



# GUYWIRE

February 2019

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](mailto:ve5rara@gmail.com)

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

## GENERAL MEETING

February 13th @ 7:00 p.m.

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

Presentation

TBA

## RARA Executive 2018-19

President - Neil Slater - VA5SCA

Treasurer - Mark Humphreys VA5LNX

Secretary - Position to be Filled

Past President - Harvey Drinkle - VE5AD

Director - Justin Chapman - VA5RED

Director - Jerome Kuntz VE5KZ

Director - Lyle Maystruck - VE5EE

Director - Allan Tidball VE5LAT

Director - Terry White - VE5TLW

## Annual General Meeting March 13th 2019

**Several Executive positions  
are required to be filled  
for the 2019-2021 term**

**Please consider volunteering  
as an executive.**

**The continued existence of the  
Regina Amateur Radio Association  
depends on members**

## January Puzzler

Which Canadian inventor was the first person to broadcast audio (music) by radio?

**Answer:** Reginald Fessenden played his violin for the ships at sea on December 24th 1906.

## February Puzzler

Speaking of Canadian inventors, which Canadian invented the walkie talkie?

**Answer next month**

## Theme For Amateur Radio Day

The International Amateur Radio Union (IARU) has announced that the theme for World Amateur Radio Day, April 18, 2019, will be "Celebrating Amateur Radio's Contribution to Society".

The Administrative Council (AC) of the International Amateur Radio Union (IARU) held its annual in-person meeting on September 8 and 9, 2018 in Seoul, Republic of Korea, immediately prior to the IARU Region 3 Conference. The AC is responsible for the policy and management of the IARU and consists of the three IARU international officers and two representatives from each of the three IARU regional organizations.

After consideration of several possible alternatives the theme for World Amateur Radio Day, April 18, 2019, was confirmed as "Celebrating Amateur Radio's Contribution to Society".

Attending the meeting were IARU President Tim Ellam, VE6SH/G4HUA; Vice President Ole Garpestad, LA2RR; Secretary David Sumner, K1ZZ; regional representatives Don Beattie, G3BJ, Hans Blondeel Timmerman, PB2T, Reinaldo Leandro, YV5AM, Ramón Santoyo, XE1KK,

Gopal Madhavan, VU2GMN, and Peter Young, VK3MV. Present as observers were regional executive committee members Jay Bellows, K0QB, Ken Yamamoto, JA1CJP, and Don Wallace, ZL2TLL.

The next in-person meeting of the AC is scheduled to be held immediately prior to the IARU Region 2 Conference in Lima, Peru at the end of September 2019. Virtual AC meetings will be held by teleconference as required.

For more information visit:

(Note this may require tying to access)  
<https://wp.rac.ca/iaru-administrative-council-meeting-focuses-on-wrc-19-preparation-and-succession-planning/>

Alan Griffin

RAC MarCom Director

## Interesting Websites

For those of us who grew up in the halcyon days of the world's heyday of shortwave broadcasting, such as HCJB (Ecuador), Radio Moscow, VOA (Voice of America) and Radio Nederland (The Happy Station), those days are now history.

However we can relive a small portion of those days of listening to those voices from far-far away. The following link is the last broadcast and sign-off from Radio Nederland.

<https://www.youtube.com/watch?v=IXp8sg8wIXw>

The following website provides information for amateur radio, broadcast, weather, time signals, aviation, marine and beacons. It also provides worldwide tropospheric ducting forecasts, real time ionospheric skip maps and a radio communications dashboard from the Space Weather Prediction Center of the US National Oceanic and Atmospheric Administration.

[www.dxinfocentre.com](http://www.dxinfocentre.com)

# Spam Detection

1. Don't open the attachment or click on the link.
2. Do a "Reply" to the email. (just hit the reply button)
3. When the email reply pops up, look at the email address in the "TO" part of the email. If you don't recognize the email address, it is probably spam.  
(eg: if it looks like it came from me but the address in the "TO" bar looks something like this: cedriclohmuller@wanadoo.fr, then you know it is not from me.)
4. Don't send the reply email. Just delete it or shut it down and don't save it.
5. Delete the spam email from your inbox.

## Why 50 Ohms?

Have you ever wondered why modern transceivers are designed for 50  $\Omega$  coaxial load impedance, and not some other value?

Bell Laboratories in 1929, experimentally determined that the best coaxial impedances for high-power, high-voltage and low-attenuation applications to be 30, 60 and 77  $\Omega$  respectively. The arithmetic mean between 30 and 77  $\Omega$  is 53.5  $\Omega$ , while the geometric mean is 48  $\Omega$ . Therefore, a compromise was made between power-handling and attenuation and 50  $\Omega$  was selected.

The first wide spread use of 50  $\Omega$  coax was after WW2, when surplus RG8/U became available.

As a side note, why do TV distribution systems use 75  $\Omega$ ?

Before there were cable TV distribution systems, TV studios used 75  $\Omega$ , interconnections for their in-studio baseband connections.

This impedance worked best for low loss and flat frequency response of the TV baseband signal (DC to 4.5 MHz).

Most modern transceivers will be quite happy to work into a 75  $\Omega$  load as it represents a VSWR of 1.5:1

## "Cloud Burner" Antenna

This is a strange name to call an antenna.  
What is it?

The true and proper name for this antenna is, Near Vertical Incident Skywave (NVIS) Antenna. It is used to provide effective close-in and regional coverage of an RF signal utilizing skywave propagation. It is useful out to 1200 - 1600 km, getting around line-of-sight blockages especially in mountainous terrain.

The antenna is installed approximately 1/4 wavelength high or lower. The RF signal is propagated vertically towards the ionosphere where it is refracted towards the earth. This is the reason it is called a "cloud burner". The RF frequency must be chosen carefully, so it is neither too high nor too low. If it is too high a frequency, that being above the critical frequency of the ionosphere's F-layer, refraction will not occur. If the RF frequency is too low, the D-layer will absorb the signal and reduce signal levels. Both ends of the RF path should use a NVIS antenna to be as effective as possible.

The best frequencies to effectively use this type of antenna is 1.8 MHz (160 meters) to 7.5 MHz (40 meters). Frequencies above this usually exceeds the ionosphere's critical frequency.

73 - Terry (VE5TLW)



## Technical Terms Explained

### Duplexer Or Diplexer??

In Amateur Radio jargon we run up against diplexers and duplexers and are sometimes used interchangeably. What really is the difference and do we care? Yes, we do care, as they perform vastly different functions.

#### DUPLEXERS

A duplexer is a set of extremely filters that are designed to separate RF signals at two frequencies in the same RF band. They are most commonly used in repeater system in the VHF (30 MHz) and up bands. With the use of the sharp filter arrangement, the repeater can receive and transmit simultaneously at the two design frequencies on the same antenna. In the case of a 2 metre repeater, that RF separation is 600 KHz! The isolation between the TX and RX side of the duplexer can be in the range of 80 dB to 95 dB. To put that into real numbers the isolation is between 100,000,000 and 3,162,277,660. Those are huge numbers, almost mind boggling!

Due to their complex nature, duplexers are relatively complex and therefore expensive.

#### DIPLEXERS

A diplexer is a set of filters that are designed to separate signals from two different RF bands that are several MHz from each other. The filters are not as sharp as those used in duplexers, therefore they are easier to manufacture and are less costly to purchase. They provide isolation between ports in the magnitude of 45 dB to 60 dB. Once again, in real numbers, that equates to 31,622 to 1,000,000.

An example of the utilization of a diplexer is if you have an HF and 6 metre transceiver. You would use the diplexer to connect the transceiver to your multiband (160 - 10 metre) dipole antenna and a 6 metre yagi.

Going one step farther, there are triplexers that have 3 ports to connect Hf, 6m and 2m antennae.

Both types of filters have an insertion loss which should be taken into account during system design. With both types once again, having sufficient isolation between ports is critical to ensure that an excessive amount of RF energy does not appear at the front end of your receiver. Too little isolation could cause damage.

## Make Room For The "Wall Wart"

Those plug in low voltage power supplies (wall wart) that exist everywhere, take up valuable real estate in our power bars. Usually taking two spaces.

An easy and inexpensive solution is to use a 3-prong (hot, neutral & ground) to a 2-prong converter. These converters may be found in the electrical section of hardware and home improvement stores.

As the accompanying photo shows, the adapter raises the wall wart high enough above the outlet that it only occupies one space.



## Sluggish Antenna Rotator?

Now that winter with its cold weather, is upon us, does your antenna rotator become sluggish or immovable?

Go to your local auto parts store and purchase an electrically heated battery blanket and wrap it around your antenna rotator.



Only operate it when the temperature is cold enough that you notice sluggishness in your antenna movement.