This Month

• Upset hams
• Email pioneer
• 80m antenna
• Pay as you go
• A Meshing We Will Go!
• Licensing
• Sun in action
• ISS & Raspberry Pi 3
• Working Split
• Tie Dye
• Announcements
• Meewasin Digital Radio Symposium

The Saskatoon Amateur Radio Club is a great way to become acquainted with amateur radio. Our club has much to offer the beginner, as well as the seasoned veteran. Please join us at an upcoming meeting or for our Saturday breakfast, and discover the SARC.

Saskatoon Amateur Radio Club
326 Anderson Crescent
Saskatoon, Sk.
S7J 4A3

Club Email
ve5aa@rac.ca

Club Repeater
VE5SK 146.64-

2m Net
Nightly at 8:00 pm

Club Website
http://ve5aa.dyndns.org

Once again, it’s April. And everywhere you walk on April 1st, you will notice the Fools who walk among us. Smile…..you’re not one of them. It’s again time to make an attempt at an April Fools issue.

Some of the articles in this April edition of The Feedline are true…..some are not.
The mission of Saskatoon Amateur Radio Club is to enjoy amateur radio through the development, promotion, and expansion of amateur radio in and around Saskatoon.

### SARC Executive

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<tr>
<th>Position</th>
<th>Name</th>
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<tr>
<td>President</td>
<td>Ned, VE5NED</td>
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<td>chair as needed</td>
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<tr>
<td>Past President</td>
<td>Garry Schwartz</td>
<td>VE5SG</td>
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<tr>
<td>Vice-President</td>
<td>Sylvan Katz</td>
<td>VE5ZX</td>
<td>2013-2016</td>
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<td>Treasurer</td>
<td>Terry Cutler</td>
<td>VE5TLC</td>
<td>2014-2016</td>
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<tr>
<td>Secretary</td>
<td>Ron Ford</td>
<td>VA5RJF</td>
<td>2015-2017</td>
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### Directors

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<th>Name</th>
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<tr>
<td>Lawrence Dobranski</td>
<td>VA5LD</td>
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<td>Mike Luciuk</td>
<td>VE5MIK</td>
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<td>Ned Carroll</td>
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<td>Stuart Kasdorf</td>
<td>VA5KAS</td>
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<td>Ron Slind</td>
<td>VE5RS</td>
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### Committees

- **Repeaters**: Bruce, VE5BNC
- **Property and Assets**: Club Executive
- **Training Coordinator**: Ron, VA5RJF
- **Public Service**: Club Executive
- **Sick and Visiting**: Club Members
- **Field Day**: Club Members
- **Elmer/Mentoring**: Ken, VE5KRB
- **Trailer**: Club Members
- **Space Club**: Mike, VE5MIK
- **New Hams Liaison**: Stuart, VA5KAS
- **SARC Net**: Club members
- **Feedline**: Mike, VE5MIK
- **Web-site**: Terry, VE5TLC
- **50/50 Draw**: Bruce, VE5BNC
- **Little Bear Lake**: Terry, VE5TLC
- **Amateur Radio/Physics Research Station**: Ken, VE5KRB

The Feedline is the official publication of the Saskatoon Amateur Radio Club. This is your newsletter! Amateur radio information of general interest, club member project descriptions and doings, radio applications to other activities, corrections, or suggestions are all welcome.

If you wish to contribute articles, photos, comments, cartoons or perhaps you want to let your fellow members know about some rare DX contact you have made, or pictures of your shack or antenna installation, or anything else that interests you, then please submit these to the editor at mluciuk@gmail.com.

Be kind and respectful to your fellow hams. After all, without them, all you’d hear on the air is static.
LOCAL AREA REPEATERS

**VE5SK** 146.640- Saskatoon, SARC  
**VE5XW** 146.730- Rock Point  
**VA5LLR** 145.390- Lizard Lake  
**VE5ZH** 146.940- Saskatoon  
**VE5RPD** 145.190- Elbow/Davidson  
**VE5CC** 146.940- Saskatoon  
**VE5SKN** 146.940- Saskatoon  
**VA5SV** 145.330- Ridge East of Saskatoon  

APRS 144.390

**VE5RHF** Saskatoon DIGI  **VE5BNC-3** Saskatoon

IGATE & SATGATE  **VE5XW-1** Rock Point  **VE5HAN-4** Hanley DIGI

IRLP NODE

1360 Hard linked to VE5CC UHF Hub (444.975 +5M) & available to VE5CC, VE5SKN and VE5DNA VHF repeaters when linked.

LOCAL & REGIONAL NETS

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<td>3735 Khz</td>
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<td>ARES (Sun.)</td>
<td>80m</td>
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<td>Aurora</td>
<td>40m</td>
<td>2330Z &amp; 0200Z</td>
<td>7055 Khz</td>
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<td>0000Z</td>
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<td>80m</td>
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<td>3735 Khz</td>
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<tr>
<td>Prince Albert</td>
<td>2m</td>
<td>0330Z</td>
<td>147.150+</td>
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LITTLE BEAR LAKE

* The LBL telemetry address is [dougf.no-ip.com/tlm/test2.txt](http://dougf.no-ip.com/tlm/test2.txt)  
* The 6 m. beacon address [dougf.no-ip.com/va5mg](http://dougf.no-ip.com/va5mg)

CONTESTS

- **North American SSB Sprint Contest**, 0000Z-0400Z, Apr 3  
- **SKCC Weekend Sprintathon**, 1200Z, Apr 9 to 2400Z, Apr 10  
- **ARRL Rookie Roundup, SSB**, 1800Z-2359Z, Apr 17  
- **Transmit with your right hand in the air Contest**, 0000Z-0700, April 1

For a full calendar of contests see: [WA7BNM Contest Calendar](http://www.wa7bhm.com/calendars.html)

DXPEDITIONS

- **Market Reef**, OJ0W, April 9, 10, By OH3WS; 80-10m, focus on high bands; CW SSB  
- **Palau**, T88SM, April 13 - 18, By JA6EGL fm Koror; HF  
- **Maldives**, 8Q7, April 17 - 30, By RC5A as 8Q7CA and RM0F as 8Q7FU; 160-10m; CW SSB; QSL OK via Buro or direct, also Club Log

For a full list of DXpeditions see: [http://www.ng3k.com/misc/adxo.html](http://www.ng3k.com/misc/adxo.html)
Ham Radio Enthusiasts Upset

Many members of Saskatoon’s Amateur Radio community are upset at the demolition of the venerable Traffic Bridge, also known as the Victoria Street Bridge. Many were hoping to turn the bridge into a giant antenna.

“The bridge has never been painted in my recent memory, and the rust, according to our calculations would have, oddly enough, aided transmission on the 20m band”, said Georgie, VA5GEO.

“Those fancy LED lights they put up a few years back, well, we could use them to spell out the name of our local club. It would have been great advertising!”

Despite protests and a somewhat fierce letter writing campaign, a number of sections of the bridge have come down.

“That’s just a waste of good rust and metal”, affirmed Seth (also known as Rusty), VE5RuST. “Seems the rust really helps get the signal out. I’m thinking of putting the rust in a bottle and marketing it.”

The club members are now turning their attention to organizing and hosting an April Fools Fest which will look at turning other structures into viable antennas.

Internet Hall of Famer Ray Tomlinson died on Sun Mar 6, 2016

Tomlinson was the man who basically invented email as we know it today, including making the choice to use the "@" sign in an email address. He was 75.

Tomlinson invented email, a system where a user on one network could send a message to someone on another network, in 1971.

He proceeded to win many awards over his lifetime for email. But he couldn’t say what the first email ever sent actually said.

When asked about it in an interview with the New York Times in 2009, Tomlinson explained, "I sent a number of test messages to myself from one machine to the other. The test messages were entirely forgettable and I have, therefore, forgotten them."
80m Antenna for small gardens

46ft multi-band antenna for small gardens by g7fek. Works well on 80m. An excellent DX performer and is an ideal replacement for your half size G5RV...

Many years ago I moved into a house with a small garden of about 45 ft. I needed an antenna system capable of the lower HF bands. The 1/2 size G5RV is a farce on the lower HF bands, as are most of the reduced dipole antenna arrangements so I wanted something that was a similar size but truly resonant so losses were kept to a minimum.

This is the latest version of the arrangement I came up with. For years it became my standard quick and dirty install wherever I have moved.

Several Radio Amateurs have built variations of this antenna and have reported excellent performance on 80m with good DX, especially in such a small space.

Advantages

• Small size (46ft long x 24ft high)
• 50 ohm Coaxial Feed
• Multi-band operation for 80m to 10m
• ATU less operation possible on up to 4 primary bands (80m/40m/20m/15m)
• Low angle of radiation dominant (good for DX)
• Easy to construct and set up

What is it?

Although at first glance this looks like a small "off centre fed" dipole, this is actually a nested Marconi 1/4 wave antenna on the lower HF bands, giving a low angle of radiation and predominantly vertical polarisation, and opposing feed impedance is used to provide automatic band switching without traps. The interaction of the nested elements means that both elements play their part 7MHz and up, with dimensions chosen to provide a good multi-band, low angle antenna. This latest version combines resonance of the horizontal top sections and the interaction between elements and on 10MHz utilises 1/4 wave feed technique similar to that used in the Zepp antenna, for improved multi-band performance.
It is simple and very cheap to build, it is very effective in a small space and will beat a "1/2 size" anything by 10's of dB on 80m while taking up even less space. It is designed to look a bit like a short G5RV so that you can scrap your 1/2 G5RV to build it!!

Performance

My own experiments over the years have shown that, on 80m, this antenna will perform close to a full sized dipole for DX contacts, despite the small size, because of the low angle of radiation (30 degrees) and full size elements.

As this is a low angle antenna, NVIS (high angle) short skip contacts are only down by around 10dB compared to a dipole. This does not usually matter, unless the band is in poor shape, because NVIS signals are normally very strong. Remember that a 66ft Windom or 52ft 1/2 sized G5RV will probably not even work on 80m, and you cannot fit a full sized 80m dipole into a 46ft garden!!.

On higher bands, the antenna performs well too. Low angle is dominant on all bands except 10 MHz, where the antenna is working as a end fed dipole. (There is a variant by OH5RM for low angle on 10MHz - see pdf doc)

When compared to "straight up" vertical antennas, the combined horizontal and vertical components of the G7FEK antenna still give rise to useful high angle radiation.

Recently, on finding the original text document I created for my packet BBS in the early 90's, I decided to re-publish the design here. Throughout 2007 and 2008 the antenna was optimised using comparison signal reports. This was done at sunspot minimum proving the antenna is usable under poor conditions.

G7FEK and Computer Modelling...

As no two antenna modelling programs give the same results and it is not possible to model all parameters, computer modelling of antennas only allows for a proof of concept. Thus this antenna was optimised in the real world.

I always advocate building antennas to evaluate actual performance, just as the professionals do. Few amateurs seem to want to build antennas these days, instead preferring to comment on their model data alone. I'm often reading antenna articles with "performance" data derived entirely from modelling software - often after significant number "tweaking". How can you provide performance data on an antenna which has not been built yet?.

In response to your requests, I have included models sourced from other Amateurs. The EZNEC model shows less interaction than actually occurs in real life, but still gives a good idea as to how the antenna works. The MMANA-GAL model appears to be far more realistic when compared to the real antenna and is recommended for a more detailed assessment, plus the full software is free!
BroadBand-Hamnet or a Meshing we will go!

Judging by the attendance at the March 7th SARC meeting there is significant interest in building a BroadBand Hamnet mesh in Saskatoon. For those that could not make the meeting or those in attendance that want a bit of review BroadBand-Hamnet is a form of a high-speed multimedia mesh network (HSMM-MESH). It makes use of commercial off the shelf networking equipment, primarily specific members of the Linksys WRT54G family or Ubiquiti Wifi devices. The home website of the mode is http://www.broadband-hamnet.org/. There is even a Saskatchewan geographical area in the forums for discussing our progress, plans, and challenges.

This peer-to-peer network dynamically forms a mesh of IP routers to move IP traffic. Nodes join and leave the network without intervention, and the routes (paths to move traffic through the network) dynamically form. This digital network is not dependent on the Internet to function – but it makes use of Internet protocols and technology.

Some early adopters will be putting nodes on the air as soon as the snow goes and towers are climbable. Thanks to the generosity of Bob, VE5XEF, a collection of potential Wifi routers and associated 2.4 GHz Wifi hardware is on hand. Plans are afoot to put a node on McClure tower and perhaps one somewhere on the west side.

Some of the ideas that we are exploring include: a) getting hams that are in close proximity to each other to stand up mesh nodes; 2) implementing Internet tunnels to link the BroadBand-Hamnet islands that will form during the early days (i.e., getting traffic to outlying areas); 3) determining what services we will offer on the Mesh; 4) using mesh during the marathon – full frame IP TV anyone?. Early ideas include a file server, a web server, a NTP server, an IRC server. Maybe event an Asterisk VoIP server (https://www.youtube.com/watch?v=Czd6yVRc4ac). Remember a BroadBand-Hamnet is an IP transport network. If we can stand up a server, we can deliver the services.

As this is being written (March 26th) one node, VA5LD-01, is now up and running in the Greystone Heights neighbourhood. It is on channel 1. If you are adventurous, stand up a node and see if you can connect.

We are considering having a BroadBand-Hamnet day. Bring you wireless router, your laptop, and come out to a Saturday of installing the software and configuring your node. The date will be soon announced so watch the SARC website.

73 de VA5LD

Lawrence

Happy Meshing!
PAY AS YOU GO

Saskatchewan — A local ham radio operator is facing a significant barrier to getting on the air, and it involves his wife.

Wendy Fergus, a self-described entrepreneur, has turned her husband’s hobby into an income generator. She drives a new car, wears expensive furs and takes exotic vacations.

Fergus was reached by satellite phone while on a cruise of the River Nile in Egypt. “I had hoped to help moderate his time in his radio room, but instead it became a significant wealth-driver for the family. I’ve been able to send the kids to college and buy some nice purses,” she said.

The source of the wealth? A coin-operated and credit card pay-as-you-go device that requires payment before allowing the radio to turn on.

“I didn’t realize how much time I was spending on the radio,” says Luther Fergus, the amateur radio operator.

“At this point, I’ve cleaned up all loose change in the couch cushions and under the car seat, and gone through every pair of pants in my closet. It’s becoming increasingly difficult to resist my five-year-old’s piggy bank,” he said.

Fergus plans to start a Kickstarter account to fund his involvement in the phone portion of Sweepstakes.

“But, this weekend is the trader’s net! I have no idea how I’m going to pay for that air time,” he said.

Mrs. Fergus says she plans to manufacture more of the devices and sell them to other radio wives in nearby clubs.

Industry Canada is currently looking into the rules regarding this matter. So far, it appears the law says nothing about an XYL having pecuniary interest.

Get Your Ham License in 10 Hours

Tired of going to classes? Tired of braving sub-zero temperatures (in Saskatchewan) to simply GET to classes? Well, you can get your Ham Radio License in Canada in 10 HOURS! Yes, you’re reading it right, 10 HOURS!

Go to www.hamlicenseintenhours.ca give us your credit card number and you’re in. 10 hours of study material is unlocked once you pay the fee. You can also sign up for our speed reading program for a small additional fee. Just simply read the study material, press the SUBMIT button and you’ll be issued a nice shiny certificate with the call sign of your choosing to proudly hang on your wall. Don’t delay, operators are standing by to give you assistance if needed.
Entire Year 2015 of our Sun in Action in HD

This high-definition video shows the Sun in the 171-angstrom wavelength of extreme ultraviolet light. It covers a time period of January 2, 2015 to January 28, 2016 at a cadence of one frame every hour, or 24 frames per day. This timelapse is repeated with narration by solar scientist Nicholeen Viall and contains close-ups and annotations. The 171-angstrom light highlights material around 600,000 Kelvin and shows features in the upper transition region and quiet corona of the Sun.

The Sun is always changing and NASA's Solar Dynamics Observatory is always watching. Launched on Feb. 11, 2010, SDO keeps a 24-hour eye on the entire disk of the Sun, with a prime view of the graceful dance of solar material coursing through the Sun’s atmosphere, the corona. SDO’s sixth year in orbit was no exception. This video shows that entire sixth year—from Jan. 1, 2015 to Jan. 28, 2016 as one time-lapse sequence. Each frame represents 1 hour.

SDO’s Atmospheric Imaging Assembly (AIA) captures a shot of the Sun every 12 seconds in 10 different wavelengths. The images shown here are based on a wavelength of 171 angstroms, which is in the extreme ultraviolet range and shows solar material at around 600,000 Kelvin (about 1 million degrees F.) In this wavelength it is easy to see the Sun’s 25-day rotation.

During the course of the video, the Sun subtly increases and decreases in apparent size. This is because the distance between the SDO spacecraft and the Sun varies over time. The image is, however, remarkably consistent and stable despite the fact that SDO orbits Earth at 6,876 mph and the Earth orbits the Sun at 67,062 miles per hour.

Scientists study these images to better understand the complex electromagnetic system causing the constant movement on the Sun, which can ultimately have an effect closer to Earth, too: Flares and another type of solar explosion called coronal mass ejections can sometimes disrupt technology in space. Moreover, studying our closest star is one way of learning about other stars in the galaxy. NASA's Goddard Space Flight Center in Greenbelt, Maryland. built, operates, and manages the SDO spacecraft for NASA's Science Mission Directorate in Washington, D.C.

Watch at……… https://www.youtube.com/watch?time_continue=3&v=HgP0e1VHBxc

Listening for the ISS with Raspberry Pi 3 and SoDeRa by Andrew Back G7JKB

Andrew Back G7JKB writes in Design Spark about using the Raspberry Pi 3 and the SoDeRa SDR to receive amateur radio transmissions from the International Space Station

The SoDeRa board was only formally announced in February 2016 at the Mobile World Congress. Developed by Lime Microsystems and featuring their latest Field programmable RF (FPRF) transceiver, the LMS7002M, the SoDeRa is capable of supporting just about any wireless standard that operates between 100kHz and 3.8GHz. As if this wasn't enough, it's also dual channel — MIMO — with two each fully independent transmit and receive channels.

The board also includes an Altera Cyclone IV FPGA, enabling high throughput processing to be carried out in hardware, between the transceiver and FX3 USB 3.0 controller.

Read Andrew's article at
http://www.rs-online.com/designspark/electronics/eng/blog/listening-for-the-iss-with-raspberry-pi-3-and-sodera

SoDeRa Software Defined Radio
Bees, Maple Syrup and Working Split

Alita, Quebec — “Shocking!” That’s how Mont Tremblant ham radio operator Flip Bergeron describes his most recent DX pileup. “It’s beyond belief! After all this time…and NOW THIS!” It’s back to beekeeping for Flip Bergeron

Bergeron, a local innkeeper who operates his ham radio device to pass the time during long Quebec winters, was visibly startled and shaken Sunday as he attempted to make contact with a station in Senegal.

“I tuned up the rig and moved over to the pileup frequency. Oh, I listened for a moment or two. I heard a lot of other hams trying to work the station, so I gave out a call, too.”

It was only then that Bergeron realized that something was terribly, terribly wrong with his plan.

“I immediately began to hear tens of other hams transmitting ‘He’s working SPLIT!!’ ‘He’s up 5 you knucklehead!’ There were cat-calls, jeers and all types of rude comments! It was downright embarrassing. One ham with a strong northwestern accent suggested that I purchase a receiver.”

So upset over his split versus simplex mistake, Bergeron has vowed to sell his ham radio equipment, tear down his antennas and focus on his first loves: maple syrup and beekeeping.

“Trees and bees don't have any idea about split VFO operation,” he says. “And they don't yell at you when you accidentally snap a limb or step on one of them.”

Truer words were never said. Bergeron’s syrups and honeys are available at his inn Monday-Friday.

Ham, 76, Dyes Peacefully At Home

By K5KVN, on the scene

WAYNE’S RIVER, NH – Friends plan to celebrate the ham radio legacy of Arnold Leddington this weekend in his small hometown, where he transmitted the dots and dashes of Morse Code for more than 60 years.

“I’m really happy for him,” said Fredrick Worthingshire. “He was a ham’s ham. And, it’s not often that you see an 76-year-old man begin a new hobby.”

Leddington recently announced that he has been quietly dyeing various fabrics for about three weeks now. Tie-dye t-shirts and bandanas are his specialty.

“It’s true, I've made my last QSO,” said the ham. “But you're not rid of me yet!”

He plans to sell his hand-colored doilies, hats, t-shirts, and denim jackets at area hamfests.
SARC Important Dates

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<td>April 11, 2016</td>
<td>SARC Regular Meeting</td>
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<tr>
<td>Jan. 7 - Mar. 24</td>
<td>Ham Radio Classes - 7 pm</td>
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Check out M0JCQ's Ham Blog for the Top 10 Reasons to Take Ham Radio Portable

http://www.hamblog.co.uk/top-10-reasons-to-take-ham-radio-portable/

ANNOUNCEMENTS, NEWS, ETC.

Trans Canada POW WOW Club
Wandering around the shack at midnight (05:00 UTC), worked all the dx on the cluster, nothing to do? QSY to 3.750 and check into the Trans Canada POW WOW Club.
The Club operates from the end of September to the end of April to promote and encourage reliable communications from coast to coast. This is to help all amateurs improve their stations and share friendship and good fellowship.

Tom VA3TS
http://va3ts.ca/pow_wow_club.php

DISTURBANCE, ARIZONA – In a surprise announcement, local ham radio operator Martin Jeffries says he has “had enough of the commercialism” and “gouging of the consumer by big ham radio companies” and will be building his next transceiver from scratch. He plans on starting the project within days and being on the air with the new rig sometime during the summer of 2025.

MS Walk Saskatoon  May 1, 2016  Ham Radio Volunteers needed!
Location: Archibald Arena - 1410 Windsor St  Check-in Time: Sunday, 8:30 am - 10:00 am
Start Time: 10:00 am  Route Length(s): 3 k or 6 k

Saskatchewan Marathon 2016  May 29, 2016  Ham Radio volunteers needed!
What’s all the fuss about? Ever wonder what all these silly acronyms mean or why all the talk about digital radio? *We can help!*

The Meewasin Amateur Radio Society has been a trailblazer in digital radio technology. In 1999, we installed the first IRLP node in Saskatchewan which happened to be the sixth in the world! Since then, we’ve been leading the way on new, cutting edge technology. MARS installed both the first D-STAR and C4FM repeaters in the province and we continue to push forward with our experimentation with Digital Mobile Radio (DMR) with a number of localized hotspots scattered throughout Saskatoon.

What’s going on? On April 30th, 2016, MARS will host what we hope to be the first annual “MARS Spring Digital Radio Symposium.”

What is it? It is a day-long training class on many of the current digital technologies in use today. Attendees will learn:

- Proficiency in D-STAR, Fusion and DMR
- The difference between all the different modes
- Simple hotspot construction
- Radio programming
- Introduction to APRS
- Demonstrations of each technology

What should I bring? Bring an open mind! It also wouldn’t hurt to bring a laptop to help you with note taking, radio programming or software demos. There will be Wi-Fi available. If you have a D-STAR, Fusion, DMR or APRS capable radio, bring it. We can help you troubleshoot programming and operational issues.
How much? Registration is $35 and includes:

- Entry fee
- Door prize draws
- BBQ Lunch
- Continuous snacks and refreshments throughout the day
- Electronic copies of all presentations, documents and software demonstrated

Registration is limited to 30 people and therefore it is encouraged that you register early.

>> CASH | CHEQUE | VISA | MASTERCARD | PAYPAL <<

Radio Raffle: In addition to the door prizes, a separate raffle will take place for an Icom ID-31A hand held radio at the end of the day. MARS members will have tickets for sale starting on or about January 1st, 2016.

Enjoy IRLP, D-STAR or Fusion? Support the infrastructure you enjoy by supporting the Meewasin Amateur Radio Society!

Membership Dues: $25 | Payable at the Registration Desk

www.meewasin-ars.ca

Meewasin Amateur Radio Society | Box 65 | Martensville, SK S0K 2T0