FEEDBACK

The Official Newsletter of the
Georgian Bay Amateur Radio Club

February 2019

This Month

2019 Executive

President .....Tom VA3TVA
Vice-President... Frank VA3GUF
Treasurer.....Bobby VE3PAV
Secretary.....Peter VE3BBN

Message from the President

Tom VA3TVA

Hi All. The past few weeks has been busy for me. Between plowing snow, and bringing in firewood. I've not had much time to consider anything radio. The long range forecast looks like the second half of the month will be much gentler on us all around Grey and Bruce counties. I imagine that the turn out to the last club breakfast was smaller then usual. I was snow plowing, Frank hadn't made it up Friday night due to road conditions, Tex and Mary decided that it wasn't worth the drive in those conditions. They were probably right.

Winter Field day has come and gone. Once again Frank hosted. It was a much smaller turn out than last year. But it was a good time none the less. Lots of good food shared, and good company around both the wood stove and the radio.

The radio course is coming on hard and fast. To my knowledge there are 4 instructors so far. More are always welcome.
Field day will be here in no time. It will be at Victoria park again this year. We are planning a slightly different layout this year, making it easier to swap antennas between radios. A few volunteers are still needed to help with the organisation of it. If you can think of anything that was missing in our field day over the past few years, please, let me know.
Wishing everyone good health and good weather through the coming weeks. Looking forward to seeing everyone at the next meeting.

Tom VA3TVA president@gbarc.ca

Minutes of Meeting January 22, 2019

Location - Century 21 Building, 927 2nd Ave E, Owen Sound.

Presentation by Frank VA3GUF Frank VA3GUF gave a talk on “T” circuit tuning. (the club tuner). Marvin VE3VCG spoke about the CERT. Looking for interest from someone.

Meeting called to order at 19:24

Attendees Executive Tom VA3TVA, Frank VA3GUF, Bobby VA3PAV, Dave VA3WI, Philip VA3QVC, Bernie VE3BQM, Adam VE3IZS, Marvin VE3VCG, Janet VA3EAC and Guests Beth, Jim

Do we have a Quorum - yes
A QUORUM SHALL CONSIST OF AT LEAST THREE FULL MEMBERS IN GOOD STANDING WHO ARE NOT MEMBERS OF THE EXECUTIVE COMMITTEE,PLUS AT LEAST THREE MEMBERS OF THE EXECUTIVE COMMITTEE . NO MOTIONS SHALL BE CONSIDERED OR VOTED ON AT A GENERAL MEETING UNLESS A QUORUM IS PRESENT

Minutes of last meeting - included in the November’s newsletter. Motion to accept by Frank VA3GUF and seconded by Adam VE3IZS, carried.

Treasurer’s Report - Bobby VA3PAV presented a report on our current finances and as of the current date we have a balance of $xxxx.xx.
(1) There was a discussion regarding the need for a letter accompanied with a cheque to the Sydenham Optimist Club in the amount of $200.00 for the rental of their room during the last amateur course. Tom VA3TVA will write this said letter.
(2) There was a discussion for a donation to Avantec Communications to go towards their company BBQ. This is for their donation of antennas and feed line they gave to GBARC. Frank VA3GUF suggested $150.00. Bernie VE3BQ motioned to pay $150.00, seconded by Phi VE3QVC.
(3) Adam VE3IZS motioned a Tim Horton’s card in the amount of $30.00 be given to Randy (the sponsor on the Bell tower). Seconded by Frank VA3GUF. Tom VA3TVA volunteered to pick the card up and submit the receipt.
(4) Janet VA3EAC won the 50/50 draw of $31.50. Janet VA3EAC donated $31.50 to the club.

Old Business

Winter Field Day: Field day will take place at Frank’s place VA3GUF, Starting at 14:00 Saturday January 26, 2019 and finish at 14:00 Sunday January 27, 2019. This will be a potluck event.
Summer Field Day: June 22 - 23. 2019. Frank VA3UF heard back from the Town and the baseball field is not available. This year will be held at Victoria Park located at 858 10th St E, Owen Sound, ON N4K 1X7. Frank VA3GYF will head up this event (and all

future events). This event and all others will be set up as if for an emergency. The club is looking for help for:
1. Advertising 2. Food Director 3. Port-a-potty arrangements 4. Station organizer 5. Media contact 6. Safety coordinator.
There was a discussion about the best lay out for set up and operation. Further discussion and planning is needed.

Repeater update: The GBT is back in full service including the **APRS** digipeater. Explornet has re secured the heliax so there have been no more fault beeps heard since. While doing that, all the duplexers were checked and adjusted. There were some adjustments made and this is reflected in the good operation of the repeater. The UHF link transceiver is also in service, so all that is needed is the UHF antenna at OSR. OSR is pretty much complete, it is in Tom VA3TS's shack and he is just doing the final things with backup batteries. Other than that, it is ready to go back to OSR site.

2nd Net Coordinator: Still looking for net controller coordinator to lead the initiative to maintain a net schedule and the volunteer controllers. With improvement to OSR Marvin VE3VCG can take over again.

Amateur Radio Course: Frank VA3GUF is teaching, Tom VA3TVA and Dave VA3WI will be helping. Looking for more volunteers. To date we have 4 students signed up. The location for this course is at the Owen Sound & North Grey Union Public Library, 824 1st Ave W, Owen Sound, ON N4K 4K4. Starting on March 9th, 2019 between the hours of 9:30 - 13:30, Saturdays only for a total of 8 classes.

Membership dues: are up to date. More memberships are expected to come in during summer field day.

Scouts Winter Camp: Is on January 26, 2019. Carson VA3OSO and Dave VA3WI will be there in the morning. For the afternoon Tom VA3TVA and Bobbie VA3PAV volunteered to be there.

Ontario QSO Party: Adam VE3IZS would like to see the club organize a location for this event and offered to the students who participate in the Amateur Radio Course if possible to come. April 20 - 21 2019.

New Business

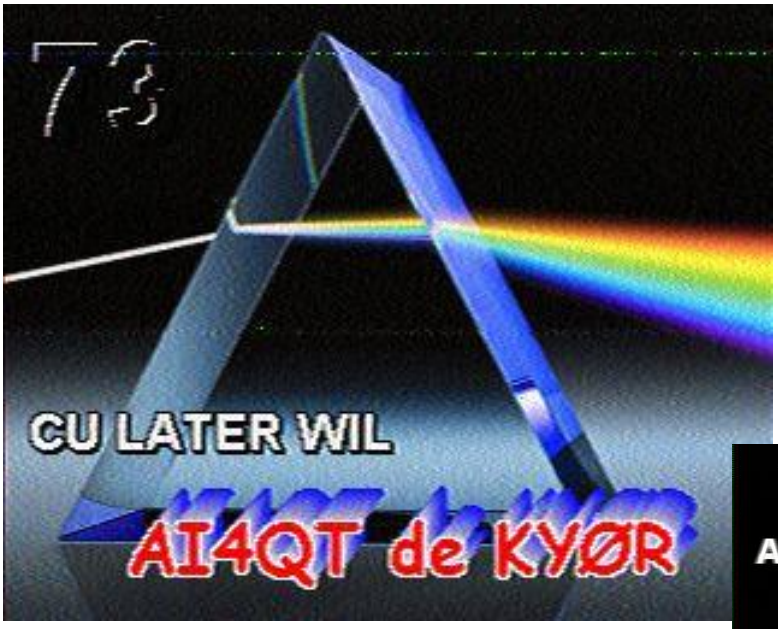
No new business was discussed.
Motion to Adjourn: at 21:08 by Frank VA3GUF and seconded by Phil VA3QVC
Next Meeting: February 25, 2019 at 19:00hrs at the office of Mark Barbosa, Sales Representative, Century 21, 927 2nd Ave E, Owen Sound.

Minutes taken by Beth van Aalst guest.

ISS SSTV Transmissions By Douglas VE3WDZ

The World Radio News Items from the link on the GBARC initial web page had an article “Announcing ARISS / NOTA Slow Scan TV Event”. According to the article the event was scheduled to begin Friday, Feb. 8 at 14:00 UTC and run through Sunday, Feb. 10 at 18:30 UTC. The images would be transmitted from the ISS on 145.800 and use SSTV mode PD120.

A Google search found a page - https://amsat-uk.org/beginners/iss-sstv/ - that seemed to have enough information to get started. This was a totally new aspect of Ham radio hobby for me.



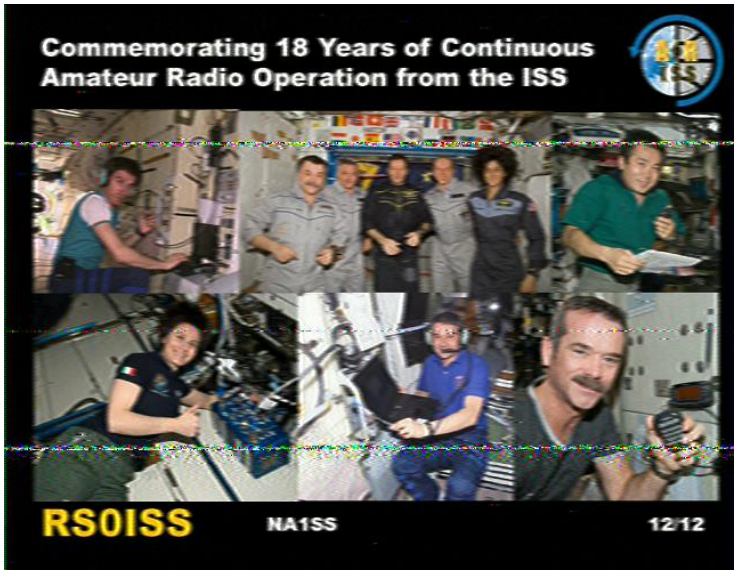
The amsak-uk web page listed three possible programs for decoding the information. The appropriate program is determined by the computer OS – Windows, Apple iOS, or Linux. Since the computer by my radios is Win 7, I downloaded and installed MMSSTV. This is an older program that is not complicated for basic use and was easy to configure.

Testing of the SSTV setup was done using an HF rig on 14.230 MHz. My plan was to use the sound card in the computer so the LINE IN was jumpered to the speaker for the radio. In spite of poor band conditions, images were received and even QSOs watched. Images were of varying quality and here are two samples:

Not bad for less than 2 hours work, eh? Next task was to link the audio from the 2m radio to the computer. A phono jack was spliced into the line for a remote speaker and the sound level was verified using Environment Canada on 162.550. Since I also had a Signalink USB on the shelf, I configured it for the Kenwood TM-271. For radios I had the Kenwood TM-271 and the Yaesu FT-8900 and for antennas I used a GP-15 at a height of 50 feet and a DS-150 discone at 20 feet. On the weekend various combinations were tried but there seemed to be too much static. That problem was tracked to the monitor on my main computer – blank screen or off and no static! The Baofeng HT was also checked and when outside, it received the signal quite well. The radios were about equal but it seemed that the GP-15 did marginally better for an antenna.

Some examples of the images that were received:

On the AMSAT-UK web page is this link - https://n2yo.com/?s=25544&df=1 – to track the position of the ISS. This is a good way to know when it will be in your receiving zone. Once you get an image, the ISS will return in about 90 minutes. This page



along with the images and my radio information for receiving the images have been of interest to my grandkids. I think a good intro to STEM.

Definitely SSTV is a very interesting aspect in the Ham radio hobby and one that can also be pursued on the HF bands. The ISS has transmitted images in the past and hopefully will do more in the future.

73, Douglas, ve3wdz

With the ISS image transmission on the weekend I took the opportunity to describe for my grand kids a bit about the ISS and how the pictures got to me - radios, antennas, computers, etc. My grandson, age 5, explained to the family at supper last night how important math was to science. Wow! He also informed the family that since he had 4 birthday parties this year that his age went from 4 to 8. No cob webs in that lads cranial cavity. (:

When Band-Pass/Band-Reject (Bp/Br) duplexers really aren't band-pass

Reprinted with permission http://ka7oei.blogspot.com/ Clint Turner *(edited as required to suit)*

In the repeater world there is a misconception that just ***because*** the duplexer may say "Band Pass, Band Reject" on its label - or even in its 'spec sheet - that it ***really does*** offer a proper band-pass response ***over a wide range of frequencies*** - but this is usually ***NOT*** the case.

A close-in look at a typical Band-Pass/Band-Reject duplexer:

Take Figure 1, below, as an example.

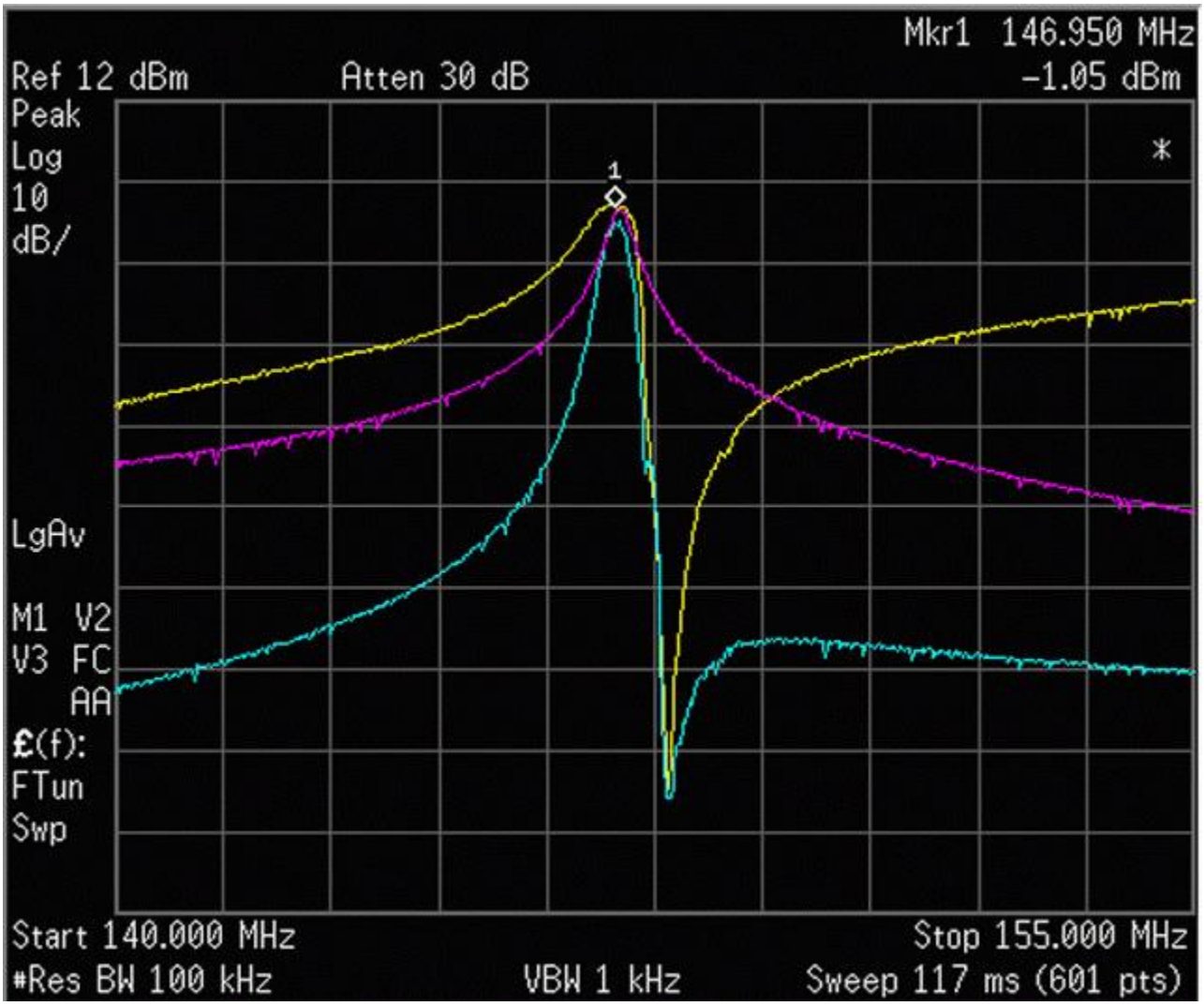


Figure 1:
The magenta trace (red-purple) is that of a proper band-pass cavity, the yellow trace is that of a one side *(3 cavities)* of a 6-cavity "Band-Pass/Band-Reject" duplexer while the cyan trace is the combination of the two. The top of the yellow peak *(with the "1" marker)* represents the center frequency of the duplexer with a bit over 1dB loss.

In the analyzer trace above, the **YELLOW** is the response of one of half of a typical amateur "Band-Pass/Band-Reject" 6-can duplexer tuned in the 2-meter amateur band and from this trace we can see several things happening:

- As there should be, there is a peak at the pass frequency corresponding to the "band-pass" of the duplexer - in this case, a bit over 1dB loss.
- Just above the peak - 600 kHz, to be precise - is a very deep notch - corresponding to the frequency to "band-reject" part of the name. In reality, the depth of the notch depicted in Figure 1 is about 100dB, but the true depth is not apparent from the trace.
- Once one moves about 1 division (1.5 MHz) either side of the peak/notch frequency, the attenuation isn't that great - only about 20-30dB, and the trace above the center seems to be on a asymptotic trajectory upwards (lower attenuation) as frequency increases.

From the above we can see that while this duplexer offers a "Band-Pass/Band-Reject" response, ***this occurs only at frequencies very near the input/output frequencies of our hypothetical repeater***. Once you get "farther away", this "band-pass" response diminishes.

On the other hand the **MAGENTA** (red-purple) trace shows a single band-pass cavity filter. While its attenuation is not very high at the notch frequency - on the order of 10-15dB - it is apparent that by 2 MHz above the center frequency it is offering greater attenuation than the so-called "Band-Pass/Band-Reject" filter and that below the center, the trend indicates that they might cross over at a point just to the left of the trace.

Comment: *This "Bp/Br" nomenclature is widely applied amongst many manufacturers to duplexers that have the same response as the duplexer above. It is the rare exception to find a "Band-pass/Band-Reject" duplexer that does **NOT** exhibit the properties described on this page!*

*Unless you have already installed some band-pass cavities on each leg of your duplexer and/or have done proper sweep responses at frequencies far removed from the designed frequency, you should **not** assume that your "Bp/Br" duplexer is **truly** Band-Pass/Band-Reject over a very wide frequency range!*

Taking a wider view:

Figure 1 only spans about 7.5 MHz on either side of 2 meters, so let us widen it a bit as shown in Figure 2, below:

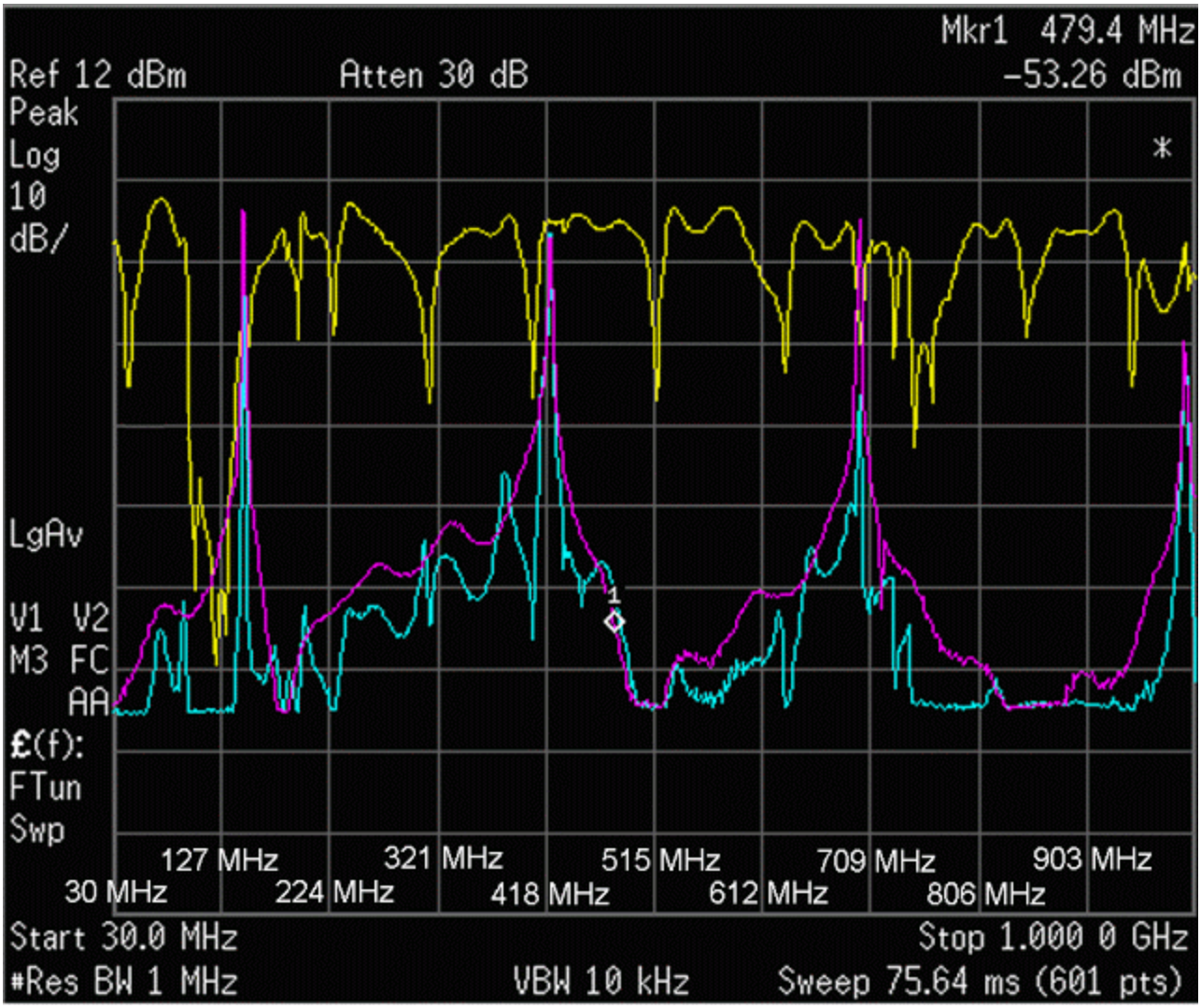


Figure 2:
Spanning from 30 MHz to 1 GHz, the same cavities/filters as noted above. Again, the yellow trace is one half of a 6-cavity "Band-Pass/Band-Reject" duplexer, the magenta trace is the pass cavity alone and the cyan trace is the result of the bandpass cavity and the Bp/Br duplexer cascaded. It should be noted that at ***odd-numbered*** harmonics the pass cavity will present a narrow bandpass response that can be eliminated with the addition of a simple low-pass filter.

When looking over a much wider frequency range - 30 MHz to 1 GHz - the picture is quite different. Based on this sweep we can see that our typical "6 can" duplexer - of which 3 "cans" of the transmit or receive side - are represented above in **YELLOW** and that for the majority of the frequency range there is relatively little attenuation offered overall! Paying particular attention we see that the attenuation in much of the VHF-low TV band (channels 2-6) and the FM broadcast band is quite poor - on the order of 3-10dB - as is the case over much of the VHF-high (channels 7-13) and large sections of the UHF TV band.
What we can see from this picture is that if we rely on ***only*** our so-called "band-pass/band-reject" duplexer on a site with other services such as FM or TV broadcast, or even land-mobile, those frequencies just above the amateur band, ***<u>such a duplexer</u>***

offers relatively little protection against those signals getting into the transmitter or receiver.

Why it matters:

One might wonder why it would matter whether or not a duplexer offered good "far-off-frequency" rejection.

In many cases, particularly in mountainous areas, amateur repeaters are co-located at sites with other transmitters and if adequate filtering is not implemented those "other" signals can get into the repeater's receiver and/or transmitter.

The effects of these other signals' ingress into the receiver is easier to envision: Many of us have observed that, while driving about, our mobile radios have occasionally been overloaded with other signals - the effect being that we are hearing signals on frequencies where they are not. This phenomenon is the inevitable result of the receiver's mixer - a device that is designed specifically to make new signals out of multiple signals in the first place - synthesizing entirely new ones out of the several that get in via its antenna.

Several decades ago it was common for land-mobile VHF and UHF radios to have receivers that had very tight filtering as there were typically only a few, closely-spaced channels that were used. By virtue of this extensive filtering it was unlikely that other signals' somewhat-removed frequencies could even get in and cause undesired signals to be generated. These days most radios have very broad filtering in their receiver inputs - this, to allow a wide range of frequencies to be accommodated. While convenient, this also has a down side: Those formerly widely-spaced frequencies from other services now have little impediment and it is more likely that they will get into the receiver and produce undesired, spurious signals.

Many years ago it was also the case that many repeaters used modified land-mobile radios with their extensive filtering, but nowadays many "store bought" repeaters *(such as the Icom D-Star and Yaesu Fusion lines)* are simply beefed-up mobile radios with "broad as the proverbial barn door" filtering on their receivers. While this is convenient for the repeater owner to not have to dig up some test equipment and tune up these receivers' narrow filters, this also means is that there are many instances where a club has replaced their old, crystal-controlled analog repeater with a new one - only to find out that it did not work well at all when these off-frequency signals - formerly blocked by the old receiver's narrow front-end filter - clobbered the new receiver. Worse still, some of these repeaters *(namely the Icom D-Star)* provided no analog test points where the receiver performance could be directly analyzed to determine if there was a problem, much less its extent!

What's worse is it is often the case that at many sites this sort of interference may be

intermittent in nature - occurring only when a certain combination of transmitters happened to be online at once: With most repeaters using subaudible tones for access, this degradation is often masked since the repeater may stay silent when it is being impacted, the only clue being that some users may suddenly find it difficult to get in to the repeater with a good signal at random times. In other words, unless one uses the proper test equipment to take and record ***repeatable*** measurements at or away from the site, gradual or occasional degradation of the receiver's performance may not be so apparent.

An insidious problem:

While the overloading of a receiver is a familiar problem to many of us, it may not be as obvious that a similar thing can happen in a transmitter. Like a receiver, a transmitter has the ability to take two signals and produce others via mixing. For this to happen it usually requires that the "other" signals are very strong - but this is something that can happen at a busy radio site!

As a demonstration of what can happen, it was noted that via a VHF antenna atop Farnsworth Peak near Salt Lake City, Utah - a very busy broadcast site - one could read 100-150 milliwatts of RF on the coaxial cable at the input to the duplexer. When this energy was analyzed it was found to be a combination of FM broadcast and UHF TV signals - the same transmitters that produce several *megawatts* of effective radiated power, combined. If the same 6-cavity duplexer depicted in Figure 1 and Figure 2 was inserted in the line, this power would reduced - but only to the 20-50 milliwatt level!

This power was measured on the feedline of what would be a D-Star repeater, but prior to the installation of that repeater an analog Kenwood TK-740 repeater had been used for several months to assess coverage and performance prior to the installation of the Icom D-Star repeater.

On the day that the D-Star repeater was installed it was discovered that no-one could get into it, despite their running 50 watts. Upon analysis it was discovered that the 20-50 milliwatts coming back into the coax was causing the Icom repeater's receiver to be deafened *(desensed)* by about 40dB - a factor of 10,000-fold! Upon reconnecting the TK-740, no problems were noted and it was realized that the Kenwood repeater had a more traditional, narrow-band helical resonator filter assembly in its front end and compared to the more modern "broad-band" front end of the Icom repeater - which used parts of modified mobile radios - that the power in from the antenna was completely demolishing its receiver!

Figure 3:
A typical Motorola 4-can duplexer for UHF. Just like its VHF counterparts it easily passes energy at frequencies above and below its tuned frequency.

The installation of ***two*** bandpass cavities on the receive side allowed the Icom repeater to work as well as the old Kenwood analog repeater with its superior filtering - but this brings up the question about what might happen on transmit?

The transmitter can also act as a mixer: Multiple signals - one of which might be the repeater's output frequency - can combine within the circuitry and instead of only the transmit frequency being emitted, some conglomeration of signals can appear!

In the example of a VHF transmitter we know that while the low-pass filter may remove the frequencies above the 2-meter band - say, UHF land-mobile and UHF TV - it will do nothing to remove energy from FM broadcast stations. Similarly, if this were a UHF transmitter, its low-pass filter might remove some of the UHF land-mobile and UHF TV energy, but it would have little effect on signals from FM broadcast and VHF high and low band TV.

It might be suggested at this point that the use of an ***isolator*** - a device that, while allowing the transmitter's energy to go to the antenna, it directs any power coming ***back*** down the coax into a dummy load so that it cannot even get to the transmitter, might be appropriate here - and this would be correct... Mostly. While these devices are invaluable - and even *required* equipment at many radio sites - to both prevent RF from nearby-frequency transmitters from getting into your transmitter - and then re-radiated again and also to insulate your transmitter from a bad VSWR - it is far less-effective when the frequencies that are coming back down the coaxial cable are away from its design frequency. In other words, while your VHF isolator may work okay from 140 to 160 MHz, it will probably do comparatively little at the FM broadcast band and in the UHF range.

Adding a pass cavity:

It is, therefore, a ***very*** good idea to equip any repeater with at least ***two*** pass cavities: One on the receiver, tuned to the input frequency and another on the transmitter, after the isolator, tuned to the output frequency.

If one examines both Figures 1 and 2 you can see the **Magenta** trace showing the response of a single pass cavity. When compared to the response of a typical Bp/Br duplexer *(the **YELLOW** trace)* the general trend is that the farther away one gets from the pass frequency, the more attenuation it offers. One quirk of band-pass cavities is that they also have a response at odd multiples of their pass frequency, which means that a 2-meter pass cavity will also pass energy around the low end of 70cm, around 700 MHz, and so-on. In the case of 2 meters, this spurious response could be eliminated by the addition of a low-pass filter.

Both figures 1 and 2 also show something else: What happens if you cascade a Bp/Br duplexer with a single pass cavity *(the **CYAN** trace)*? For the most part the overall attenuation of the two sets of filters is complementary - that is, the "best of both worlds." As can be seen the simple addition of a pass cavity knocks out almost everything that is off-frequency from that which is desired.

Figure 4:
A typical "4 can" *(2 on transmit, 2 on receive)* 2-meter duplexer. Even though it is labeled as a "band-pass/band reject" unit, this refers only to the two frequencies of interest - the transmit and receive - and ***not*** to the RF spectrum overall! The plots in Figures 1 and 2 are from a similar, "6-can" *(3 on tx, 3 on rx)* duplexer, but the rejection of frequencies "far removed" from where they are tuned is comparable.

Bandpass cavities have another important property as well: Lightning protection. Because lightning is a broad-band energy spike, it would make sense that if you reduce the passband of the signal path from the antenna, less RF energy, overall, will get in - and the use of a passband cavity also guarantees that there is ***NO*** DC path from the center pin of the coax from the antenna to the center pin of the coax going to the radio. One radio club - the Utah Amateur Radio Club - has several mountain top repeaters and there have been a number of instances where the repeater antenna has taken a direct lightning hit, sometimes destroying the antenna, but ***never*** has the attached receiver or transmitter ever been damaged.

Summation:

If you are installing a repeater or other radio at a site with ***any*** other transmitters you should ***not*** assume that just because the label or specifications of the duplexer say that it is "Band-Pass/Band-Reject" that it will actually do so ***over a wide range of frequencies.*** Again, most brands of duplexers will simply pass, with relatively little attenuation, those frequencies that are far removed from the operating frequencies and the "band-pass/band-reject" nature is limited to the specific frequencies of interest - such as the transmit side of the duplexer ***passing*** the transmit signal but ***rejecting*** energy at the receive frequency.

Such a duplexer should ***always*** be supplemented with at least one bandpass cavity for the transmit frequency and another for the receive frequency to provide additional off-frequency rejection - and adding a simple low-pass filter on each leg won't hurt, either. While these added elements result in higher signal loss, this need only be 1dB or less in most cases. Adding this extra cavity will increase the effectiveness of an isolator on the transmitter - which works only well near its design frequency anyway - but it will also prevent excess, off-frequency energy from getting into the repeater's receiver which, these days, is more typically a "mobile" unit with a very broad front end that has been converted. Finally, the humble band-pass cavity provides good lightning protection, just by its very nature!

[End]

Cavity Interconnecting Cables

The Theory:

The 1/4 wave length cables between cavities in a duplexer are there to transform the low impedance that the notch in one cavity presents, to a high impedance at the next cavity so that the notch in that cavity is more effective.

The impedance in the pass range of the duplexer is hopefully in the 50 ohm range and cable length makes no difference to the impedance in the pass range. The 1/4 wave length cables between the TX and RX to antenna T are critical not for impedance matching but to present a high impedance between TX and RX, to isolate one from the other.

The notch in the RX side is tuned to the TX frequency. With a 1/4 wave length cable between the cavity and the T, the notch looks like a short in the cavity at the TX frequency and a 1/4 wave away, at the T, it looks like an open circuit at the TX frequency. This effectively isolates the RX cavity from the T at the transmitter frequency.

The same thing happens in the TX side of the duplexer. The TX cavity notch is tuned to the RX frequency. The short circuit of the notch is transformed to a high impedance

or open circuit a 1/4 wave away at the T. This isolates the transmitter from the receiver at the T junction. At frequencies away from the notch the cables act as normal 50 ohm cables to pass the wanted frequencies.

There is a very large difference in isolation with different cable lengths. It is also VERY critical for SWR looking into the T connection. Choose the wrong length between the input of the can's and the "T" to the antenna, and SWR can become almost infinite.

As I said, the effective length of the cable must be about 1/4 wl or any odd-1/4 wl and that length is from the actual virtual port on the cavity to the virtual port on the adjoining cavity or the electrical center of the antenna "T".

Changing a cable from 1/4 wl to a 1/2 wl at the T will cause a nearly infinite SWR at the antenna port (unless the cavity design appears as an open at the reject frequency, in which case it HAS to be 1/2 wl). Changing the can-to-can length to 1/2 wl will generally decrease notch depth by at least 20dB.

While double-shield makes virtually no measurable difference over single shield, cable length clearly makes a large difference in a BPBR system. It does the same thing in multiple stub traps for low bands.

Wavelength Calculator http://wxtofly.net/wavecalc.htm

Emergency Preparedness Points to Ponder

submitted by Adam VE3IZS

- Emergency Communications have to work every time they are called on. **No exceptions**.
- Emergency Communications have to be prepared in advance. **No jury rigging on the spot**. If you are then you need to evaluate your planning skills.
- Emergency Communications **have to be versatile** in that they may need to do more than you originally expected of them.
- Emergency Communications **have to be plentiful**. If they are so unique that you can only have 1 or 2 then that might not fill the need when you need more.
- Emergency Communications **have to be relatively simple to use**. Not setup or configuration to use. During an emergency you don't want to be fiddling with details.
- Emergency Communications **have to be used on a regular non-emergency basis**. Familiarity breeds efficiency.
- And last for this list, Emergency Communications have to fit you and your members needs.

Upcoming Radio Operator Training Course

The location for this course is at the Owen Sound & North Grey Union Public Library, 824 1st Ave W, Owen Sound, ON N4K 4K4. Starting on March 9, 2019 between the hours of 9:30 - 13:30, Saturdays only for a total of 8 classes. With the exception of April 2, & 20, 2019 & May 19, 2019 because the library is closed. For more details or to sign up click **HERE** .

Websites of Interest Copy/Paste the urls below into your browser

Send APRS messages to your cellphone and back
http://smsgte.wixsite.com/smsgte

APRS also supports global callsign-to-callsign messaging, bulletins, objects email and Voice
http://www.aprs.org/

Arduino APRS Tracker (wilderness location tracking)
https://www.hackster.io/jweers1/arduino-aprs-tracker-wilderness-location-tracking-a50607

How to be anonymous on the web? Tor, Dark net, Whonix, Tails, Linux
https://www.youtube.com/watch?v=_393maHbHWc&feature=youtu.be

Why ham radio still has an enduring appeal.
https://www.cbc.ca/news/canada/newfoundland-labrador/amateur-radio-1.4968865

SWAP SHOP

I have too many projects sitting on shelves that I'll never get around to building. Offering these to GBARC members first.
One BITX40 40m 10W SSB transceiver, semi kit (factory assembled boards, needs mounting in enclosure). BITX40 **sold**. Thanks Rob VE3PCP

One µBITX 80-10m 10W SSB/CW transceiver, semi kit (factory assembled boards, needs mounting in enclosure). uBITX **sold**. Thanks Bobby VE3PAV

73 Dave, VE3WI

Letters to the Editor

Another good newsletter.

One comment re repeater protocol. The blanket advice to "avoid phonetics on FM" is a little too broad brush. Consider that English contains 8 (9 in US) letters that sound almost the same. Of course I'm talking about the letters pronounced: BEE, CEE, DEE, EEE, GEE, PEE, TEE, VEE, ZEE (in US).

On initial call up, I think it's courteous to at least give your suffix in phonetics. Others might be driving in a noisy vehicle. Locally we have calls like VEE CEE GEE, BEE CEE TEE, PEE CEE PEE, etc. Maybe I'm the only one, but I have a hard time deciphering calls like these while driving.

Another reason we would need to use phonetics is in public service ops, especially emergency support, when it's important that communications are 100% reliable.

My 2 ¢ worth.
73
Dave, VE3WI
==========

What Happened to the 100,000-Hour Residential LED Bulbs?
Were the initial estimates just over-optimistic? Was it all marketing hype? Or, did we not know enough about LED aging to predict the true useful life of a bulb?
https://hackaday.com/2019/02/05/what-happened-to-the-100000-hour-led-bulbs/

From Carl VE3APY
==========

The Last Word

A few words of appreciation to those that contribute to this newsletter by submitting news stories or interesting web links or ideas. If you have something then send it to contact@gbarc.ca , any format, any size, anytime, but if you want it to appear in the current months newsletter, then send it by the 3rd Tuesday of the month.

Help US Out *Would you like to receive email notifications when this newsletter is posted? Sign up for our mailing list. We send out only few mailings a month and you can unsubscribe at any time. No ads and no personal information, your email address is never shared with anyone else.* *https://www.gbarc.ca/lists/?p=subscribe*

Membership for details regarding membership in the club go to:
https://www.gbarc.ca/gbarcmembers.php

Current Club Membership as of February 2019 Sorted by surname

VE3OSA Scott Abrams Meaford	VE3MIO Maureen Nightingale, Wiarton
VE3TUQ Aubrey Alderdice, Meaford	VA3KGZ Alicia Noakes, Inverhuron
VE3MPG Bob Baillargeon, Sauble Beach	VA3AQZ Justin Noakes, inverhuron
VE3USI Tex Brown, Flesherton	VE3PCP Rob Noakes, Inverhuron
VE3QVC Phillip De Kat Owen Sound	VE3AJO Andrea O'Donoughue, Owen Sound
VA3EAC Janet Double, Paisley	VA3SDA Seann O'Donoughue, Owen Sound
VE3VCG Marvin Double, Paisley	VE3PAV Bobby Pavlovic Lions Head
VE3LKD Bob Droine, Owen Sound	VE3IDS Don Richards, Chatsworth
VA3RRD Linda Droine, Owen Sound	VE3BBN Peter Richards, Port Elgin
VE3EPF Markus Eppendorfer, Bognor	VE3BAK Dave Rosenfeld, Owen Sound
VA3GUF Frank Gufler, Owen Sound	VA3DST Dieter Shoepperle, Owen Sound
VE3WRF Doug Hall Meaford	VA3CIC Jon Skagfeld, Owen Sound
VE3IZS Adam Karasinski, Elmwood	VA3TS Tom St.Amand, Shallow Lake
VE3JJQ Jim Kerr, St.Thomas	VE3AOE Bill Sullivan, Durham
VE3RQY Greg Laroque Owen Sound	VE3EFQ Paul Sweeney, Owen Sound
VE3DFL Daphne Lorch, Teeswater	VA3TVA Tom Van Aalst, Owen Sound
VA3STG Fred Lorch, Teeswater	VA3RYK Rijk van Huisstede, Owen Sound
VA3MUM Chris McLaren, Sauble Beach	Chris Venn, Owen Sound
VA3CJM Jim McLaren, Sauble Beach	VE3APY Carl Wall, Durham
VA3DNY Dan Mills, Owen Sound	VA3ILT Mary Watson, Flesherton
VE3BQM Bernie Monderie, Owen Sound	
VE3WI David Newcombe, Port Elgin	

The next newsletter will be in March.