barrett's living room and you walk into an era when FBI guys were called "G-men," women were "dolls" and a "dame with good gams" might be favored over other "skirts." At least that's the stereotype.

Fortunately, Barrett was around in the 1940s to set people straight and continues to explode stereotypes today. But these days, it's more about blowing up perceptions over age – she's 89 – than busting gender barriers. On a desk in a corner of her living room in Fullerton, there is a contraption the size of a fist made of chrome and two tiny Lucite paddles. Barrett reaches out and with her thumb and forefinger and bats the little paddles back and forth.

Instantly, the unmistakable dit-dit-dit-dah-dah-dah of Morse code fills the room. Next to the ultra-modern chrome gizmo, Barrett picks up a little brass, steel and wood machine called a "straight key" that her father gave her more than 70 years ago. Barrett, you see, is a long-time expert in Morse code, can still tap 15 words a minute. And when you discover her background, it all makes sense. As a teenager in Los Angeles, Barrett fell in love with ham radio and became one of the few women to enter what was then considered a man's world of electronics.

After much conversation, I discover Barrett also was a G-man of sorts.

Electric avenue

When her uncle first showed off his ham radio, Barrett was a 14-year-old Girl Scout and music major growing up in South Central. Back then, she didn't give a whit about the dials, knobs and meters that attracted some guys to ham radio. What Barrett saw was a way to communicate with the world.

"I thought it was so exciting to be able to talk to someone in a different city or a different state," Barrett recalls, her eyes dancing at the memory. "Right away, I started saving my babysitting money. I wanted to buy a receiver so bad."

Barrett heard about amateur radio's annual event where hams gather, set up antennas and invite the public. In 1946, Dad agreed to take her to Baldwin Hills where ham operators carried their rigs. "Are you a ham?" one gentleman asked. "No," Barrett confessed. "Would you like to be?" "Oh, would I!"

At that moment, Barrett found her first mentor. Then she found another. And another. The teenager studied theory, how to operate a receiver, how to use a transmitter. She mastered Morse code. In 1947, she sat next to the ham radio operator who patched Thor Heyerdahl's location aboard the Kon-Tiki to Washington, D.C. The following year, at age 17, she made her way to the Federal Building in downtown Los Angeles and took her ham test. She was the only female in the room. A few hours later, she also was the only female to walk out with a ham radio license, call letters "W6CBA." A few days later, Dad climbed onto the roof and set up an antenna. Barrett's first call went to Colorado Springs. As far as Barrett was concerned, it felt like reaching Antarctica.

Inside the FBI

Wrapping up her senior year in high school, Barrett took a ham radio class. Soon, the instructor asked Barrett to teach Morse code she was so good. After high school, Barrett heard the FBI was hiring and convinced her mother to take her back to the Federal Building. She was hired for the clerical pool and sat before a big Underwood typewriter. But that was only the beginning of what became a meteoric rise with the FBI.

Word got out that the young typist was a speedster with Morse code, that she had a ham radio license and was fast and efficient with radio voice communication. Soon, she was called to the office of the big boss, the agent in charge. Unsure what the meeting was about, Barrett stood her full 5-foot-1 height and waited for the chief to talk.

"Would you," he asked, "like to try the radio?"

Barrett knew the offer meant she would become one of the first female FBI dispatchers in history. She remembers, "Those were wonderful words for me. A bank robbery is a lot different than chatting with somebody. It was a wonderful, exciting job."

Her favorite case was the Max Factor extortion scam in which the suspect demanded money in exchange for not blowing up a store. The blackmail money was left in an orchard by an agent who resembled the tycoon. When the suspect grabbed the dough, agents jumped down from trees and nabbed the man. Barrett recalls the perp walk in the hallway and laughs, "He was a pipsqueak."

Global connections

After getting married in 1954, Barrett left the FBI, but not her beloved ham radio. Like his father-in-law before him, soon her husband was on the roof erecting an antenna.

"Don knew that if he married me, I was going to have my ham radio station," Barrett chuckles. "He knew he was getting a double package: wife and radio operator."

While her husband ran his and his dad's service station in Los Nietos, Barrett worked as switchboard receptionist for the East Whittier School District and raised the couple's two sons and daughter (today, there are four grandchildren, all boys). For two decades, the couple also volunteered with the Whittier Police Department while Barrett continued to volunteer as a ham. In Whittier, she allows, "I did everything but carry a gun."

During the 1984 Olympics, she used her ham radio to help agencies connect. During the 1987 Whittier Narrows earthquake, she ensured hospitals coordinated.

"They call us a backup communication system," she allows, "but we often end up being the primary with our radios."

She's helped thousands of patients aboard hospital ships connect with relatives. She's

helped soldiers talk to their parents. She's also shared grief. Barrett recounts the time one young man aboard a hospital ship in the South China Sea talked to his parents. "They were so thrilled to hear from their boy in Vietnam."

Later, Barrett called back the parents and asked if they'd like another patch to their son.

The father quietly answered, "Our son was killed in action."

Still, for Barrett service never stops.

In her living room, she has her transmit-



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ter, receiver, microphone and that chrome Morse code key ready. But it's what's hidden above that impresses.

It's no coincidence that Barrett is on the top floor of her building, just as it's no coincidence that there's a 62foot wire antenna strung in the attic.

Today, perhaps Barrett will connect to places she's already electronically visited, countries such as Greenland, Tanzania, Laos. Or maybe she'll check out Antarctica.

Mind you, talking to Antarctica is no longer just a dream. With 194 countries documented, Barrett already has chatted with hams on the world's coldest continent.



Accordingly, I'll leave you with this: Dit-dit-dit-dah-dit-dah.

Morse code for "end of contact."

VE3ERC Elmira Radio Club Inc.

Minutes from Oct 24, 2018

1. Call to Order & Welcome

The meeting was opened at 7:30 pm by our Club vice president Ted VE3TRQ as our president Brian VE3DXK was absent due to a death of a sister-in-law. Ted asked for a moment of silence to remember ERC club members who are now silent keys.

2. Roll Call: VE3DXQ Tom, VA3GWM Gord, VE3DCC Rich, VE3DWI Tony, VE3IXX Bob, VA3QB Bill, VE3AUS AI, VE3ML Wes, VE3CXU Doug, VE3KCY Ken, VE3IXX Bob, VE3CD Harold, VA3DZZ AI, VA3FJM Frank, VE3JMU JIM, VE3TRQ Ted, Mary VE3MXT. Ted handed out some agendas and financial report.

3. Adopt Agenda : Ted asked to have the Agenda approved. Motioned by Tom VE3DXQ to approve , seconded by Bob VE3IXX. All were in favour. Carried.

4. Secretary's Report: Tom VE3DXQ was not present at the September meeting. The minutes were done by Bob VE3IXX. Ted VE3TRQ asked for a motion to have the minutes accepted. Tony VEWDWI made a motion to accept the minutes. This was seconded by Wes VE3ML. All in favour. Carried.

5. Treasurer's Report: Paul VA3PDC was not present but did give Ted VE3TRQ a report to hand out.

6. President's Report: No report as Brian VE3DXK was not present.

7. Committee Reports: Tom VE3DXQ club safety office said he still has 10 vests, 8 safety glasses, and 6 small road cones. Tom said that the position of QSL manager has defaulted back to him as Judd VE3WXU has moved. Tom said he is looking for a card for the Point Clark lighthouse event, as he got a QSL card from the states to reply to. Ted VE3TRQ said I will need to contact Judd VE3WXU or Bruce VE3QB.

8. Unfinished Business: Elmira Radio Club electronic footprint clean-up clarification- Ted VE3TRQ reported that we need to set up an email distribution list on the club website. Ted said

he would like to set up a data base on the website as the current list is static. VA3QB Bill mentioned we could set up a distribution list on the Yahoo Group for ERC. Bob VE3IXX said someone who is not a member of our club, but gets the newsletter, wants to know if it is ok to advertise a Ham-Fest to our members. Every one present seemed ok with that.

Silent Key Memorial Dinner- Ted asked if every one was ok with the silent key memorial dinner the way it is. Do the members still like the Crossroads or is there some other location that would appeal to club members. Rich VE3DCC mentioned the history of how the event started after Bill Graham VE3ETK passed away. As in October we went over to his place. Also Rich VE3DCC mention how he researched for availability and convenience and Crossroad fit the bill. Ted VE3TRQ asked for a show of hands who still preferred this location. All were in favour.

Bob VE3IXX mentioned that Brian VE3DXK asked for a list of Silent Keys from our club. Bob said he gave Brian all the ones he could remember, but would like to see if we could get a list of them all. Ted VE3TRQ said the best way would be to mine everyone's brain and possibly use the Yahoo Group. Ted said if your not on the Yahoo Group contact Bill VA3QB and he will get you on there.

9. New Business: Feed Mill Repeater Cabinets & Committee- Bill VA3QB and Bruce VE3QB picked up some repeater cabinets from New Market and dropped them off at Bob's VE3IXX. They will be made weather proof and have fans for cooling as well. They will be put at ground level for easy access to repeaters. Tony VE3WDI says he has some 7/8 hardline we can use. Tony asked Jim VE3JMU how high the antenna is. Jim said about 150ft. Tony said he has enough cable for the job. Bill VA3QB said the things we need before the spring are picking a spot were the cabinets will go, shelter from the westerly winds, how do we get access and who to contact. Bill VA3QB also said a furnace filter could be installed to keep the dust out. Bill VA3QB also mentioned the possibility of a repeater near Fergus (Alma). VE3TRQ also mentioned we should get Internet at the feed mill repeater, possibly by WIFI.

Christmas Party Tuesday Dec 11th 2018 6:00 pm to 9:30 pm Elmira Legion 11 First St.

The Christmas party lunch for the Luther Village coffee group.12 noon. is Dec 5, 2018

Scouts: JOTA has already come and gone and Ted said he is not sure if there was anything else going on with the Scouts. Ted said this should be followed up on.

10. Presentation: Ted gave a presentation on his flex radio and how it can work with a cell phone. However he forgot to put the switch on that connects the radio to the antenna. So the presentation was limited but he did show a smart SDR interface that connects to the radio. The connection is done through a third party and the phone that will find the radio. He did connect as he had the phone tethered to the laptop and you could see the waterfall but no signals as antenna was not connected. He can access CAT control and audio control through the GUI on the cellphone.

11: Announcements: Next meeting: Wednesday Nov 28, 2018.

12: Adjournment: Tom VE3DXQ made a motion to Adjourn the meeting.

Meeting ended at 8:30 pm.

PLEASE NOTE: THERE WAS NO PREZ SEZ THIS MONTH DUE TO A DEATH IN THE EXTENDED FAMILY OF BRIAN VA3DXK. PREZ SEZ WILL RESUME NEXT MONTH.