



OCTOBER 2016

Volume 5 Issue 10

VE3ERC-LUB

- President: Joyce VA3WXU**
- Vice-President: John VE3JXX**
- Secretary: Tom VE3DXQ**
- Treasurer: Reg VE3RVH**
- Trustee: Al VA3TET**
- QSL Manager: Judd VE3WXU**
- Repeater Manager & Maintenance: Carl VE3FEF**
- Website Admin: Ted VE3TRQ**
- Lighthouse: Bruce VE3QB**
- Maple Syrup Display: Judd VE3WXU
Joyce VA3WXU**
- Newsletter: Bob VE3IXX**

ERC REPEATERS

- UHF 444.700 TONE: 131.8**
- VHF 147.390 + TONE: 123.0**
- EMERGENCY SIMPLEX: 147.51**

Emergency Reminder:
In the event of an
emergency, tune into
our repeaters,
UHF 444.700 or
VHF 147.390 or
HF 3.755 LSB or
Simplex 147.510
For coordination and
assignments.



While visiting the Horseshoe Valley Resort which covered multiple acres of land for both winter skiing and summer activities and included many condos, a large Inn, and a recreation centre, I came across this communications antenna. I'm guessing the bottom is for a mesh network to supply wii fii to all the buildings from the main office centre and the top, a vhf repeater network. PHOTO BY VE3IXX



THE PREZ SEZ!

This club is Radio-ACTIVE

THE CLUB IS RADIO-ACTIVE

President's Update for October 2016

“Lima Oscar Lima”

A New View

Ever since I became a Ham Radio Operator and had a reason to memorize the NATO phonetic alphabet, I have wondered why the words making up this alphabet had been chosen.

None of the words used in the alphabet seemed special and none of them really stood out. They are just common, everyday words, except for alpha, delta, and zulu. These words are not used by many people very often.

In 2014 the “Global Language Monitor” estimated that there are over a million words in the English language. With so many possibilities of words to choose from, it just seemed odd that the words that were chosen for the alphabet were so bland and lacking in “pizzazz” and “charisma”.

After doing some researching, I was surprised to find out that there was a reason for leaving out the grandeur, more sumptuous English words. The choice of the words were actually scrutinized and carefully chosen. This is one of the reasons that the evolution of the phonetic alphabet was so long in the making.

During the First World War when the Royal Navy created an alphabet that began with Apples, Butter, and Charlie at the same time as the British infantrymen was using a version that started with Ack, Beer, and Charlie. When the US air force joined the war, all Allied Forces adopted the Able, Baker, alphabet which also came to be used by the civil aviation.



■ DECIMAL (3.1415) ■ STOP

Verbal Orders

It is most important that all verbal orders should be brief and concise, and to avoid the possibility of any misunderstanding the method of giving verbal orders has been standardised throughout the Service.

This standardization includes a special phonetic alphabet which is given below and which must be mastered.

THE PHONETIC ALPHABET

Letters

A ABLE	J JIG	S SUGAR
B BAKER	K KING	T TARE
C CHARLIE	L LOVE	U UNCLE
D DOG	M MIKE	V VICTOR
E EASY	N NAN	W WILLIAM
F FOX	O OBOE	X X-RAY
G GEORGE	P PETER	Y YOKE
H HOW	Q QUEEN	Z ZEBRA
I ITEM	R ROGER	

Numbers

0 ZERO	5 FI-YIV
1 WUN	6 SIX
2 TOO	7 SE-VEN
3 THUH-REE	8 ATE
4 FO-WER	9 NI-NER

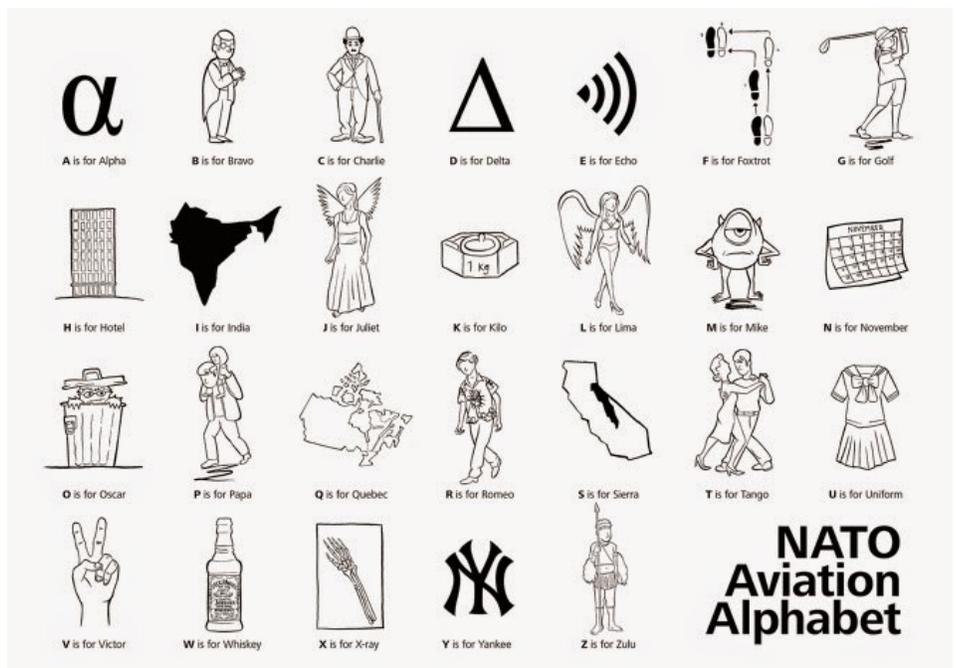
Due to continued confusion of words, the ICAO, an agency of the United Nations, created a different alphabet made up of English words that had sounds common to all languages and that could be spoken and pronounced internationally, no matter what nationality. There just can't be that many words that possibly meet that criteria.

Jean-Paul Vinay completed the new alphabet in 1951. Over the years, the final changes were made to the letters C, M, N, U, and X. The current alphabet we use was introduced on March 1, 1956, making it sixty years old. It was adopted worldwide and the changes have remained in place ever since.

As it turns out, I was wrong. The "everyday words" turned out to be quite special and are decidedly uncommon.

The use of the phonetic alphabet continues to evolve through a recent new trend. The group of people who text using several abbreviated phrases, good or bad, are now using the phonetic alphabet to spell out those phrases using words that render the same meaning at the same time. For example,

Lima Oscar Lima.



73 Cheers
Joycee - VA3WXU

Back-of-the-Napkin Eyeball

QSO notes and stuff

by Rich, ve3DCC

W

OW! Rather, I mean OUCH!

I managed to misplace an entire star system in my last article.

In fact, Proxima Centauri is about 4.2 light years from Earth. That is about 40 000 000 000 000 kilometers or 25 000 000 000 000 miles or about 265,606 A U.

Since 1 light year is the distance light travels in one year, this is still a considerable trip.

Remember that light really doesn't "travel" as much as particles vibrate and transmit energy to their neighbours so that the frequency effect is transmitted along.

This really is food for serious thought! How is it possible that we can gather the energy coming over such distances in sufficient quantities to allow us to sense and decode the fluctuations that create a signal. How big is big?

On September 25, 2016, the BBC reported that China had started to test a COLOSSAL radio telescope.

It measures 500 m(1640 feet) across. It has received its first signals from space but it needs to be fine-tuned for 3 years to maximize its reach.

It is called the Five Hundred Metre Aperture Spherical Telescope (FAST) and it is located in a vast natural crater in Guizhou Province in southwest China. The construction required thousands of triangular reflecting panels- it is bigger than the Aricebo Observatory in Puerto Rico.

In order to gather all of the energy being generated "out there" in space, consider how those propagation waves travel. If they are allowed to travel unimpeded, the particles will travel in parallel lines, arriving simultaneously at any vertical antenna. Let us call that vertical antenna the Directrix. See diagram A below.

Now if we can arrange to "bounce" the signal to a central focus such that all bounces arrive simultaneously at a fixed point, just as they might have arrived at the Directrix, we can amplify and focus that signal. It is vital that there be no destructive interference or cancellation in the signal by getting the waves out of step.

In diagram B, I have used a compass, ruler and grid paper to identify points equidistant from the fixed line/antenna/directrix and a fixed focus where I wish to gather my signals. In C

In diagram B, I have used a compass, ruler and grid paper to identify points equidistant from the fixed line/antenna/directrix and a fixed focus where I wish to gather my signals. In C band and KU band television satellites, polarization, vertical or horizontal, controlled by a small flipping antenna at the receiving dish via a polarotor, allows satellites to "park" in space so channel 1 on one satellite on vertical polarization will not interfere with the neighbouring satellite's channel 1 on horizontal polarization.

I will ignore this distinction for now. Consider a single signal in a fixed orientation.

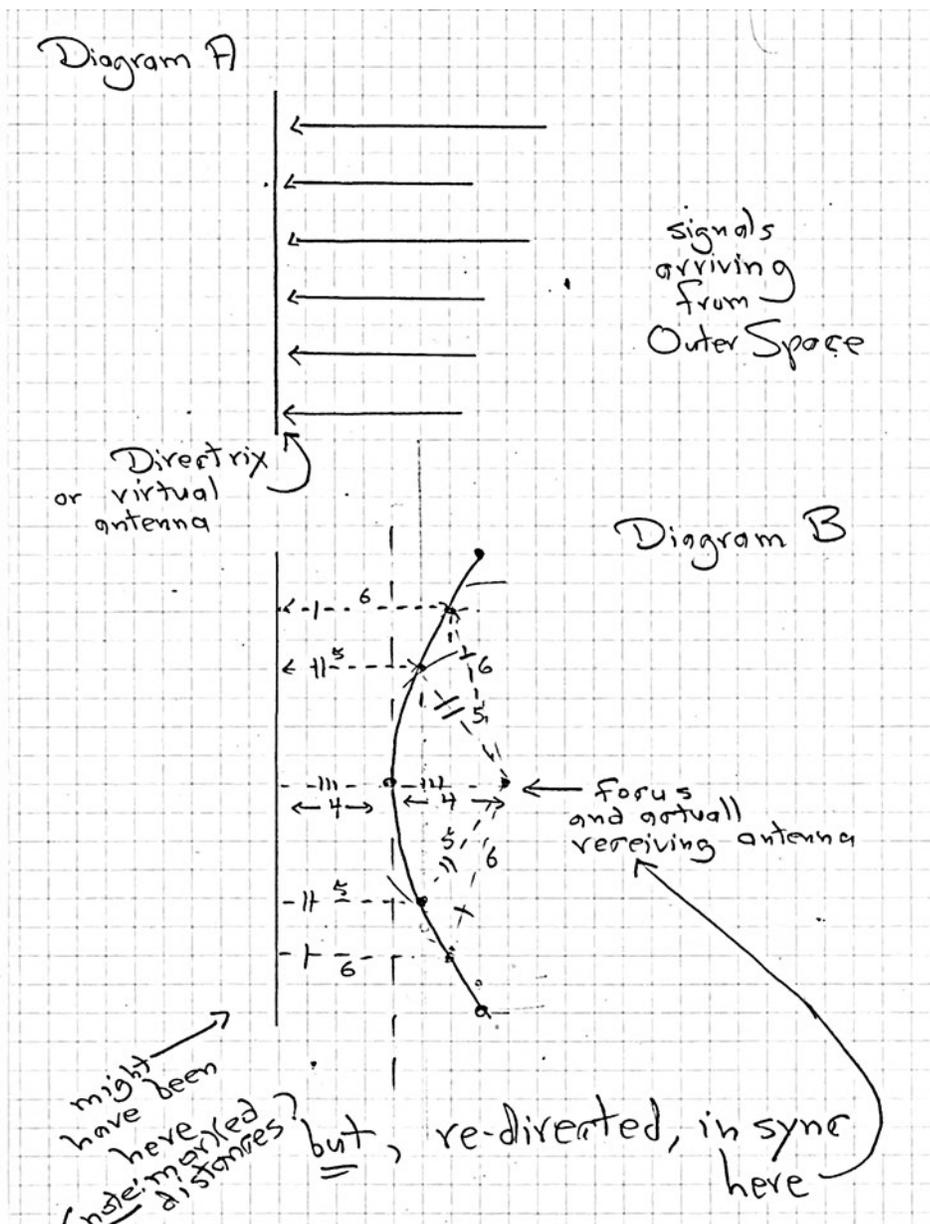
In the diagram, all signals arrive at the focus in sync, more or less. If the mesh in the antenna, is less than a quarter wave length, the incoming signal will 'bounce' off the dish mesh and arrive at the focus, more or less, intact. For those who may have studied Mathematics in Ontario, you will recognize this as a Focus-Directrix definition of a parabola; that is the focus distance: directrix distance = 1 : 1.

Now imagine this in 3 dimensions. The parabolic dish is a giant lens that focusses the signals at the focus antenna. The bigger the dish, the more signal collected and the easier it is to gather signals from way "out there". Clearly, both signal processing and amplification become critical in processing the signal.

Software Defined Radio receivers hold great potential for generating cleaner signals.

Our new MESH antenna systems also employ the same Mathematics to gather signal.

As an aside, a grade 11 student of mine who was also an avid hunter, built a small parabolic dish listening device with a microphone at the focus as a class project. It worked; however, his parents were not happy when the student ignored my VERY specific instructions to have his father help him grind down the plaster negative image we built to melt the plastic layer on. His dad tells me that there is still dust that floats about in their family room. Oh well!!!! We did learn, though, that at audio frequencies and volumes, the handheld dish works.



Big IS important. My original satellite system which I built back in the early 1980s consisted of a 10 foot spun aluminum dish which I obtained from a scrap yard for \$25 and a receiver which I purchased from a fellow who won it at Dayton. I had to use a soft hammer to smooth out some of the dish that did not quite support that 1:1 ratio. Warps really do create a problem. When I later installed a 15 foot mesh dish, the signal quality improved dramatically. The capture diameter of the dish made a difference. The new TVRO (television receive only) mini dishes and banana dishes are truly impressive and punch above their size. In reverse, the parabolic antenna can also be like a flashlight beam, sending a focussed signal out. We hope to intercept such a signal from any intelligent life. Certainly, enough money is being spent on this SETI (Search for Extra Terrestrial Intelligence).

However, as we start to scan the heavens for signals and clues to how this universe came to be, is it possible that our ears may hear the point beyond which there is no signal; that is, can we find the edge of the universe itself. And if we hear nothing, does that mean that we are indeed alone?

de ve3DCC, rich

WEDNESDAY NITE NET CONTROLLERS

OCTOBER 5 - BOB VE3IXX

OCTOBER 12 - JUDD VE3WXU

OCTOBER 19 - TED VE3TRQ

OCTOBER 26 - M E E T I N G

NOVEMBER 2 - AL VA3TET

NOVEMBER 9 - REG VE3RVH

NOVEMBER 16 - PAUL VE3PVB

NOVEMBER 23 - M E E T I N G

NOVEMBER 30 - TRACY (VE3JVG)

DECEMBER 7 - BRIAN VA3DXX

History of Amateur Radio in Canada (Part 2)

BY BOB KOECHL VE3IXX

Finally in 1920 the first radio inspectors were appointed. New radio regulations were promulgated and for the first time included radio amateurs. Amateur stations now required certification by examination. The lowest wavelength permitted depended on the operator's distance to the nearest commercial station and this information had to be specified on the station aerial.

Canada was divided into five call sign areas. The call sign began with the area number followed by two letters (e.g. 2AB or 5CD). The call had to be sent a minimum of three times at the end of each transmission. There was no charge for the examination but there



Very early radio interference investigation .



was \$1.00 annual licence fee charge.

Requirements for the exam was a 5 wpm code exam. An oral exam was given requiring knowledge for adjustment and operation of a receiver and spark transmitter, knowledge of departmental regulations for amateur stations, some knowledge of International Radiotelegraph Convention of London from 1912 and the ability to distinguish from all other signals "SOS" and "STP".

EDH test room in the 1920's

The first exams were held in Sault Ste. Marie on July 29, 1920 with certificate numbers 1, 2 and 3 issued. By the end of 1921, 63 certificates had been issued and of these 57 were from the four western provinces. It wasn't that there were more amateurs out west, just that more of the western stations became legal. Walter Howard, the appointed radio inspector for the west was very busy trying to legalize all the stations operating in the west. He spent his major time conducting exams in Victoria, Vancouver, Prince Rupert, Calgary, Edmonton, Regina and Winnipeg.



Radio interference investigation vehicle in 1924 used in U.S.

Amended regulations in 1922 allowed a choice of an exam on spark or CW transmitter or both. May 15, 1922 the first CW exam was given in Chatham, Ontario and certificate number 67 was issued. More amateurs chose to be examined on spark and CW options but by the end of 1923 CW only was popular. The last pure spark exam was given on March 21, 1924 in Brandon, Manitoba and the last spark/CW exam in Calgary on September 29, 1925. Spark disappeared in the ranks of amateurs.

“Development of Radio Regulations for the Radio Amateur Service”

by Larry Reid VE7LR for The Canadian Amateur Magazine

www.courey.ca/radioalumni-archive/z_LarryReid_1904_1924.htm

Visit Us at
www.ve3erc.ca

VE3ERC Elmira Radio Club Inc.

Minutes from Oct. 26, 2016

1. Open and roll call.

VA3TET Al, VE3DXQ Tom, VE3WXU Jud, VA3WXU Joyce, VE3DCC Rich, VA3PDC Paul, VE3QB Bruce, VA3QB Bill, VA3DXK Brian, VA3FJM Frank, VA3JVG Jason, VE3TRQ Ted, VE3EIX Harry, VA3GWM Gord, VE3CXU Doug, VE3XYL Tracy, VE3TRQ Ted, VA3JVG Jason, VE3JMU Jim, VE3PVB Paul, VE3RVH Reg, VA3WFM Bill, VE3B7 Loraine, VE3JXX John, Ron & Rick (Care Program)

The meeting was open by our new President VA3WXU Joyce at 7:30 pm.

Roll Call: As above.



Joycee VA3WXU with visitors.



John VE3JXX with the visitors.

Brief overview of our emergency plan: John VE3JXX spoke about the care program that Ron & Rick are involved with. The care program is set up to let the public know what is going on in the event of an emergency. John explained about the automated phone system that will automatically call every home in the Woolwich Township, to let people know what is going on. This system is also known as a phone tree.

Ron and Rick are involved with the fire department. They attend meetings regarding emergency planning as well as simulated emergencies, such as rail car spills, chemical spills as well as weather related emergencies.

Rich VE3DCC advised that ERC is part of Woolwich emergency planning. Rich said one of our main functions would be to let the loved ones of people affected by the emergency know where they are and that they are safe. This would be done at evacuation centers. We have VHF, UHF. And HF frequencies available, as well as simplex frequency incase repeaters fail.

Rich mentioned the ADHOC simulated emergency event that was held on Oct 8, 2016.

Judd VE3WXU advised this RAC emergency simulated test called RACSET. This test is to show our readiness for our community in times of need. The club used our UHF frequency on the repeater at the feed mill. Judd put out the simulated emergency call at 8:00 am. After the call was put out there were 8 check ins. Joyce VA3WXU was accepting calls on PSK 3583, also accepting calls on our simplex frequency 147.510. The other stations on standby expanded our capability and included 220MHz FM, HF, VHF, HF, DSTAR, DMR, SSB, CW, and most digital modes. Frank VA3FJM was on standby at the fire hall, and Paul VA3PDC was dispatched to the community center just in case, and also provided cross band capability. Ted VE3TRQ was also



Judd VE3WXU giving his report.

situations and events. Also he spoke about software used and deployment of a network complete with power point on the fire hall flat screen TV. He also advised they can also be used on IP phone networks.

The network is self building and self healing software wise. The software he is using is AREDN. (Amateur Radio Emergency Data Network). He also showed how this can be used in conjunction with the Raspberry PI (mini computer.). He showed us an example of a chat program by sending a test message.

Ted also showed us an example of an IP Camera.

Reports and Announcements: Joyce VA3WXU asked if there were any errors or omissions from last month's minutes. Joyce VA3WXU made a motion to have minutes accepted, 2nd by Al VA3TET. Minutes were accepted.

Treasurer's report: Reg gave the club's balanced and asked if there were any bills to submit. No bills were mentioned. Treasurer's report was accepted.

Nominations committee: Paul VE3PBV said nothing to report.

Safety Officer Committee: Tom VE3DXQ advised nothing new to report. No incidences. Tom advised he still has cones and Al VA3TET has some vests. Frank VA3FJM gave Tom a roll of caution tape.

at the fire hall in case repeater work was needed, and also had a connection to Win-link. <http://www.winlink.org/>

Win-link works off of the internet and also mobile devices. Ted VE3DRQ also took over the net for Judd for a while.

As well, on October 18, members of the Guelph club, Elmira club, and Kitchener club had a training class in passing messages. Larry VE3LWG ran this training.

Presentation on Mesh networks: Ted VE3TRQ gave a presentation on Mesh networks. He had set up various types of access nodes in the fire hall. He showed and explained the different access points, 5Giga hertz, 2.4 Gigahertz. They have different ranges some 30Km and others 10km. He explained how they may be used in emergency



Ted VE3TRQ giving his Mesh presentation.

Elmira Maple Syrup Festival: All OK Judd VE3WXU.

QSL Manager: All OK Judd VE3WXU.

Lighthouse Report: Al VA3TET All OK.

Website Manager: Ted VE3TRQ advised he still needs to put up bulletins, and update repeater PL tone information.

Unfinished Business:

Formation of an Emergency Committee: Tracy VE3XYL asked those present if they are interested in forming an Emergency Committee. She said she would like a least six volunteers. Rich VE3DCC said we are part of the Woolwich emergency planning and they do have a list of all our volunteer`s phone numbers and capabilities. However Rich said that they are reluctant to call us as they look at us as a last resort. Rich also said that our long range goal is to have a place for a radio at the fire hall.

Terry VE3XTM said that ARES does have an emergency training program and it would be good to get this training so we can work well with the professionals.

Frank VA3FJM mentioned it would be good if we could use the KWARC repeater in Baden as a backup because it is a powerful repeater. Joyce VA3WXU talked about the importance of linking with Guelph and Kitchener. Rich VE3DCC made a motion to make Tracy VE3XYL the chairperson of the Emergency Committee. This was seconded by Paul VE3PVB. All were in favour.

Al VE3TAT made a motion to have the clubs ICOM 740 Pro repaired. It requires replacement of 2 driver transistors, of which he could not find the original part, but there is a replacement part. They will be about \$40.00 each. The motion was seconded by Judd VE3WXU. All were in favour. Al also said that Equipment from Bill Graham for sale are an ICOM 740 pro in excellent condition, a Flex 3000 radio, and a MFJ loop antenna with the rotor 20 to 40M.