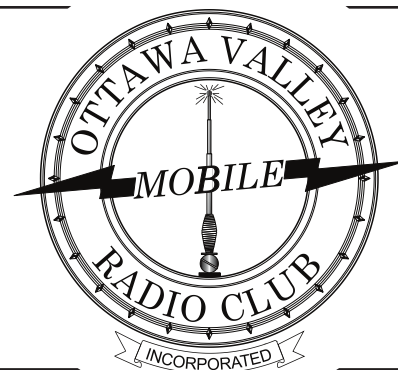


Rambler

Newsletter of the
Ottawa Valley Mobile
Radio Club
Incorporated



Volume 64

Issue 8 — April 2022

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President's Ramblings

I have wondered what a really competitive contest station looked like, and, how they operated the station to maximize their score. Well, thanks to Rob Kaufman, VE4GV and his presentation at the March OVMRC Zoom meeting, question answered.

Rob gave us a virtual tour through contest station PJ2T in Curacao. This contest station has five operating positions, a complex but relatively compact antenna farm, and a location nearly second to none, was a real eye opener from technical set up to operating philosophy.

I fully expected a complex technical set up, which there was, but must admit I didn't appreciate the complexities of such things as the ongoing station maintenance, and operating strategies such as strict adherence to such things as operating shifts of no more than four hours at a time to ensure operators remain "fresh". So many aspects of contesting just sped by I would easily sit through this presentation again to allow more info to sink in.

Well done Rob, thanks for presenting to the OVMRC.

While on the topic of presentations, upcoming in April, Norm has secured Tim Duffy, K3LR from DX Engineering. He will be giving his antenna building presentation. We are lucky to have Tim presenting to us as the DX Engineering presenters are extremely busy and in high demand. Thanks, Norm!

Moving on, I can finally report the club has stock of two popular ferrite toroid cores available for sale to club members. The FT114-43 core is suitable for wire wound transformers such as would be used for an end fed antenna or a choke. The FT 140-43 core is more suitable to a transmission line balun with RG 316 coax as it is slightly larger and as such could handle more power. These two sizes were chosen to be a compromise for minimizing stock yet be useful for a variety of projects from 160 M through 6 M. The cost to club members is: FT 114-43 \$1.50 ea. and FT 140-43 \$3.30 ea.

I want to remind OVMRC club members:

- start planning for another OVMRC DIY Field Day.
- contact Alan (Rambler editor) va3iah@rac.ca for some guidance in submitting an article for the Rambler.
- LMR 400, LMR 195, RG 316 coax is available to club members for purchase.

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Notice of Meeting

Wednesday Apr. 20th 2022
via **Zoom**

Check-in Time 6:45 to 7:15 P.M.

Members and invited guests will be sent an email invitation several days before meeting date with login and password. Others not on our mailing list please contact Norm at: ve3lc@rac.ca for invitation.

Agenda

- Call to Order at 19:15 by Barry, VE3NA;
- Greetings to Guests and New Members;
- Chairperson Reports;
- **Feature Presentation:** Antenna building Tim Duffy, K3LR of DX Engineering
- Meeting adjournment to be followed by Rag Chew for those interested

OVMRC Executive and Officers 2021-2022

President:

Barry Allison, VE3NA
ve3na@rac.ca

Vice-President:

Norm Rashleigh, VE3LC
ve3lc@rac.ca

Treasurer & Membership Records:

Nicole Boivin, VE3GIQ
nlboivin@sympatico.ca

Corporate Secretary:

Ron Smith, VE3LBU
rjs3.smith@gmail.com

The above four positions are "Directors" and officers in charge of running the Corporate affairs of the Ottawa Valley Mobile Radio Club Inc.

Standing Committees

Club Projects & Bulk Orders:

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ve3na@rac.ca

Radio Course &

Accredited Examiner:

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ve3lc@rac.ca

Meeting Reception:

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Special Events:

Roger Egan, VA3EGY
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John McGowan, VA3JYK
john.mcgowan1314@gmail.com

OVMRC Groups.io

Ongoing discussion Group at:
<https://ovmrc.groups.io/g/main/topics>; if you are not a member please subscribe. All radio amateurs are welcome.

**Ottawa Valley Mobile
Radio Club, Incorporated**
PO Box 41145
Ottawa, ON K1G 5K9
www.ovmrc.on.ca

OVMRC Life Members

Ernie Jury, VE3EJJ
Maurice-André Vigneault, VE3VIG
Ralph Cameron, VE3BBM
Doug Carswell, VE3ATY
Doreen Morgan, VE3CGO

OVMRC Repeaters

VE3RAM

Limited coverage to
Orleans and East Ottawa

443.700 MHz (+)
DMR CC1 & D-Star
Network connected to
Brandmeister

VE3TWO

Limited coverage to
East and South Ottawa
147.300 MHz. +, PL 100.0 Hz.
Analogue FM and C4FM

Special Event & Field Day Call Sign

VE3JW

The Rambler is the official newsletter of the Ottawa Valley Mobile Radio Club Incorporated and is published 10 times a year (monthly, except for July and August). Opinions expressed in the Rambler are those of the authors and not necessarily those of the OVMRC, its officers or its members. Permission is granted to republish the contents in whole or in part, providing the source is acknowledged. Commercial use of the contents is expressly prohibited.

Submit articles and notices to:

Alan at va3iah@rac.ca

OVMRC Affiliations



Local Weekly Nets

(all check-ins welcome)

- **Rubber Boot Net**, VE3OCE 146.880 MHz (-)136.5 Hz tone mornings at 7:30 AM conducted by Roger, VE3NPO
- **Pot Hole SSB Net**, 3760 kHz, every Sunday morning at 10:00 AM conducted by Ernie, VE3EJJ, or Glenn, VE3XRA.
- **Pot Lid Slow Speed CW Net**, Sunday night, 7:30 PM, 144.095 MHz., vertical polarization. In response to interest co-controllers Hugo (VE3KTN) and Norm (VE3LC) have kicked off a re-launch of the Sunday evening Pot Lid Net in its 48th season for accomplished and budding CW operators. A permanent net control station is being sought who can dedicate time as a Net Control Station each Sunday night.
- **QCWA Chapter 70 Net**, VE3OCE 146.880 MHz (-) 136.5 Hz tone, Monday evenings at 7:30 PM conducted by John, VE3ZOV
- **Capital City FM Net**, VE2CRA 146.940 MHz -, (100 Hz tone), Monday evenings at 8:00 PM.
- **Champlain Mini Net**, VE3STP 147.060 MHz -, (114.8 Hz tone), held Monday through Friday at 7:00 PM.
- **Upper Frequency Net**, Simplex 144.250 MHz using USB, Tuesday evenings at 9:00 PM conducted by Glenn, VE3XRA. Following check in on 2 m you can check your radios on 6 m at 50.150 MHz and 70 cm on 432.150 MHz as well using USB. All check ins are welcome.
- **Phoenix Net**, VE3OCE 146.880 MHz (-) 136.5 Hz tone, Tuesday evenings at 7:30 PM conducted by Pete, VE3XEM
- **OVMRC 2-Metre Net**, Thursday Evenings, 8:00 PM, Club Net on FM will be held through VE3OCE 146.880 MHz (-)136.5 Hz tone conducted by Hugo, VE3KTN.

Informal Amateur Radio Restaurant Gatherings

(Many Cancelled until Further Notice)

- **QCWA Chapter 70** breakfast gathering every Tuesday morning at 7:30 to 10:00 AM, Summerhays Grill, 1972 Baseline Rd., Nepean - **Restarted**
- **Orleans Coffee gathering** every Friday morning at 9:00 AM, McDonalds, 2643 St. Joseph Blvd, Orleans
- **QRP Group Dinner** meeting, 2nd Wednesday every month, 5:00 PM, Newport Restaurant, 322 Churchill Ave N., Ottawa
- **Phoenix Net monthly Breakfast** gathering, usually the **second Saturday** every month at 9:00 AM, T-Basil Restaurant, 2440 St Joseph Blvd, Orleans. (get on Pete VE3XEM's mailing list for a monthly reminder ve3xem@rac.ca)

(Continued from page 1)

- year end door prizes. Every zoom meeting you attend you receive another “free” entry ticket for the draws. (ensure your membership is up to date!)

That’s it for my April ramblings. Everyone is invited to join the OVMRC April Zoom meeting Wednesday, April 20. Check in will start at the usual ~ 6:45 PM with a start time as close to 7:15 as possible. Anyone not receiving the check in credentials can do so by sending an email to Norm (Zoom custodian) ve3lc@rac.ca.

The OVMRC meetings are open for all to attend. Club membership is not required (but of course we would like to have you as a member). Guests wishing to attend can submit a request to the Zoom custodian (see above) and joining credentials will be sent to you.

73

Barry, VE3NA

Meeting Minutes for March 16, 2022

Date / Time: Wednesday, March 16, 2022 @ 19:15

Location: Via ZOOM on line meeting

1. Call to order:

President, Barry Allison, VE3NA called the meeting to order at 19:15. There were 52 official check-ins.

2. Moment of Silence and Guest Greetings:

Barry, VE3NA began the meeting with a moment of silence for Nepean’s Dave Conn, VE3KL (SK) a well known and respected

operator who passed recently. Following the observance, Barry extended greetings to everyone for this third meeting of 2022. Guests included Wayne Getchell, VE3CZO; and Rob Haddow, MM7RXH / VE3RXH. Rob has been in the UK for several months and will be returning to Canada shortly. A special welcome was extended to guest speaker Rob Kaufmann, VE4GV.

3. Approval of minutes from previous meeting:

MOTION: Moved by Bill Henderson, VA3HWA and seconded by Norm Rashleigh, VE3LC that the minutes of the meeting held Wednesday, February 19, 2022, be approved.

VOTE: No Objections.

CARRIED.

4. Projects, Haves, Wants and Announcements:

A) Haves: Barry, VA3NA advised members that the club has a supply of LMR 195 coax and connectors in stock. Toroids have been ordered.

B) Wants: None noted.

5. Agenda and Meeting Content:

Barry, VE3NA outlined the agenda for the meeting which included:

- **Feature Presentation:**

Rob Kaufmann, VE4GV Contest Station PJ2T, Curacao

Norm, VE3LC introduced Rob, VE4GV who by day is a Winnipeg Endodontist, and in his spare time an avid Ham Radio enthusiast who encourages HF operating amongst his club members to build their DXCC contacts. He reviewed his

experiences as a contest participant and guest ham operating out of Curacao’s PJ2T Contest Station in the Caribbean in 2019 and 2021. Rob presented a number of slides showing the physical location and set up of the station. PJ2T was started in 1995 by John, W1BIH in a house located on the sea coast. The house itself was built in 1974. Over the years the house was eventually purchased by Dr. Geoff Howard, W0GC who owns, operates and maintains the contest station. The Contest Club has approximately 20 members who pay dues of \$550, US funds. The station features a tri-tower footprint on a relatively small lot, with 5 operating positions inside the house. Dr. Howard and his partner live on-site part of the year and at their home location in the US for the rest of the year. Rob was very impressed with the operational organization and the amount of physical maintenance required regularly and carried out by Dr. Howard. Rust and corrosion are the biggest enemy of the site. The April Rambler will include screen shots from Rob’s presentation. Following some questions, Norm, VE3NA thanked Rob for his excellent presentation.

- **AllStar Link Node:**

Norm Rashleigh, VE3LC – Norm presented a tutorial on his new AllStar node, 56337 operating on 446.500 MHz. AllStar is a digital linking network used to link repeaters, or nodes, over the Internet to other repeaters or nodes, which combine remote stations, base stations home or otherwise, hotspots and conferencing hubs. AllStar operates on FM analog in a similar linking fashion to IRLP or Echo

Link. The hardware runs on a Raspberry Pi but will not run on Windows. In this country, operators can link to The Canada Hub, Hub 1. A good source of information can be heard and shared weekly on Tuesday evenings at 7 PM on the “All Things Tech Net”. Contact Norm at ve3lc@rac.ca for support and information.

• **Quebec QSO Party:**

Barry, VE3NA reminded members about the first ever, Quebec QSO party happening next month on Sunday, April 17, 2022 from 08:00 to 15:00 EST. This event is teamed up with Ontario QSO Party on the same weekend in April, to take advantage of the synergy between the two provinces. The goal is to bring new people into ‘contesting’ and create a rewarding experience for all experience levels. Logging software N1MM already includes the QCQP. The event will take place on the 80-40 and 20 metre bands. The website is up and running so for more information go to <https://wp1.quebecqsoparty.org/>

• Nominations for Executive and Chair positions will be called for next month, April 2022. Please consider running for office or nominating a fellow club member.

• **CN Ride for CHEO:** Barry noted that entries are now being accepted for the event May 1st.

• **Jeffrey Arcand, VA3PEW:** Many Community Events are returning this summer including the CN Cycle for CHEO and the Rideau Lakes Cycle Tour in mid June. Ham radio operators are required for these events too

monitor and report progress. Bicycle, walking, and fixed mobiles are needed. Reports will be handled using local 2 metre repeaters. To volunteer, contact Jeff at Jeffrey@va3pew.ca.

6. Chair Reports: Financial Report and Membership

Nicole Boivin, VE3GIQ:

Highlights of the financial summary include:

\$25,364 approximately in the bank account, including cash; 124 Memberships are active. Approximately \$13,000 will be invested from the bank account into a suitable interest paying investment, to be announced. Four of the five budgeted Club donations have been doled out, including DARF, RAC Scholarships, AMSAT and ARISS.

Transmitter Hunting:

Roger Egan, VA3EGY updated the local program, including the 15 mw ‘hunt’ this week on 2 metres at 147.570. Roger referenced YOTA’s feature story on page 61 in the recent TCA magazine (operating as VE3YOTA).

Canadian Ski Marathon: Neil Herber, VE3PUE advised the Ski Marathon is virtual only and is on until March 21. Approximately 1000 people are taking part to date.

Rambler:

Alan Hotte, VA3IAH thanked everyone for their contributions to the Rambler and he welcomes any and all submissions for publication in the monthly newsletter. Many design changes are taking place, including consideration for the visually impaired. Please contact

Alan at va3iah@rac.ca with your article and ideas.

Testing Continues:

Norm Rashleigh, VP, VE3LC – Norm provides Basic and Advance testing for those entering the hobby or those wanting to upgrade their certificate. Contact Norm at ve3lc@rac.ca.

Glen MacDonnell, VE3XRA – reminded members of two upcoming Flea Markets in June. Both Cornwall and Smiths Falls will be staging events, possibly outdoors. Check on line with the ONTARS Newsletter for more information.

7. Upcoming contests:

For more detailed information on upcoming contests, see the WA7BNM contest calendar: <https://www.contestcalendar.com/>

RAC Members can login and go here:

<https://wp.rac.ca/amateur-radio-contest-calendars/>

ARRL Members can log in and go here:

<http://contests.arrl.org/>

8. Adjournment:

MOTION: Moved by Ron Smith, VE3LBU to adjourn the business meeting at 21:30.

9. Next meeting:

The next monthly meeting of the OVMRC will be held via Zoom Wednesday, April 20, 2022 at 7:15 pm.

Minutes recorded and prepared by Secretary, Ron Smith, VE3LBU

March OVMRC Meeting Feature Presentation: Contesting from PJ2T in Curacao – Rob Kaufmann (VE4GV)

The March 2022 OVMRC meeting included a feature presentation of the PJ2T contest station in Curacao and the experience of Rob Kaufmann, VE4GV during his participation in both the 2019 CQWW DX SSB and 2021 CQWW DX CW contests. Please see below for a picture of the Signal Point station PJ2T in Curacao and maps depicting some of the details of the island and its strategic location for contesting.

QRZ). It has around 20 members (including Tom VE3CX), who contribute \$550 (USD) annually to gain rights to operate from a fully turn-key contest station that, in the last 18 years, has logged more than 1 million contest QSOs and at least as many casual QSOs.

The station is set up with five operating positions and a broad range of towers and antennas that are available for operators to use. Due to the marine/tropical conditions, a strong maintenance regime for the station is required to

operation for long periods of time due to being supported by a single benefactor or sponsor rather than a sustaining group or partnership. The significance of people management and organizational skills was also emphasized as an essential requirement for the sustainability of a context station in order to coordinate operators and staff into a cooperative and unselfish team. People skills are also necessary in order to keep a cordial relationship with neighbours and the Curacao authorities.



Curacao, Netherlands Antilles

- Part of the "ABC Islands": Aruba (P4) Bonaire (PJ4) Curacao (PJ2)
- Size: 37 Miles by 9 Miles
- Population 170,000
- Languages: Papiamento, Dutch, English
- Hato Airport has 11,000 foot long runway
- Has one of the largest ports in the Caribbean, with ship repair facilities

©GraphicMaps.com

Curacao worldatlas.com

LOW - HILLS - MTL



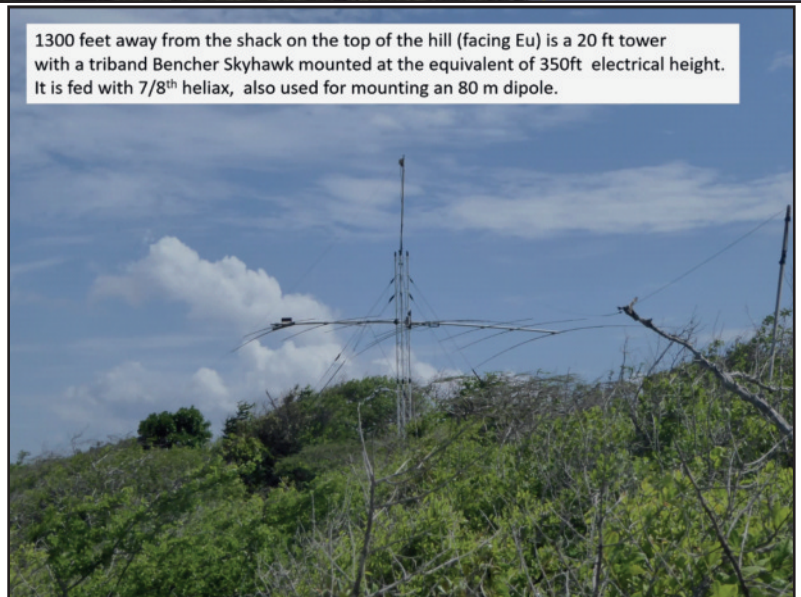
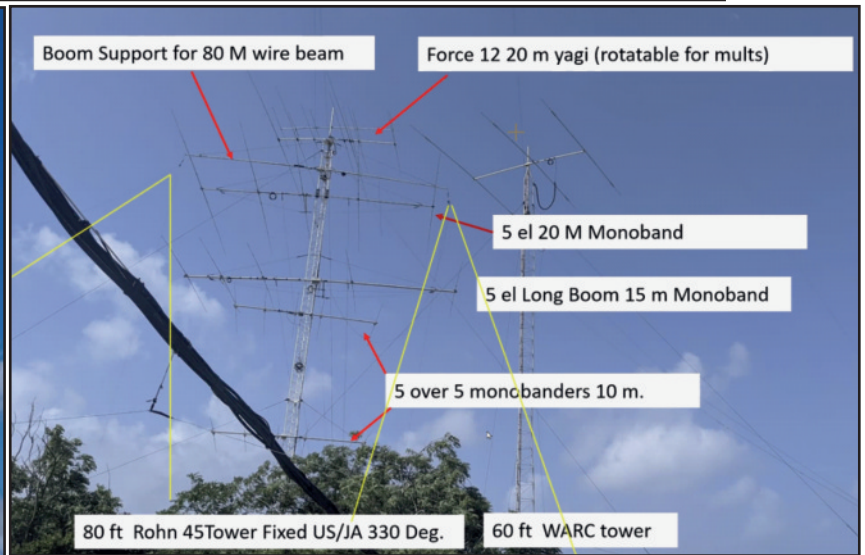
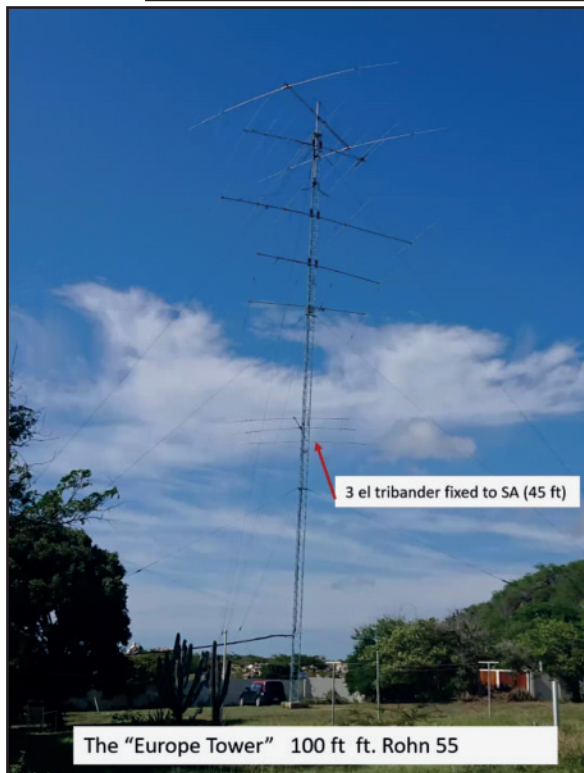
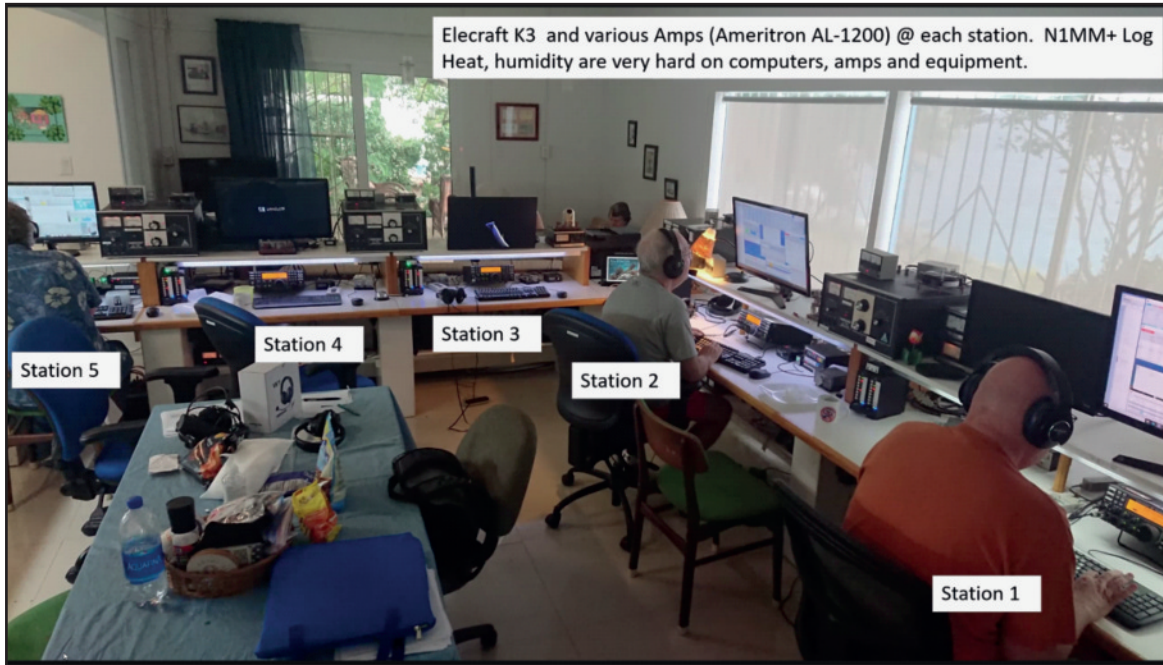
The contest strategy of the PJ2T contest station is not to chase QSOs but rather to take advantage of its' strategic location as well as being a rather rare DX station to eventually catch all the contacts and multipliers through

routine operation. Also these operators are rather "focused" operating in four hour shifts resulting in combined QSO rates as high as 1000 per hour when the bands are open. This style of operating also requires an environment with good food and air conditioning to help keep operators going.

The organization supporting the operation of PJ2T is the Caribbean Contest Consortium or the CCC (www.pj2t.org) which was founded in 1995 by Geoffrey Howard (W0CG – see his page on

keep corrosion from taking hold of both the indoor and outdoor equipment. Other than the financial and physical maintenance requirements, tropical contest stations often don't stay in

With self-improvement as a an operator being one of the goals of operating at PJ2T, Rob also noted that he seeks to improve his typing skills to avoid losing out on points due to typos; he will also be



working on his familiarity with the Elecraft K3 radios and the use of both VFOs, filter selection etc., see photo; explore further the capabilities of the N1MM+ logging software, and gain a better understanding of the antenna switching system at PJ2T (see photo).



PJ2T can split power and simultaneously beam toward Europe and the U.S. using a 403A high power triplexer and Stack Match boxes



**TEAM PJ2T
2021 CQ WW DX
CW M/M**

Class: **M/M HP**
QTH: Curacao
Operating Time (hrs): 48
Location: South America

Summary: [Compare Scores](#)

| Band | QSOs | Zones | Countries |
|---------------|--------------|------------|------------|
| 160: | 796 | 21 | 72 |
| 80: | 1772 | 27 | 91 |
| 40: | 3202 | 32 | 110 |
| 20: | 3072 | 36 | 111 |
| 15: | 3252 | 34 | 111 |
| 10: | 1199 | 26 | 77 |
| Total: | 13293 | 176 | 572 |

Total Score 29,265,500 Unofficial #2 World – BEFORE Log Check



Ops: L to R Y08WW K08SCA VE4GV AC6ZM N6AA K1EP W0CG NG7M WI9WI



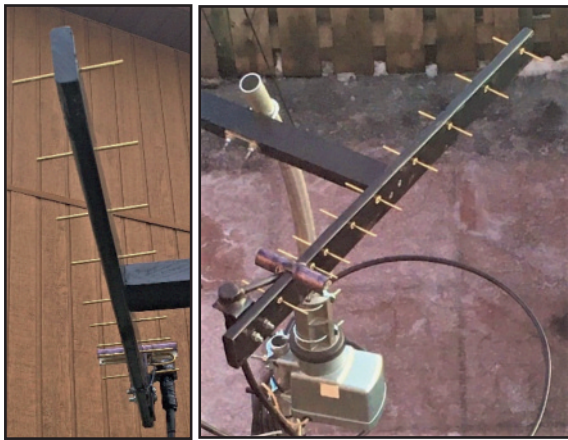
*Rob Kaufmann VE4GV
Winnipeg, MB
Endoexperience@gmail.com*

Summarized by Alan, VA3IAH

23 CM Yagi: Weekend Home Brew

(Shaun, VE3VHU)

This article summarises my weekend build of a 10 element Yagi for the 23 CM amateur band on February 05, 2022. Its creation for the Rambler was spurred on by a few requests during the weekly Tuesday Ottawa Valley Upper Frequencies Single Sideband Net. Rambler’s Editor, Alan Hotte, VA3IAH email request was the deciding factor in sharing my experience. Thank you, Alan.



The desire to build the antenna was 2-fold. The first was to confirm my new IC-9700’s operations in the 23 CM band and second to gain the experience of UHF antenna construction. Having already completed HF and VHF antenna builds, I found the biggest difference overall was having to measure the build in meticulous

millimetres.

My research for a 23 CM antenna led me to the IW5EDI web page at: <http://www.iw5edi.com/ham-radio/3854/cheap-yagi-antennas->

for-vhf-uhf. In seeing it was computer designed, easily replicated, and simply built the decision to create it was easy for me.

Given Canadian weather combined with local antenna restrictions, I included a few modifications to IW5EDI’s antenna design. A chassis N connector was installed prior to a direct coaxial soldered connection (RG-213) to the Driven Element (DE) recommended by IW5EDI. For exact lengths and spacing measurements for Reflector (REF), Driven (DE) and eight Director (D) elements, please see the table above. Lastly, PVC was installed on top of the



N connector and DE to aid in all weather operations.

All element centers were placed on the beam’s center. The RG-213

soldered feed point to the DE was placed as close to the wooden beam as possible. As a result, the coaxial is solder 10.3 mm left of the DE center. (See photos on next page)

IW5EDI’s construction material recommendation was “common materials”. This spurred me on to use whatever I had on hand to keep the cost down. Supplies used were a boom of 0.75” X 2.5” spruce wood, elements of flux coated



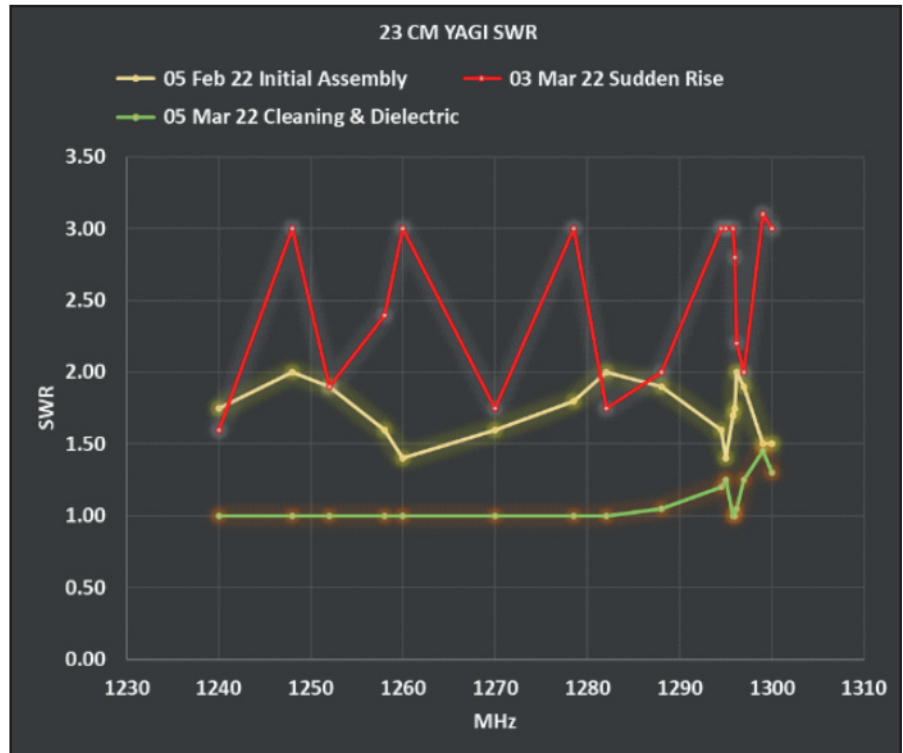
bronze brazing rods, and a modified double wide corner brace to mount the chassis N connector.

As usual, SWR was a prime concern throughout the construction process. Employing a digital caliper helped tremendously in meeting the required dimensions for element lengths and positioning. This resulted in attaining a great initial SWR (chart date 05 Feb 22). There was a sudden rise in SWR after 4 weeks of operating (chart date 03 Mar 22). A cleaning of the bronze elements and resoldering connections gave no SWR change. Falling back on the preservation of vehicle electrical connections, I applied a thin coating of dielectric grease for the elements. The resulting drop was surprising (chart date 05 Mar 22) with the lowest band average

| 1296 MHz | | REF | DE | D1 | D2 | D3 | D4 | D5 | D6 | D7 | D8 |
|----------|---------|--------|-------|-------|-------|--------|--------|--------|--------|--------|-------|
| 10 | Length | 109.22 | 101.6 | 99.06 | 96.52 | 95.25 | 95.25 | 92.71 | 91.44 | 91.44 | 88.9 |
| Element | Spacing | 0.00 | 43.18 | 71.12 | 101.6 | 162.56 | 221.98 | 309.88 | 396.24 | 490.22 | 584.2 |



SWR reading experienced with the antenna being 1.09:1.



Overall, the experiences that came with the 23 CM Yagi build have become very memorable. It's required level of accuracy during the build was very high. As an end result, I found a great pride in

creating it and a reward of low SWR.

73,
Shaun, VE3VHU

1.2 kW HF Amplifier Build – PART 1 – Introduction and Bill of Material (BOM)

(Marc, VE3BOE)

Initially licensed in 2016, and since receiving my advanced certificate a little over a year ago, I have been building various simple amateur radio related kits to add to my shack. For 2022, I have decided to attempt a kit build of a 1.2 kW solid state HF amplifier.

Before starting on the amplifier build, I was asked to provide a brief overview of my shack.

I live in a rural residential neighbourhood in Metcalfe. The houses in my neighbourhood are

all built on 3 acre lots and all have tall, mature, thick, dense evergreen growth. My shack is located approximately 600' from the road and 400' behind my house completely hidden from sight. The closest home is about 500' from my tower. My neighbours are not aware that I have a tower and antennas back there.



My station is located on the second floor on my workshop, behind the gable windows.



The mast at the top of my tower is 20' tall. Each antenna is mounted four feet apart. The first antenna is a Hygain Explorer 14, located about 1 foot up from the tower top bearing, then four feet up to a Cushcraft 5 element A505S for 6m, then another four feet up to a

Cushcraft 13B2 13 element for 2m, then finally an additional four feet up to a Comet GP6 for 2m and 70cm. I also have an Alpha Delta DX-A 1/4 wave sloping dipole on the tower for 40m, 80m, and 160m.

For those of you that are interested, I have three YouTube videos that show my tower build in detail. Here is the link for Part 1 : <https://youtu.be/gS0oG9oUT3Y>.

My main motivation for building this amplifier was for the enjoyment of indoor winter kit building and gaining firsthand experience on how amplifiers are constructed and how they operate. I really need to increase my knowledge of electronics. Selecting a solid state kit was to ensure that I would not be dealing with lethal voltages.

Now back to the amplifier kit build.

Being a mechanical engineer, electronics and circuit design is not in my educational or professional background. I often feel way out of my league when club members discuss radio topics that go beyond the very basics. Not too many mechanical engineers in this hobby I guess, go figure. I understand the basics, and I know how to solder well enough to get me into trouble. Having said that, my build is dedicated to “us less knowledgeable” and will be based solely on interconnecting purchased, pre-designed, and pre-assembled kit boards within an enclosure. I will not be designing or constructing any original circuitry. I don’t know how.

I have decided to share my build attempt to perhaps motivate and interest other amateurs with a similar, less technical background like mine.

On a side note, before this build, I spent some “training” time building and experimenting with a cheap, throw-away Amazon 70W HF amplifier kit. A low pass filter kit was also part of the training. Four pairs of cooked transistors later and I had gained some very important lessons (keep bias voltage within spec, keep SWR low, make certain correct BPF is selected, keep input power LOW, etc.) that would hopefully be of value in this build. If I mess up like this on this build it will cost \$300.00 per lesson. Fingers crossed.

Here we go.

The build is based primarily on components purchased from [DX World Electronics](#). I invite you to browse their site to see the amplifier in its final state. I have also sourced components from Mouser, Digikey, etc. I make every effort to source parts from reputable countries and companies that use and sell quality components from original sources. This is important to me both ethically and technically. This is not intended to be a throw away experimenter’s kit build. I already did that.

Here is my initial material list.

My initial parts order from DX World consisted of :

1. 4x MRF300 LDMOS 1200W HF/6m LINEAR AMPLIFIER 160-6m BOARD

2. HF LPF FILTERS 160-6m 1500W
3. Protection board with dual tandem match all-in-one
4. RX/TX & ANTENNA SWITCHING 1-80MHz 1500W
5. LCD Display Board
6. ICOM Band Decoder Board
7. RF delay circuit

From Mouser:

1. 2 x NXP brand MRF300AN LDMOS RF Transistors (NXP)
2. 2 X NXP brand MRF300BN LDMOS RF Transistors (NXP)

From Digikey:

1. Power Entry C20 receptacle and switch (Schurter Inc.)
2. RG-142 (Huber+Suhner)
3. RG-316 (Huber+Suhner)

From eBay:

1. 3000 Watt 48Vdc power Supply RSP-3000-48 (Mean Well)
2. 100 Watt 50 ohm 10dB Hybrid Attenuator (RES-NET)

From Amazon:

1. 150 Watt 12Vdc power supply LRS-150-12 (Mean Well)

As I sourced all these components I got to work on the mechanical aspects of the project. I would need two cases (I wanted to separate the power supplies from the amplifier), adequate heat sinks, remote control panel, etc. I will report on progress with that in my next article.

Bye for now.

Marc, VE3BOE

Building a 2 band roll-up j-pole Antenna A Journey in Learning

(Harrie, VE3HYS
and Roger, VA3EGY)

As a new ham, one of your first radios is typically a VHF/ UHF Handheld (HT). But with just a short rubber duck antenna and usually only 5 watts of RF power, it can be difficult or even impossible to work the local repeaters from your home QTH. A low cost solution is a roll-up J-pole antenna. It's omnidirectional and does not require a ground plane. You can hang it from your roof eaves or a tree branch or push it up on a mast to get enough height for a clear shot at local repeaters. You can also throw it in your suitcase if you are travelling on vacation or in a backpack to make contacts while hiking or camping.

If you are in a hurry, you can buy a roll-up J-pole antenna from MFJ for around \$50.00 USD. But if you can source the parts, you can build one for about half the cost in a couple of hours.

The OVMRC published a plan for a Slim Jim Antenna in the January 2018 Rambler and sold kits for around \$25. Barry, VE3NA offered us enough feedline and BNC connectors to make 9 or 10 of these antennas. Additional sourcing was also required for 300 ohm twin-lead and heat shrink tubing required to protect the connections and gaps required for tuning.

Roger, VA3EGY mentioned building this antenna as a possible project on the New Hams Net one evening back in January to see what interest there was in such a project. At the time Dave,

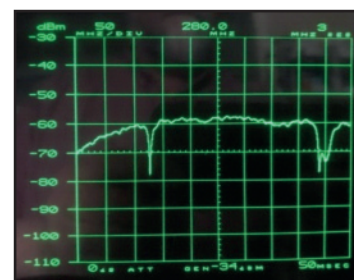
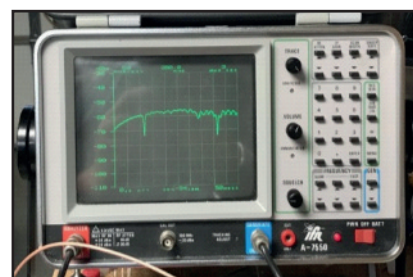
VE3BOW suggested that we consider a 2-band version (2M/70cm) of the j-pole antenna created by Ed Fong, W6IQN and which was written up in the March 2007 issue of QST Magazine. After reading the article, we thought...how hard can it be? It should be a piece of cake, right? We found positive reviews for this antenna design on eHam.net and with 300-ohm twin-lead provided by Mike, VA3TEC off we went to build antennas!

However, as it turned out the article was a little confusing, as it discusses both dual-band and single-band J-pole antennas and it's not always clear when each is being discussed. A major point that the author, Ed Fong, W6IQN made in the article was that any vertical antenna on 2 M will load on 70 cm. While this is true, an issue of concern is that the angle of radiation is higher on the third harmonic, in this case 70 cm, thus a redesign is required to get the energy closer to the horizon.

The changes in design amounted to essentially building a $\frac{1}{4}$ wave 2 M antenna with a $\frac{1}{2}$ wave 2 M antenna stuck on top. The $\frac{1}{2}$ wave 2 M antenna is going to be made up of a $\frac{1}{2}$ wave 70 cm plus a $\frac{1}{4}$ wave 70 cm shorted stub and then the last $\frac{1}{4}$ wave at 2 M.

As the QST article included measurements, we built an experimental antenna using the twin-lead from Mike, VA3TEC. When we swept it using an IFR A-7550 spectrum analyzer with tracking generator and directional coupler, we found the notches or resonance points to be about 15 MHz high on VHF and 25 MHz

high on UHF. We knew that there was more work to do!



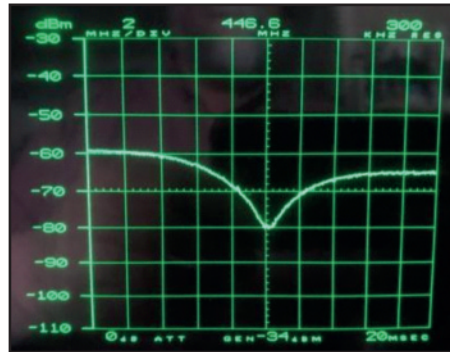
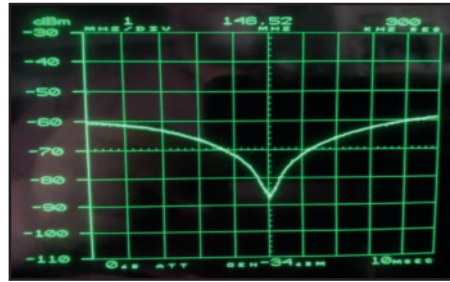
As we assumed our error was with the velocity factor we created a second antenna using the error percentage to correct our measurements. The second iteration got us into the ham bands but the notches weren't very deep. We really wanted to see at least a 17 dB dip to get down below 1.5:1 VSWR. We were close on the 70 cm band but never could get more than about 10 dB on 2 M. A key factor was that each manufacturer of 300 ohm twin-lead produces a product with a unique impedance (Z_0) and velocity factor (VF).

We tried moving the splices up and down taking a trial and error approach for a few hours without success. Harrie, VE3HYS remembered that he had an Aim 4170

antenna analyzer and brought it out. It only goes to 150 MHz, but it allowed us to take a known length of feedline and determine the Z_0 and the VF. When we measured the twin-lead provided by Mike, VE3TEC we got Z_0 of 213 ohms and VF of 74.6%. Some old twin-lead Harrie had gave a Z_0 of 289 ohms and a VF of 84.3%. The next thing was to carefully review the QST antenna article description again, several times; until we had managed to convert the antenna length into wavelengths. Once we had wavelengths it was easy, using the twin-lead with a Z_0 much closer to 300 ohms, we applied the VF, did the math and built the antenna.

But when Harrie swept the antenna again with the antenna analyzer and got 155 MHz and 469 MHz we were on our way back to the drawing board.

With more reading, we discovered that if the antenna is going to be contained in a plastic pipe you are good-to-go, but as a portable roll up version then you need to add 5% to the computed twin-lead lengths. What? How did we miss that? As luck would have it in the corner of the garage was a piece of ½" plastic conduit that the J-Pole slid into very nicely and moved our sweep down to the ham bands. We did the math between the frequencies where we had planned to be centered on and what we actually measured. We split the difference between the two bands and got a fudge factor of 5.75%. Some quick math for a new set of cuts and a very nice sweep appeared on the analyzer.



It's an easy antenna to make as long as you know all the parameters! We did speak with Ed Fong, W6IQN in the middle of this challenging project and he confirmed that different manufacturer's twin-lead have different VFs, so he only buys from a single source to ensure consistency. The takeaway here is to make sure you know all the parameters of the material you are working with.

Given all of these challenges we decided to build these antennas for the folks who wanted them rather than have our fellow hams upset if they could not make it work once they had assembled the kit. But, if you really want to make one of these antennas, with your own source of twin-lead, you are going to need to know the velocity factor of your twin-lead and coax for the stub to determine your lengths and cuts. We would like to extend a special thanks to Barry, VE3NA for assembling the RG-316A Feedline with the BNC male

connectors for all the antennas we built.

Assembly Instructions

The first decision you will want to make is whether this antenna will be put in a plastic pipe or be the roll-up variety. Then you'll want to confirm the VF value. All lengths will need to be adjusted by the VF value and if it is to be a roll-up remember to add 5% to each twin-lead calculation. For an overview of the various dimensions involved, please see the diagram for the dual-band antenna in Ed Fong's, W6IQN QST article in the link below.

Start the assembly by stripping a bit of wire at the bottom to create a short.



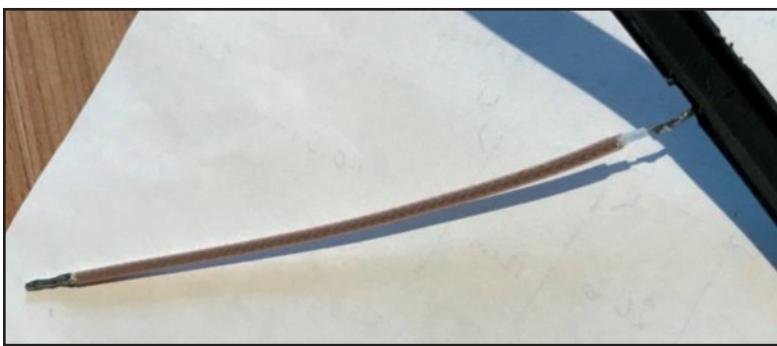
From this short, measure up 1.25" and shave a ¼" inch of insulation off the conductors with this as the centre point. This will be the feed point where you connect the coax to the HT. Also from the short you need to measure a ¼ wave at your VHF frequency of choice. You will cut the top of the notch on one conductor at this length. Come down a ¼" and cut the bottom of the notch. For better strength, we found it wiser to try and just shave the insulation carefully off the wire so you could leave as much

insulation between the wires as possible.

Eventually you will put a bit of heat shrink over each notch to help support things. From the top of this notch you are going up a 1/2 wave at your UHF frequency. You will cut the bottom of the notch on both sides of the twin lead this time. Warning! Before you cut the wire this time on the side opposite the first notch you made you will want to cut the wire at the top of the notch



but keep the bottom end attached so you can solder the coax shorting stub centre conductor to the antenna.



Next you need to create your UHF shorting stub,

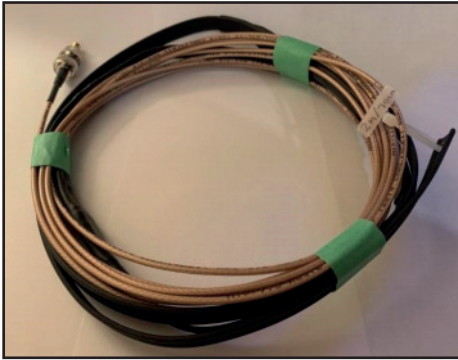


don't forget to factor in VF for the coax cable length. The next set of notches is a bit tricky. This distance is really all that is needed to be able to connect the coax stub to the upper length of the twin-lead. The upper part of the coax has the shield connected to the centre conductor. Pick your distance and make sure you leave the wire from the twin-lead available to connect to the top portion of the antenna. From the top of the coax stub, notch to the top of the antenna is 1/4 wave at VHF so now you know where to trim the top of the antenna.

All notches are 1/4" wide. Make sure that you account for the VF and don't forget the 5% extra calculations if you are not putting this in a plastic pipe. Drill a hole in the insulation at the top so you can hang it in a tree and away you go.

73,
Harrie, VE3HYS and
Roger, VA3EGY





Links of interest:

Rambler January 2018, Plans for a roll-up J-pole antenna

https://www.ovmrc.on.ca/Rambler/OVMRC_Slim_Jim_Antenna_rev_2.1.pdf

New Hams Ottawa group www.hambone.ca/nho

QST Magazine in March 2007 The DBJ-2: A Portable VHF-UHF Roll-Up J-pole Antenna for ARES <https://manualzz.com/doc/14297076/qst-mar-2007>

eHam Review

Dual band 2-440 portable J-pole antenna with 8-10 db gain for ARES, RACES and HT use up to 50 watts

<https://www.eham.net/reviews/view-product?id=12979>

ARISS Thank You

The OVMRC received a letter of recognition for the donation the club made to the Amateur Radio on the International Space Station program. See the letter to the right and learn more about the ARISS program at ariss-usa.org.

Amateur Radio on the International Space Station, Inc.
909 Metfield Road
Towson, Maryland 21286



March 23, 2022

Ottawa Valley Mobile Radio Club
c/o Nicole Boivin, VE3GIQ
1327 Caserta Place
Orleans ON K4A 3C1 Canada

Dear Ottawa Valley Mobile Radio Club Members,

Thank you so much for your great generosity with the \$225.00 contribution on March 16, 2022 to ARISS, the Amateur Radio on the International Space Station program. We will put your gift to work soon and recall that you've generously donated in a previous year! You're knowledgeable on how your gift helps ARISS and Amateur Radio to impact the lives of thousands of students, educators, parents, and cities each year. Also, we hope you enjoy ARISS SSTV, ARISS packet, and ARISS cross band repeater QSOs.

ARISS gives students and life-long learners the chance to be inspired by, and engaged in, STEM (science, technology, engineering, mathematics) activities tied to space communications and research, amateur radio, and wireless technologies. You are assisting ARISS in providing a once in a lifetime opportunity for youth to be part of a personal conversation with an astronaut on the ISS, using amateur radio, inspiring youth for opportunities in STEM careers.

It is fine people like you who stand with ARISS and guarantee the program's survival—you are greatly appreciated. The ARISS Team thanks you for helping ensure ARISS continues with education operations and develops equipment enhancements and systems for the future. If it is useful for tax purposes, ARISS-USA is a 501(c)(3) organization and your donation is tax deductible to the extent allowed by law.

Sincerely,

Frank Bauer, KA3HDO
ARISS-USA Executive Director

Quotes...

Teacher: "As the ISS moved and ham communication ended, we knew we'd been part of the most extraordinary experience, one that can galvanize students to explore the boundaries of human endeavor, perhaps even joining a base on the Moon or Mars someday."

High school girl: "While seated in the audience I observed the technicality of the amateur radio set-up to talk with the astronaut. I am so grateful for everyone who helped with the ham radio connection."

www.ariss.org

www.ariss-usa.org

AllStarLink: A digital mode with a difference

(Alan, VA3IAH)

Why an interest in AllStarLinks?

My interest in AllStarLinks (ASL) was spurred along by a presentation at the January 12th OARC meeting by Adrian, VE7NZ and Scott, VA7SL; Norm, VE3LC's excellent summary of his ongoing exploration of ASL builds at the March OVMRC meeting, as well as several hours of discussion with Dave, VE3BOW on what is going on in the background with the software application that makes ASL functioning possible.

I was also encouraged to undertake an ASL project by the many different build options for constructing a node and the global reach of ASL. Some of these build options involve radios and other do not, but among those that do, the radio requirements are minimal requiring only an FM analog radio with a DTMF key pad.

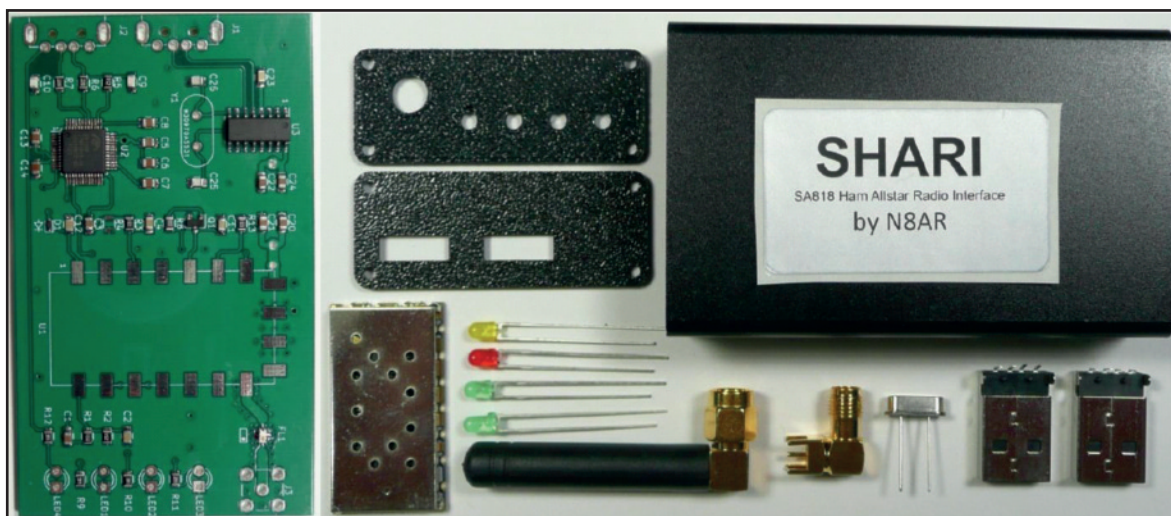
The radio-based kit I chose was a SHARI node (SA818 Ham Allstar Radio Interface) kit by N8AR, which is a Raspberry Pi hosted Allstar node using a NiceRF SA818 embedded UHF (420 – 450 MHz) radio module. I chose the UHF module to run on a Raspberry Pi 3b+, which I wasn't able to buy locally, due to supply-chain shortages, but was able to acquire a spare Pi 3b+ from Phil. VE3HOA.

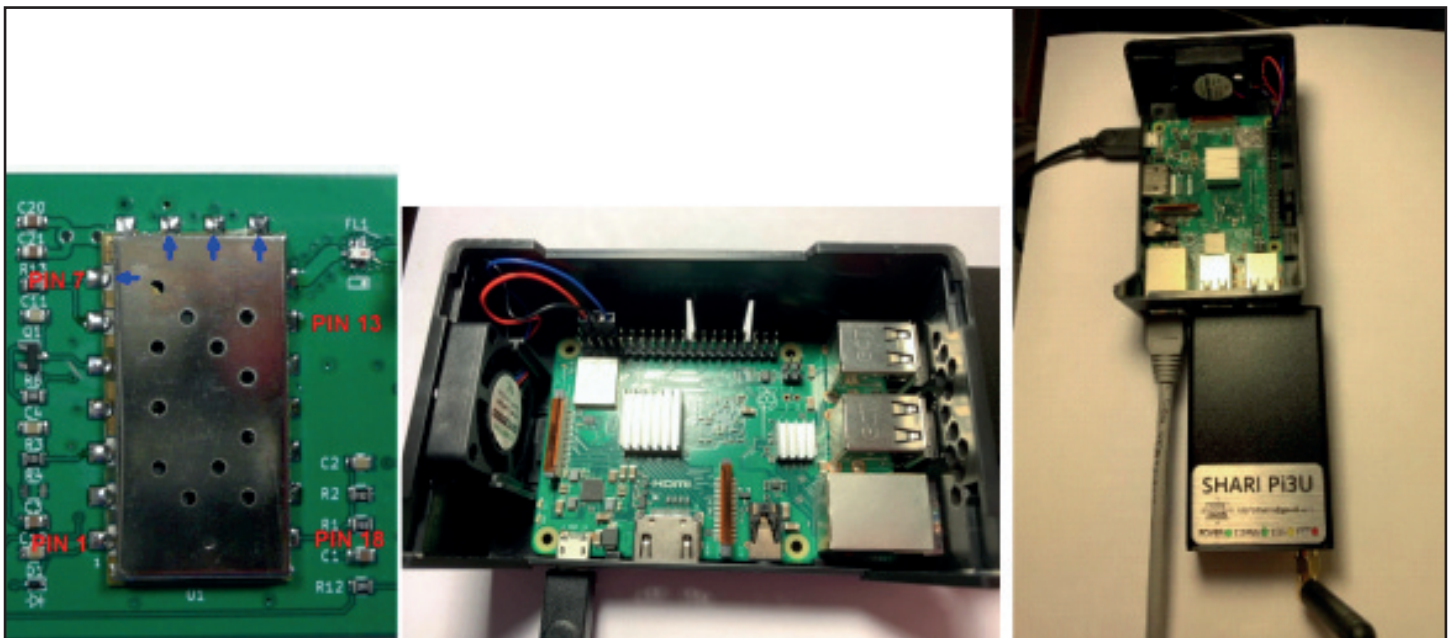
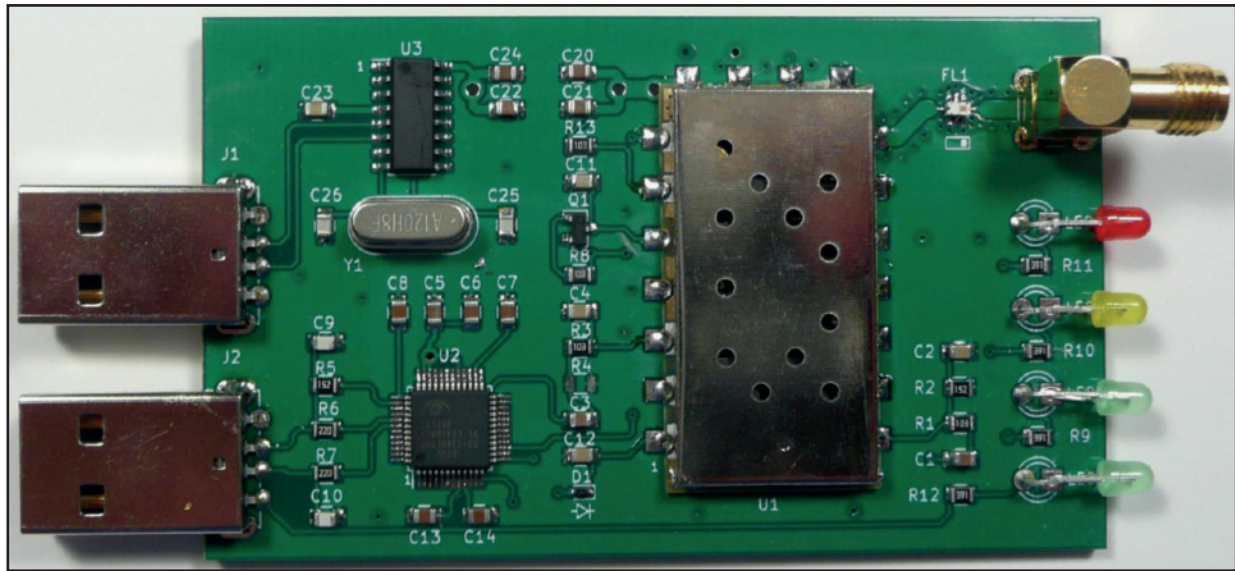
With the acquisitions completed, I applied for my own node number and received 56662, to join the nearly 25 thousand other user with nodes on the system. Once again, just as sourcing the Raspberry pi was a challenge, so was the sourcing of parts by N8AR for the SHARI node kit (the Pi3U), which as a result took about five weeks to arrive. My winter project became a spring project!

The build: The SHARI node kit I received looked like the pictures below and was guided by detailed step-by-step guides for its construction and configuration.

The project difficulty was rated as medium as the embedded radio module board is mounted on the main SHARI node board by soldering the castellated holes (or literally half-holes) of the radio module board to large solder pads of the main board while avoiding the application of too much solder which would potentially ground out the solder pads on the main board with the radio module shield.

The remaining soldering was less tricky involving the soldering of 8 through-hole components (see red ovals in the photo below) with surface mount modules already attached to the board. There is a great link to a "spark-fun" video (see below in references) on how to approach the soldering of castellated holes to the node main board. In the close up photo below of the radio module the blue arrows indicate neutrals (where grounding wouldn't matter) as well as the anchor points starting with #13. All of the other solder pads required careful soldering.





The configuration of the ASL node: There is a very good step-by-step 20 page reference guide that walks users through configuring the Asterisk application, the open source telephony application that makes ASL possible. This was tackled over several evenings and I had to enlist the help of Dave, VE3BOW to provide assistance with some of the ASL background knowledge

and some router port-forwarding troubleshooting.

Using the ASL node: Some of the ASL nets available through the Canada Hub (see reference below) included the Absolute Tech Net (www.absolutetech.org) and the Trans-Canada Net, among others. If you want to check out these Canada Hub Nets before you undertake an ASL project, the

Canada Hub can also be reached by EchoLink through VE7NZ-L. There are often many cross-mode digital bridges into ASL hubs, which is the case for the DODROPIN hub (<http://www.dodropin.net/>) which also offers a broad range of nets each day throughout the week.

What might be my next ASL project? Having recently acquires

a CISCO IP Phone model 303, my next exploration will involve setting up Hamshack Hotline and possibly connecting with some other local PBX (Private Branch Exchange) networks on the system.



What is the larger potential for ASL locally for emergency management communications?

With a series of existing emergency management repeaters in the Ottawa area currently maintained by the City of Ottawa, there may be an opportunity to enhance local emergency management communication with the flexibility of an ASL hub. There is a great local example of a functioning ASL emergency communications hub that VE2REH, the Association des Radioamateurs Indépendants, has established in Gatineau. Another resource is the Amateur Radio Emergency Data Network or ARDN and an example of a grant application to establish a community hub is also reference below. If you are interested in exploring the application of an ASL hub for emergency manage-

ment communications in Ottawa, please be in contact with Dave, VE3BOW or Alan, VE3IAH.

73,
Alan, VA3IAH

REFERENCE LINKS:

AllStarLinks (ASL)
<https://www.allstarlink.org/>

VE2REH
<https://ve2reh.com/wp/node-allstar/>

Canada Hub
<http://thecanadahub.ca/>

Hamshack Hotline (HH)
<https://hamshackhotline.com/>

AMSAT recognition of OVMRC donation

The Radio Amateur Satellite Corporation (as AMSAT is officially known – see <https://www.amsat.org/>) has responded to OVMRC’s donation with recognition of the club and sharing several mementos of appreciation for our club’s ongoing support.



OVMRC Net Activity, Check-ins for March 2022.

Prepared by: Hugo Kneve VE3KTN

OVMRC 2 Metre Net: VE3OCE 146.880- 136.5 Hz. tone, Thursdays 8 p.m. local.

| March 3 | March 10 | March 17 | March 24 | March 31 |
|----------------|----------------|----------------|----------------|----------------|
| VE3KTN – NCS | VE3KTN – NCS | VE3KTN – NCS | VE3KTN – NCS | VE3KTN – NCS |
| New & Visitors | New & Visitors | New & Visitors | New & Visitors | New & Visitors |
| | | | Wayne - VE3QO | |
| Check-ins | Check-ins | Check-ins | Check-ins | Check-ins |
| VE3NA | VE3RUU | VE3RUU | VE3RUU | VE3RUU |
| VE3LC | VE3NPO | VE3XEM | VE3ZZU | VA3AL |
| VA3IAH | VE3ZZU | VE3ZZU | VE3OTW | VE3ZZU |
| VA3EGY | VE3NA | VE3OTW | VE3NA | VE3NPO |
| VA3HBL | VE3LC | VE3NA | VE3LC | VE3NA |
| VE3ZZU | VE3LBU | VE3LC | VE3LBU | VE3LC |
| VE3EUS | VA3IAH | VE3LBU | VA3IAH | VE3LBU |
| VE3VHU | VA3HBL | VA3IAH | VA2OJD | VA3IAH |
| VE3VIG | VE3VIG | VA2OJD | VE3KAE | VE3KAE |
| VA3EO | VE3EUS | VE3BOW | VA3AL | VE3BOE |
| VA3CSG | VE3KAE | VE3YY | VE3EUS | VE3YY |
| VA3GLB | VA2OJD | VE3VIG | VE3VIG | VE3OTW |
| VE3KAE | VE3OTW | VE3OKD | VE3YY | VE3VHU |
| VE3KJQ | VE3BOE | VA3EO | VE3KJQ | VA3GLB |
| VE3BOE | VA3GLB | VA3AL | VE3BOE | VE3KJQ |
| VA2OJD | VA3AL | VE3YPD | VE3ZOV | |
| VE3RXN | VA3HJR | | VA3GLB | |
| | VE3KJQ | | VE3TXB | |
| | VE3VHU | | | |
| | VE3XEM | | | |
| | VE3BOW | | | |

OVMRC Pothole Net: 3760 kHz. LSB Sunday mornings at 10 a.m. local.

| March 6 SFI:120 A:27 | March 13 SFI:125 A:13 | March 20 SFI:94 A:5 | March 27 SFI:119 A:7 |
|-------------------------|--------------------------|------------------------|-------------------------|
| VE3XRA – NCS | VE3EJJ – NCS | VE3XRA – NCS | VE3EJJ – NCS |
| New & Visitors | New & Visitors | New & Visitors | New & Visitors |
| Check-ins | Check-ins | Check-ins | Check-ins |
| VE3QN | VE3QN | VE3EJJ | VA3QV |
| VE3BAE | VE3LC | VE3QN | VE3LC |
| VE3CWM | VA2EV | VE3KTN | VE3QN |
| VE3LC | VA3PSI | VA2EV | VA3PSI |
| VE3EJJ | VA3EO | VA3EO | VE3NPO |
| VE3NPO | VE3XRA | VA3BGO | VE3BOW |
| VA3EO | VE3KTN | VE3NPO | VE3EKN |
| VA3BGO | VA3BGO | VA3PSI | VE3SYZ |
| VE3YY | VE3SYZ | VE3LC | VE3YY |
| VE3KTN | VE3NPO | | VE3KTN |
| VA3PSI | | | VE3XRA |
| | | | VE3CWM |

The “SFI” and “A” values are the Solar Flux Index and Geomagnetic A-Index respectively as reported on the N0NBH Space Weather web site: <https://www.hamqsl.com/solar.html>. Values are taken within 30 minutes prior to net start time.

For DMR Radios, Hotspots, Antennas, QRP HF Radios and More



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