



# GUYWIRE

February 2018

A monthly publication of the RARA Inc. except July and August.

If you wish to receive or be removed from the e-mailing please contact the editor/publisher at the RARA e-mail address @ ve5rara@gmail.com

NOTE: all e-mail and web addresses are active hyperlinks

## GENERAL MEETING February 14th @ 7:00 p.m.

Regent Place Library - Regina Market Mall - 331 Albert St.

# TBA

### 2017-18 RARA Executive

President - Neil Slater - VA5SCA  
Secretary - Terry White - VE5TLW  
Treasurer - Allan Tidball - VE5LAT  
Past President - Harvey Drinkle - VE5AD  
Director - Con Berger - VE5CON  
Director - Justin Chapman - VA5RED  
Director - Summer Hartzfeld - VE5SDH  
Director - Lyle Maystruck - VE5EE  
Director - Mark Humphreys VA5LNK

### 2018 Public Service Events

<u>EVENT</u>	<u>DATE</u>	<u>ORGANIZER</u>
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UPCOMING

RPS Half-marathon - April 29-TBA

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Five executive positions will require replacement in March.

Please consider what you can do to help RARA by participating at the executive level.

Remember, it's YOUR club!

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## Silent Key

Sadly we mark the passing of a well known area amateur. Terry Keim, VE5TK passed away Thursday February 8th. Terry had retired from his job at the Regina Radio Inspectors office and had previously worked for the Dept. of Transport as a radio operator in several northern stations.

He is survived by his wife Irene, VE5IVK.

## Puzzler For Last Month

On CW if you were to send "QRK" to another station, what would you be telling them?

**Answer:**

The intelligibility of your signal is .....(1-5) If followed by a question mark, it is a request for a report. A report of 5 means perfectly readable.

## This month's Puzzler

Another Q code question. If someone sent you "QTR?" what would they be asking?

**Answer next month**

## Interesting Websites

Here is an interesting site of interest to anyone wanting to build basic kits:

[www.qsl.net/k5bcq/Kits/Kits.html](http://www.qsl.net/k5bcq/Kits/Kits.html)

Practically anything you want to know about Canadian Amateur Radio regulations can be found in this government circular:

[www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf01008.html](http://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf01008.html)

## The History of "73"

Western Union had meanings for every number from 1 to 92 to use for common phrases, to aid in rapid transfer of messages, not unlike the use of "Q-Codes" Amateur Radio operators utilize today.

The traditional expression of 73 goes back to the beginning of the landline telegraph days. It is found in some of the earliest editions of the "numerical codes", each with a different definition, but each with the same idea in mind. It indicated the end, or signature, was to follow. However, there is no data to prove that any of these were actually used.

The first authentic use of 73 is in the publication "The National Telegraph Review and Operators Guide", first published in April 1857. At that time, 73 meant "My Love to You." Succeeding issues of that publication continued to use the definition of the term. Some of the other numerals used have the same definition now as they had back then, but within a short time, the use of 73 began to change.

In the National Telegraph Convention, the numeral was changed from a Valentine type meaning to a vague sign of fraternalism. Here, 73 was a greeting, like a friendly word between operators and it was used on all wires.

There is also "88" (which maps to "love and kisses") that sometimes takes the place of "73" for communications between affectionate parties.

## Western Union codes

- 1 Wait a minute.
- 2 Very Important.
- 3 What time is it?
- 4 Where shall I go ahead?
- 5 Have you business for me?
- 6 I am ready.
- 7 Are you ready?
- 8 Close your key, stop breaking.
- 9 Priority business. Wire Chief's call.
- 10 Keep this circuit closed.
- 12 Do you understand?
- 13 I understand.
- 14 What is the weather?
- 15 For you and others to copy.
- 17 Lightning here.
- 18 What's the trouble?
- 19 Form 19 (absolute) train order.
- 21 Stop for meal.
- 22 Wire test.
- 23 All stations copy.
- 24 Repeat this back.
- 25 Busy on another wire.
- 26 Put on ground wire.
- 27 Priority, very important.
- 28 Do you get my writing?.
- 29 Private, deliver in sealed envelope.
- 30 No more - the end.
- 31 Form 31(permissive) train order.
- 32 I understand that I am to ....
- 33 Answer is paid.
- 34 Message for all officers.
- 35 You may use my signal to answer this.
- 37 Inform all interested.
- 39 Important, with priority on through wire.
- 44 Answer promptly by wire.
- 55 Important.
- 73 Best Regards.
- 77 I have a message for you.
- 88 Love and kisses.
- 91 Superintendent's signal.
- 92 Deliver Promptly.
- 134 Who is at the key?

73 is heard at sporting events in the action of rhythmic clapping used to cheer on your team

Terry - VE5TLW

## Hedy Lamar Actress-Inventor

Although Lamarr had no formal training and was primarily self-taught, she worked in her spare time on various hobbies and inventions, which included an improved traffic stoplight and a tablet that would dissolve in water to create a carbonated drink. The beverage was unsuccessful; Lamarr herself said it tasted like Alka-Seltzer.

Copy of U.S. patent for  
"Secret Communication System"

### UNITED STATES PATENT OFFICE

2,282,387

#### SECRET COMMUNICATION SYSTEM

Hedy Kiesler Markey, Los Angeles, and George Antheil, Manhattan Beach, Calif.

Application June 10, 1941, Serial No. 397,412

6 Claims. (Cl. 250-2)

This invention relates broadly to secret communication systems involving the use of carrier waves of different frequencies, and is especially useful in the remote control of dirigible craft, such as torpedoes.

An object of the invention is to provide a method of secret communication which is relatively simple and reliable in operation, but at the same time is difficult to discover or decipher.

Briefly, our system as adapted for radio control of a remote craft, employs a pair of synchronous records, one at the transmitting station and one at the receiving station, which change the tuning of the transmitting and receiving apparatus from time to time, so that without knowledge of the records an enemy would be unable to determine at what frequency a controlling impulse would be sent. Furthermore, we contemplate employing records of the type used for many years in player pianos, and which consist of long rolls of paper having perforations variously positioned in a plurality of longitudinal rows along the records. In a conventional player piano record there may be 88 rows of perforations, and in our system such a record would permit the use of 88 different carrier frequencies, from one to another of which both the transmitting and receiving station would be changed at intervals. Furthermore, records of the type described can be made of substantial length and may be driven slow or fast. This makes it possible for a pair of records, one at the transmitting station and one at the receiving station, to run for a length of time ample for the remote control of a device such as a torpedo.

The two records may be synchronized by driv-

ing Fig. 2 is a schematic diagram of the apparatus at a receiving station;

Fig. 3 is a schematic diagram illustrating a starting circuit for starting the motors at the transmitting and receiving stations simultaneously;

Fig. 4 is a plan view of a section of a record strip that may be employed;

Fig. 5 is a detail cross section through a record-responsive switching mechanism employed in the invention;

Fig. 6 is a sectional view at right angles to the view of Fig. 5 and taken substantially in the plane VI-VI of Fig. 5, but showing the record strip in a different longitudinal position; and

Fig. 7 is a diagram in plan illustrating how the course of a torpedo may be changed in accordance with the invention.

Referring first to Fig. 7, there is disclosed a mother ship 10 which at the beginning of operations occupies the position 10a and at the end of the operations occupies the position 10b. This mother ship discharges a torpedo 11 that travels successively along different paths 12, 13, 14, 15 and 16 to strike an enemy ship 17, which initially occupies the position 17a but which has moved into the position 17b at the time it is struck by the torpedo 11. According to its original course, the enemy ship 17 would have reached the position 17c, but it changed its course following the firing of the torpedo, in an attempt to evade the torpedo.

In accordance with the present invention, the torpedo 11 can be steered from time to time as necessary to cause it to strike its target. In

Among the few who knew of Lamarr's inventiveness was aviation tycoon Howard Hughes. Lamarr discussed her relationship with Hughes during an interview, saying that while they dated, he actively supported her "tinkering" hobbies. He put his team of science engineers at her disposal, saying they would do or make anything she asked for. On one occasion, Hughes was trying to modify his

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aircraft designs to make planes fly faster. He asked her for ideas; “He relied on me,” she said. Lamarr began studying the aerodynamics of birds and the shapes of fish, afterward presenting him with sketched ideas to make wings on planes less square and more efficient. “I showed it to Howard Hughes and he said, ‘You’re a genius.’”

During World War 2, Lamarr learned that radio-controlled torpedoes, which could be important in the naval war, could easily be jammed, thereby causing the torpedo to go off course. With the knowledge she had gained about torpedoes from her first husband, she thought of creating a frequency-hopping signal that could not be tracked or jammed. She contacted her friend, composer and pianist George Antheil, to help her develop a device for doing that, and he succeeded by synchronizing a miniaturized player-piano mechanism with radio signals. They drafted designs for the frequency-hopping system, which they patented.

Antheil recalled:

We began talking about the war, which, in the late summer of 1940, was looking most extremely black. Hedy said that she did not feel very comfortable, sitting there in Hollywood and making lots of money when things were in such a state. She said that she knew a good deal about munitions and various secret weapons ... and that she was thinking seriously of quitting MGM and going to Washington, DC, to offer her services to the newly established Inventors’ Council.

Their invention was granted a patent on August 11, 1942 (filed using her married name Hedy Kiesler Markey). However, it was technologically difficult

to implement, and at that time the U.S. Navy was not receptive to considering inventions coming from outside the military.

In 1962 (at the time of the Cuban Missile Crisis), an updated version of their design at last appeared on Navy ships. Lamarr and Antheil’s work with spread spectrum technology led to the development of GPS, Bluetooth, and Wi-Fi.

In 1997, they received the Electronic Frontier Foundation Pioneer Award and the Bulbie Gnass Spirit of Achievement Bronze Award, given to individuals whose creative lifetime achievements in the arts, sciences, business, or invention fields have significantly contributed to society. In 2014, Lamarr and Antheil were inducted, posthumously, into the National Inventors Hall of Fame. Lamarr was featured on the Science Channel and the Discovery Channel.

[www.youtube.com/watch?v=fvZBNSxuSuo](http://www.youtube.com/watch?v=fvZBNSxuSuo)

[www.youtube.com/watch?v=kx2EvQHzdCY](http://www.youtube.com/watch?v=kx2EvQHzdCY)

## 3D Printed Radio

Did you know you can build your very own working 3D-printed radio — without any soldering, electronics experience, electric cord, or even batteries? That’s exactly what talented Houston, Texas-based 3D-printing and electronics enthusiast Sage Hansen has created. And he’s willing to show you how to do it, too.

Called a crystal radio receiver, or sometimes a “cat’s whisker receiver,” this is an incredibly simple type of radio receiver that was popular in the earliest days of radio. The only power it requires to work is the received radio signal, which is used to

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produce sound. It is named after its most important component, the crystal detector or diode.

“AM radio was one of the first ways of transmitting audio to a very broad audience in the early 1900s, but it is still very popular today,” Hansen told Digital Trends. “It starts with the radio station converting their audio sound waves into electromagnetic waves, which can travel great distances. Each radio station uses a specific frequency that is constant, but the sound waves are mixed so they amplify and modulate the base radio wave. What makes the crystal radio so exciting is how simple the circuit is, and how it can be made out of normal household items.

What I wanted to do was use my 3D modeling software to design a simple form that presents the components in such a straightforward way that it’s easy for the viewer to follow the circuit and understand how this is working.

The radio waves received by the antenna pass through the coil of wire, which is acting as an inductor that determines the frequency. Then the diode will convert the receiving alternating current into direct current, which will vibrate the piezo speaker creating sound waves.”

Like a true gent, Hansen isn’t keeping the design to himself. “I always had the idea that this project was for the public,” he said. “I have uploaded the 3D files for people to download, as well as step-by-step instructions. I also recorded and edited an instructional video on YouTube with 3D animations to help people assemble, step by step. I hope that people will find this entertaining, educational — and have fun using this radio.”



The Radio Amateurs of Canada is pleased to hold its Annual General Meeting (AGM) in Red Deer, Alberta as part of the year-long celebration of

**RAC’s 25th Anniversary Celebration.**

The AGM event will be hosted by the **Central Alberta Amateur Radio Club** and will be held in conjunction with the 2018 Annual Red Deer Picnic and Hamfest which is being held at the same location. All RAC members are



encouraged to attend

**The Annual General Meeting.**

Date: Saturday, June 16.

Time: 1 pm (Mountain Daylight Time)

Place: The Annual General Meeting will be held at the Shady Nook Community Hall, Township Road 380, in Red Deer, Alberta.

**Agenda items will include:**

- Report of the President
- Review of the 2017 finances
- Appointment of auditors for 2018

A Question and Answer period will follow the AGM proceedings.

This is your opportunity to hear what your representatives have been doing over the past year, to raise questions, and to make suggestions about how RAC is managed and where it is going in the future.

All RAC members are encouraged to attend the Annual General Meeting. If you cannot attend the meeting in person there will also be a Webinar which RAC members can attend remotely. Additional information about the Webinar will be included here when it is available.

**For more information about the 2018 Annual Red Deer Picnic and Hamfest please see the information below and visit their website at <http://www.caarc.ca/>**



The Central Alberta Amateur Radio Club (CAARC) is pleased to host the RAC Annual General Meeting as part of its 48th Annual Picnic and Hamfest.

**Date:** Friday, June 15 to Sunday, June 17.

**Place:** The Hamfest will be held at the Shady Nook Community Hall, Township Road 380, in Red Deer.

**Time:** The Hamfest will be open to the public from 2 p.m. (Mountain Daylight Time) on Friday until noon on Sunday. Registration starts at 12 noon on Friday, June 15 and at 8 a.m. on Saturday, June 16th



The Annual General Meeting of Radio Amateurs of Canada will be held at 1 p.m. on Saturday, June 16.

**Description:** The 48th Annual Red Deer Amateur Radio Picnic and Hamfest will feature ARES Annual meeting, displays, vendors, tailgate fleamarket, pig roast Saturday night, pancake breakfast Sunday morning, draws and door prizes.

**Talkin:** 147.150, 146.520

For more information please visit

<http://www.caarc.ca>

or

contact Garry, VE6CIA, at [ve6cia@rac.ca](mailto:ve6cia@rac.ca).

Stay tuned to RAC website and the pages of The Canadian Amateur magazine for more information on RAC's 25th Anniversary Celebrations and the upcoming Annual General Meeting.

Alan Griffin - RAC MarCom Director



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# 96th Anniversary of 1st Transatlantic Shortwave Transmission

Monday, December 11th, will mark the 96th anniversary of the first message to ever be sent across the Atlantic Ocean using shortwave frequencies.

The original event in 1921 was called "The Transatlantic Tests" and was organized to determine if amateur radio signals could be heard in Europe using short wave frequencies. Several stations will be participating by establishing contacts between the U.S. and Europe including.

N1BCG (Greenwich, CT - where the first successful message was sent by 1BCG)

GM7VSB (Ardossan, Scotland - where the receiving station was located)

KB3WFV (Chesapeake Bay, MD)  
W2PA (Millbrook, NY)  
N1ALF (Greenwich, CT)

Bands and frequencies have not been set to permit flexibility due to propagation, but will likely begin during the day (Eastern U.S.) on 20 meters USB.

Additional information can be found at:  
[www.qrz.com/db/N1BCG](http://www.qrz.com/db/N1BCG)

[www.internetwork.com/radio/n1bcg](http://www.internetwork.com/radio/n1bcg)

[www.w2pa.net/HRH/crossingsi-aquitania](http://www.w2pa.net/HRH/crossingsi-aquitania)

courtesy VE5EE and  
Southgate Amateur Radio News

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# A New School Club Is Born

By :Daniel Dion (VE5DLD)

A few months ago, many stars lined up, thus allowing me to proceed with a dream of mine for many years, establishing an amateur radio station at École Monseigneur de Laval.

Excellent cooperation from school division administration in addition to the allocation of a small budget were the first steps that allowed me to get the ball rolling.

Thanks to a mild beginning of December, a few club members, VA5RED, VA5SCA, VE5ZG, VE5LNX and VE5LAT were able to assist me in running two coax runs from my classroom to the roof of the school. I would like to thank the club for supplying the coax and I would also like to thank those that helped with the install. Since the coax install, a 2m/70cm antenna quarter wave vertical was installed on the roof of the school and a temporary sloping half wave end fed dipole for 40/20/10m was also installed. The club has also supplied a few non-penetrating roof mounts that will be assembled and installed in the spring once the weather becomes milder. Between now and then, I hope to acquire a multi-band vertical for permanent HF operations. Any suggestions or ideas for good antennas on a flat roof would be greatly appreciated.

Another amateur I would like to thank is VE5AD for taking the time to allow me to be tested for my Advanced certificate a few months ago. With the new privileges obtained through my new certification, everything was in place to apply for a club call sign which was made official at the end of December. VE5FSK was born. FSK was chosen for Fransaskois, which is the name given to a native French speaker in Saskatchewan. Of course, the double meaning with Frequency Shift Keying makes the call sign instantly recognizable for amateurs worldwide.

Many students have expressed interest in learning more about this world of amateur radio and much more work remains to be done. Since I have been using my personal radio equipment at the VE5FSK station, the next step will be acquiring transceivers and various other accessories needed to make a complete permanent ham shack. I once again would like to thank the RARA for all its support over the past few years and specially over the past few months. Hopefully, VE5FSK will open the door to a few new amateurs in the years to come and bring the world of radio to the next generation.



Photo showing temporary antenna base and 2 meter antenna



Photo showing power supply, 2 meter hand held radio and cable connection

**Thank you to all those who contributed material for the Guywire this month.**

**Many thanks to VE5EE, VE5TLW, VE5SDH, VE5DLD and VE5MC.**

**We are always on the lookout for interesting ham submissions.**

**Send them to:  
ve5nn@gmail.com**