

## Report to YARA

### Yukon Winter Communications Practice and Joint YSAR and YARA Exercise In Conjunction with Winter Field Day Jan 28-29, 2017



Photo Credits: VY1JY, John

#### Executive Summary:

On Saturday, January 28, 2017, and Sunday, January 29, the Yukon Amateur Radio Association (YARA) and the Yukon Search and Rescue (YSAR) conducted a joint winter communications exercise in conjunction with an international Winter Field Day event. A HUB was set up at the Grey Mountain Lookup parking lot with the YSAR mobile command centre with support with YARA members' mobile and tent VHF and HF operations. There were also VHF and HF REMOTE operations.

This was the first YARA and YSAR joint exercise and participants felt that this was a positive experience. There were 19 participants: 4 YSAR members, 12 YARA members, and 3 non-members. Some participants were "wearing both YSAR and YARA hats". Twelve participants used VHF communications and 7 participants used HF communications (some were involved with both). Simplex VHF and DSTAR tests were done in the Whitehorse area and 9 contacts were made on HF from two locations.

Many lessons were learned during the two days about use of equipment, about communications under mild winter operating conditions and about gaps in planning. This will help improve the planning and operations of future events.

## Planning and Preparation:

Note: Some radio definitions for readers not familiar with the terminology

- Callsign – a group of letters and numbers provided by a country’s radio licencing authority that identifies a radio operator and station. e.g. VY1RM identifies the operator as Ron McFadyen in Yukon.
- QSO – is a contact and exchange of information between radio operators.
- Repeater – radio technology which re-transmits radio signals and allows QSOs over long distance via radio repeaters on high towers, mountain tops or in satellites.
- VHF – very high frequency – a section of the radio spectrum frequency where communications are generally conducted between radio operators in-line-of-site (up about 10 km) or through repeaters (e.g. throughout the whole Yukon).
- HF – high frequency - a section of the radio spectrum where communications between operators can be line-of-site and, more likely, by radio waves being bounced off the ionosphere which enable long-distance communications around the globe.
- DSTAR – a new mode of radio communications where voice and data involve digital technology, allowing secure transmission of voice, documents and images with hand held, mobile and base station radios directly, through repeaters and via the Internet.
- Field-Day – an event where radio operators, family and friends get together to practice skills, test equipment and socialize. Some events are international and involve contests where operators to try to make as many QSOs as possible in a defined time-period.

### Planning:

- The concept of a “mini-field-day” started in September 2016 and continued to evolve right up to the time the operation was launched and included planning for a joint YSAR-YARA exercise, participation in Winter Field Day, and testing of YARA communications.
- September, 2016 – YARA passed a motion, *“That VY1YU (Yuuri) be authorized to organize a YARA mini field day.”*
- October 2016 -January 2017 - Small group discussion continued after the A&W breakfast with VY1YU. VY1MAP, VY1RM, VY1GP, VY1GK, VY1BG.
- November ,2106 – VY1YU prepared a draft MOU to operate “mini-field day” exercise in City of Whitehorse park areas.
- November 2016 – VY1YU & VY1GP prepared a draft for YARA Handbook re mini-field day.
- January 7, 2017 YARA passed a motion, that *“YARA approve participation in the Winter Field Day event.”*
- January 26, 2017 – VY1MAP prepared Task # form and appendices for Task #.
- There was a final planning session at the Yukon Inn 3 days before the event: VY1MAP, VY1YU, VY1GP, and VY1JY.

### Preparation:

- Several weeks prior to the event:
  - Information was provided to YARA members via YARA Reflector.
  - VY1MAP arranged for YSAR MCP (Mobile Command Post) trailer to be made available for this exercise.
  - VY1GP tested HF end-fed and portable HF vertical, HT and HF radio and made one radio check with the mobile VHF in VY1GP Suburban.
  - VY1GP set up a small winter tent with solid ground anchors where stakes could not be used.
  - VY1KX tested QRP HF radio and antenna.
  - VY1MK had moved home based station and tested all equipment.
- One week prior to the event:
  - VY1MAP obtained task # from EMO for this and similar exercises.
  - Information on the Saturday/Sunday event was distributed via YARA reflector.
  - VY1GP readied his GMC Suburban and utility trailer.
  - VY1GP started loading winter-gear into utility trailer and Suburban.
  - VY1GP tested YARA IC-735 with MFJ autotuner and home-based antennas.
  - VY1GP tested YARA generator with a battery changer and 12 battery, and a ac-dc power supply.
  - VY1GP took down a home-based end-fed antenna to use on the exercise.
  - VY1GP prepared Net Control Guidelines and data collection sheets for the REMOTE Net Control Operator and for use at the HUB and met with VY1RF, who volunteered to be a home-based Net Control Operator.

### **Communications During Preparations:**

- YARA members discussed at monthly business meetings.
- Several interested YARA members met at the EMO room after A&W breakfasts.
- VY1MAP, VY1YU, and VY1GP exchanged email direct between meetings.
- VY1GP met directly with VY1RF and provided Net Operator Guidelines and Roster.
- The YARA email reflector was used to provide information to YARA:
  - Months prior – various short items on concept and links to Winter Field Day and Rules
  - During week prior to event two draft documents “Tentative Participants and Equipment List” and “Activity Plan” (2-day schedule)
  - 24 hours before the event VY1YU and VY1GP emailed updated details of the event and schedule, and requested an indication from members who planned to participate. Four people responded.

## Locations and Equipment:

**Note:** YARA equipment used: portable generator, IC-735 HF radio without a power cable, radios in EMO/YARA radio room. All other references in the report re YARA equipment are members' own radios, vehicles, and other support equipment.

### HUB at Grey Mountain Lookout Parking Lot

Saturday:

- The YSAR mobile command was located at the south end of parking lot with YSAR and YARA HT VHF radios
- A YARA tent and VY1GP Suburban mobile were located about 100 meters north of YSAR command with VHF HT and mobile, HF radio and Buddipole antenna, HF mobile and portable vertical. A CW paddle and key were available.

Sunday:

- VY1GP Suburban mobile with end-fed sloper was located at the south end of the parking lot. It was set up with VHF and HF radios, and a laptop for SSB, CW, & JT65.
- The YSAR mobile command was located about 150 north of the VY1GP Suburban.

### REMOTE on Range Road (VY1RF)

- A home base station was set up for VHF HT/base radios, DSTAR HT and HF base.

### REMOTE on Mayo Rd (VYKX, VY1IRM, and VY1BG)

- On Saturday, there was a Winter Field Day contest HF QRP setup with FT-817 battery powered radio, a home brew 20 m 1/2 wave end-fed vertical, and Buddipole and with VHF radios.
- There was a tarp shelter for protection.

### REMOTE EMO/YARA (VY1AK)

- At the EMO building, there is a full base set-up for VHF and HF operations

### REMOTE Home Station in Riverdale (VY1RM)

- VY1RM had a full base set-up for VHF, HF, and DTAR operations
- HT portable

### REMOTE Home Station in Crestview (VY1MK)

- VYMK had a full base set-up for VHF, HF, and DSTAR operations.
- He also had an HT portable and mobile in his vehicle.

### REMOTE mobiles/portable YARA (VY1GK, VY1MB, VY1DW)

- Vehicles with mobiles and HT travelled to various locations to test transmissions from HUB on Grey Mountain site and YARA net control operation

## **Participants: 19 Total**

YSAR members: 4

YARA members: 12

Non-members: 3

VHF participants (some wore two hats): 12

HF participants: 7

### Initial Confirmation: 9 participants and 2 observers:

2 YSAR members at HUB-YSAR command VHF,

1 YSAR member on YSAR REMOTE mobile,

1 YARA member at HUB - tent HF & VHF HT,

1 YARA member at HUB mobile VHF & HF,

1 YARA member at VHF & HF REMOTE at 1 VHF&HF REMOTE at Range Road (YARA net control operator),

3 YARA members at REMOTE Mayo Rd VHF & HF QRP

VY1MAP – and one other YSAR would co-ordinate YSAR communication and bring YSAR Mobile Command Centre at the Grey Mountain HUB

VY1JY – would observe and participate where required at the Grey Mountain HUB, also a YSAR member

VY1RF – would operate as YARA Net Control from home on Range Road

VY1YU – would set up an HF Buddipole and use the YARA IC-735

VY1GP – would bring a tent, winter gear, various support equipment, VHF mobile and an HF rig in VY1GP Suburban, provide support, and exchange information with the YARA REMOTE Net Control Operator

VY1MK – would operate from home and observe some Saturday activities

VY1KX, VY1BG, VY1IRM – would set up an HF QRP and VHF operation on the Mayo Road

VY1GK – would observe for a couple of hours Saturday

VY1MB – would observe on Sunday

### Additional Participants: 8 participants joined later

In addition to the above previous confirmations, several YARA members joined the exercise once it had started

#### HUB

- VY1JY – worked at the HUB and mobiles REMOTE locations during operating hours Saturday and Sunday with both YSAR and YARA VHF REMOTE stations checking on repeaters and simplex
- VY1GK – helped at the HUB Saturday, setting up tent, Buddipole, and YARA HT
- VY1MK – set up an HT radio in YSAR mobile command trailer and made calls to REMOTE stations
- YARA student, Michael Thessel, helped with setting up and taking down the tent and the station in the tent

- Non-member, Chris Geshev, helped Saturday in the setting up YARA tent and antenna
- Non-member, Michael Mark, helped Sunday in the dismantling and packing up YARA equipment

### REMOTE stations

- Several YSAR members helped with checking InterOp REMOTE locations on Saturday and Sunday.
- The YSAR LARR (Low Angle Rope Rescue) team from Haines Jct checked in during their exercise Saturday on MRS.
- A YSAR member from Carmacks checked in Sunday on MRS. The YSAR LARR team from Whitehorse checked in during their exercise Sunday on InterOp.
- VY1AK – checked from YARA/EMO and REMOTE locations, Saturday and Sunday
- VY1RM – checked from REMOTE home station Saturday and Sunday
- VY1MB, VY1DW, and VY1MK – helped with checking YARA mobile REMOTE locations Sunday

### **Observations:**

- The planning sessions with small meetings and email generally worked well.
- At the last planning session, the specific roles of YARA volunteers was not clearly defined and it was not made clear in the communications on the Reflector that participants needed to sign-in at the HUB or communicate via radio if they were operating from REMOTE locations.
- VY1MAP prepared an excellent Task # form and appendices.
- During prep period and testing of YARA generator the DC adapter/cable was missing.
- VY1GP arrived late at the A&W rendezvous because provisions and equipment were still being loaded in the utility trailer early Saturday morning.
- There were initially insufficient YARA volunteers at the YSAR mobile command HUB and roving REMOTES to conduct systematic VHF radio checks with YARA equipment.
- The YSAR MCP trailer is equipped to accommodate 110V and 12V power and antenna, however the equipment brought in did not have an adapter (cigarette lighter) to use the universal 12V outlet supplied. In hindsight, a power cable in the portable repeater could have been used as it has a cigarette lighter plug on one end and alligator clips on the other.
- The antenna used in the YSAR mobile command is from the digital radio. The problem with that is the coax is just long enough to reach each radio it is meant to serve.
- The YARA tent shelter proved adequate protection with high wind at the temperatures around 0 degrees. The flopping sound in the wind made it difficult to hear the HT and HF radios.
- Y1YU's Buddipole coax had a short, and replacement coax seemed to work OK.

- The Buddipole set up provided weak but adequate HF QSO with YARA Net Control on Range Road.
- VY1GP spent most of the time in support roles and did not spend much time with either VHF or HF radios. There was no formal exchange of Net Roster Information via radio communications during the exercise on Saturday and Sunday, but VY1GP met with VY1RF on Sunday evening and picked up the data sheets at that time.
- The VY1GP Suburban HF mobile/portable provided an HF 59 report with the YARA Net Control on the Range Road.
- An HF QSO between the HUB and the Mayo Rd. REMOTE was not attempted.
- There were 2 DSTAR local voice contacts with the YARA Net Control Operator: VY1RM in Riverdale and VY1MK at the Grey Mountain HUB.
- It was reported there seemed to be some cross-band interference between YARA repeater and the InterOp repeater/radio.
- CI1MAB/VY1MAB (VY1MK) made 7 HF DX contacts – 1 SSB (Oregon) and 6 JT65(US and Canada)
- VY1KX, VY1GB, and VY1IRM made 20 m CW DX contacts (Arizona, Oregon) and could have made more easily but spent some time experimenting with different antennas and radios instead.
- Mayo Rd antennas: VY1IRM's Buddipole and VY1KX's homemade 1/2 wave end-fed vertical. Contacts were on the end-fed but the Buddipole seemed to be working very well. At one point, it blew over and damaged one of the telescoping elements. The half wave vertical was supported by VY1KX's 12 m "Spiderpole".
- HF transmission with sloper end-fed antenna produced no interference on YSAR and YARA VHF radios in YSAR mobile command located about 300 meters north of the HF antenna.
- It was reported that VY1GP's Suburban mobile VHF produced a noticeable "pulsing" sound while transmitting from 21 Oak St, Porter Creek.
- It was reported that when either HF transmissions from VY1YU's HF or VY1GP's HF set up caused interference on YSAR VHF radios.
- There was no apparent HF interference with the end-fed sloper antenna.
- The YARA generator worked well but initially shut itself off until it was discovered that the vent on the fuel cap had not been opened. The sound was barely noticeable from within the Suburban
- For purposes of YARA, the YARA Net Control Operator from Range Road worked well on VHF and HF. The prepared data forms were not used, but data was prepared freehand.
- The YARA HF operations at the HUB, REMOTE Mayo Rd, and REMOTE Crestview locations logged contacts with SSB, CW, and JT65.
- Many YARA members commented on how much they enjoyed participating in the comms exercise
- Some photos were taken and posted on Facebook, other photos were stored in cameras, smartphones, and on memory sticks.

## **Safety Issues:**

- It was noted that in some cases a tie down was made to a vehicle or trailer. This should be discouraged, or if needs to be done, that the vehicle (or trailer hitch) be tagged to inform driver that something is connected to it.
- It was noted that there were many guy wires and tie downs which can pose tripping hazards. This should be well marked visually.

## **Conclusions:**

- The winter comms joint exercise helped YSAR and YARA meet some of their objectives.
- The exercise enabled YSAR to add more data to define range for The YSAR HT radio system.
- The exercise provided an opportunity to test equipment and radio links within greater Whitehorse with three YARA repeaters and with simplex.
- The exercise provided an opportunity to test equipment and radio links with the outside and confirmed this with several contacts made.
- Several shortcomings of the exercise were identified and provide opportunities for improvements for future joint exercises.
- The comms exercise seemed to be a good team-building and morale booster for YARA members.

## **Recommendations:**

- Identify specific YARA volunteers for specific roles for future exercises.
- Investigate the possibility of making changes to the YSAR mobile command trailer to accommodate a variety of YARA base, mobile and HT radios for power.
- Investigate the possibility of making changes to the YSAR mobile command trailer to accommodate external YARA antennas
- YARA participants to provide additional equipment at HUB locations:
  - Headsets for VHF and HF operations for noisy environments
  - Additional types of coax cables and antenna adapters
  - Adapters for all sources of power, include cigarette lighter plugs
- Test the interference effect of the Buddipole HF and the Suburban vertical HF transmissions on YSAR and YARA VHF radios
- Establish a YARA resource person to maintain YARA designated equipment in working condition for use on short notice (vehicles, ECO/YARA trailer, generator, radios, etc.)
- YARA conduct short training sessions on all YARA equipment (e.g. generator, ECO/YARA trailer, and radios)
- Introduce new members to Incident Command System (ICS)



**Action Items:**

- VY1GP to troubleshoot VY1GP Suburban mobile VHF to find and eliminate source of pulsing sound during transmission
- VY1GP and VY1MAP to test the impact of VY1GP Suburban mobile HF with vertical transmissions on YSAR VHS radio reception
- VY1YU and VY1MAP to test the impact of the Buddipole on YSAR VHS radio reception
- VY1YU to test Buddipole and coax under different field conditions
- Monitor future exercises to determine what/how the cross-band interference issues were between the YARA and InterOp repeaters.

## YUKON YSAR/YARA Comms Exercise - JANUARY 28-29, 2017

Report from Remote Net Control Operator, VY1RF, located at Takhini Trailer Court , 60° 44' 57"N 135° 05' 19"W

| TIMES                   | STATION | FIRST NAME | LAST NAME | COMMENTS  |
|-------------------------|---------|------------|-----------|---|
| <b>Saturday, Jan 28</b> |         |            |           |   |
| 10:20                   | VY1JY   | John       | Brooks    | Check in on 146.88 mobile from Grey Mountain Hub  |
| 10:25                   | VY1GP   | George     | Privett   | Check in on 146.88 mobile from Super A, Porter Creek                                    |
| 10:55                   | VY1MK   | Mark       | Bowers    | Check in on 146.88 mobile from Grey Mountain Hub  |
| 11:30                   | VY1MK   | Mark       | Bowers    | Check in on 146.52 simplex HT, 5wt from Grey Mountain Hub - 5x5                         |
| 11:35                   | VY1AK   | Terry      | Maher     | Check in on 146.52 Simplex HT, 5wt from Copper Ridge, 10 Laulite Dr- 4x5                |
| 12:25                   | VY1YTG  | John       | Brooks    | Check in on 146.52 simplex HT, 5wt from Grey Mountain Hub - 5x5                         |
| 12:25                   | YV1YU   | Yuuri      | Daiku     | Check in on 146.52 simplex HT, 5wt from Grey Mountain Hub - 5x5                         |
| 12:30                   | YV1RM   | Ron        | McFadyen  | Check in on 146.52 simplex HT, 5wt from Riverdale, 15 Liard Rd - 3x5                    |
| 12:37                   | YV1RM   | Ron        | McFadyen  | Check in on 146.84 Sima repeater HT, 5wt from Riverdale, 15 Liard Rd- 3x5               |
| 12:42                   | VY1YTG  | John       | Brooks    | Check in on 146.94 repeater HT, 5wt from Grey Mountain Hub - 5x5                        |
| 12:53                   | VY1YTG  | John       | Brooks    | Test 146.94 repeater HT, 5wt from Grey Mountain Hub                                     |
| 12:55                   | VY1YTG  | John       | Brooks    | Test 146.94 repeater HT, 5wt from Grey Mountain Hub - no copy                           |
| 13:11                   | VY1AK   | Terry      | Maher     | Check in on 146.52 Simplex, "green portable", 5wt from Copper Ridge, 10 Laulite Dr- 5x5 |
| 13:19                   | YV1RM   | Ron        | McFadyen  | Check in on 146.52 simplex HT, 5wt from Riverdale, 15 Liard Rd - 3x5                    |
| 14:14                   | VY1MK   | Mark       | Bowers    | Check in on 146.88 mobile from Grey Mountain Hub - Leaving with vehicle                 |
| 14:15                   | VY1YTG  | John       | Brooks    | Check in on 146.52 simplex HT, 5wt from Grey Mountain Hub - 5x5                         |
| 14:28                   | VY1MK   | Mark       | Bowers    | Check in on 146.28 simplex mobile, - 3x5  |
| 14:43                   | VY1MK   | Mark       | Bowers    | Check in on 14.150 HF, from Grey Mountain Hub, 5x4                                      |
| 14:44                   | VY1GP   | George     | Privett   | HF radio test between VY1RF Remote and Grey Mountain Hub on 14.150 - S9                 |
| 15:02                   | VY1GP   | George     | Privett   | Report to VY1RF that the everyone was breaking camping and some had left.               |

|                       |       |        |          |  |
|-----------------------|-------|--------|----------|--|
|                       | VY1GK | George | Kokyuro  |  |
| <b>Sunday, Jan 29</b> |       |        |          |  |
| 10:00                 |       |        |          | VY1RF monitoring   |
| 10:50                 | VY1JY | John   | Brooks   | Advised VY1RF that they were heading to Takhini Hot Springs            |
| 11:00                 | VY1MB | Bob    | Melanson | Advised VY1RF that he and VY1DW, Doug Watts were heading to Cadet Camp |
| 11:30                 | VY1JY | John   | Brooks   | Checked in from Takhini HotSprings, 4x5                                |
| 11:36                 | VY1AK | Terry  | Maher    | Check in on 146.88m HT, 5wt from Copper Ridge, 10 Laulite Dr- 5x5      |
| 11:40                 | VY1AK | Terry  | Maher    | Check in on 146.88m, base radio, advised going to EMO/YARA radio room  |
| 11:42                 | VY1JY | John   | Brooks   | Checked in from Takhini HotSprings, no signal report                   |
| 10:55                 | VY1AK | Terry  | Maher    | Check in on 146.94m, base radio, from EMO/YARA radio room, 5x5         |
| 10:56                 | VY1JY | John   | Brooks   | Checked in from Takhini HotSprings, on 146.88, 5x5                     |
| 12:02                 | VY1JY | John   | Brooks   | Checked from Crestview, advised going QRT                              |
| 12:15                 | VY1AK | Terry  | Maher    | Checked in from EMO/YARA , advised returning home                      |
| 12:18                 | VY1MK | Mark   | Bowers   | Checked in from Grey Mountain Hub, advised shutting down               |
| 12:18                 | VY1MB | Bob    | Melanson | Checked mobile, advised shutting down, going home                      |
| 12:18                 | VY1RF | Ray    | Fugard   | Shut down remote net control operations                                |
| 15:00                 | VY1GP | George | Privett  | Arrived home - called VY1RF  |
| CALL-IN TOTAL:        | 35    |        |          |  |

**VY1MAB Contact Log, January 29, 2017 Total Contacts: 7 - Station Location: Grey Mountain Lookout Parking Lot**

|                |  |                                      |                                     |                                     |                                       |                                 |                                     |
|----------------|--|--------------------------------------|-------------------------------------|-------------------------------------|---------------------------------------|---------------------------------|-------------------------------------|
| Callsign       | W7WH                                     | K7TEJ                                | AI6EM                               | K6RLQ                               | KA6T                                  | VE3LLV                          | NW5H                                |
| BAND           | 20m                                      | 20m                                  | 20m                                 | 20m                                 | 20m                                   | 20m                             | 20m                                 |
| PFX            | W7                                       | K7                                   | AI6                                 | K6                                  | KA6                                   | VE3                             | NW5                                 |
| MODE           | SSB                                      | JT65                                 | JT65                                | JT65                                | JT65                                  | JT65                            | JT65                                |
| RST_RCVD       | 57                                       | -13                                  | -1                                  | 599                                 | -8                                    | -4                              | -1                                  |
| RST_SENT       | 55                                       | -15                                  | -21                                 | -22                                 | -20                                   | -10                             | -10                                 |
| LOCATION       | VERNON P<br>ANDERSON\n\n \nUnited States | Richard H Tejera\n\n \nUnited States | Michael G Welch\n\n \nUnited States | LLOYD W HIGUERA\n\n \nUnited States | WILLIAM J SPEEDIE\n\n \nUnited States | TONY CAMARA\n\n \nUnited States | DONALD J BROOKS\n\n \nUnited States |
| COMMENT        | Portable from Grey Mtn                   | Portable from Grey Mtn               | Portable from Grey Mtn              | Portable from Grey Mtn              | Portable from Grey Mtn                | Portable from Grey M            | Portable from Grey Mtn              |
| COUNTRY        | United States                            | United States                        | United States                       | United States                       | United States                         | Canada                          | United States                       |
| CQZ            | 291                                      | 291                                  | 291                                 | 291                                 | 291                                   |                                 | 291                                 |
| DISTANCE       | 3520.99                                  | 3520.99                              | 3520.99                             | 3520.99                             | 3520.99                               | 1820.123                        | 3520.99                             |
| HEADING        | 115.639                                  | 115.639                              | 115.639                             | 115.639                             | 115.639                               | 187.589                         | 115.639                             |
| ITUZ           | 6  | 6                                    | 6                                   | 6                                   | 6                                     | 2                               | 6                                   |
| MY_CITY        | Whitehorse                               | Whitehorse                           | Whitehorse                          | Whitehorse                          | Whitehorse                            | Whitehorse                      | Whitehorse                          |
| MY_CNTY        | Canada                                   | Canada                               | Canada                              | Canada                              | Canada                                | Canada                          | Canada                              |
| MY_GRID SQUARE | CP20                                     | CP20                                 | CP20                                | CP20                                | CP20                                  | CP20                            | CP20                                |
| MY_NAME        | Mark Bowers                              | Mark Bowers                          | Mark Bowers                         | Mark Bowers                         | Mark Bowers                           | Mark Bowers                     | Mark Bowers                         |
| MY_POSTAL_CODE | Y1A 5E1                                  | Y1A 5E1                              | Y1A 5E1                             | Y1A 5E1                             | Y1A 5E1                               | Y1A 5E1                         | Y1A 5E1                             |
| MY_RIG         | Yeastu FT-450                            | Yeastu FT-450                        | Yeastu FT-450                       | Yeastu FT-450                       | Yeastu FT-450                         | Yeastu FT-450                   | Yeastu FT-450                       |
| MY_STATE       | Yukon                                    | Yukon                                | Yukon                               | Yukon                               | Yukon                                 | Yukon                           | Yukon                               |
| MY_STREET      | 3 Cache Place                            | 3 Cache Place                        | 3 Cache Place                       | 3 Cache Place                       | 3 Cache Place                         | 3 Cache Place                   | 3 Cache Place                       |
| Antenna        | Long wire at 12'                         | Long wire at 12'                     | Long wire at 12'                    | Long wire at 12'                    | Long wire at 12'                      | Long wire at 12'                | Long wire at 12'                    |
| OPERATOR       | MARK BOWERS                              | MARK BOWERS                          | MARK BOWERS                         | MARK BOWERS                         | MARK BOWERS                           | MARK BOWERS                     | MARK BOWERS                         |
| OWNER_CALLSIGN | VY1MAB/C1MAB                             | VY1MAB/C1MAB                         | VY1MAB/C1MAB                        | VY1MAB/C1MAB                        | VY1MAB/C1MAB                          | VY1MAB/C1MAB                    | VY1MAB/C1MAB                        |
| TIME_OFF       | 2017-01-29-195646                        | 2017-01-29-183058                    | 2017-01-29-183058                   | 2017-01-29-183058                   | 2017-01-29-183058                     | 2017-01-29-183058               | 2017-01-29-183058                   |
| TIME_ON        | 2017-01-29-195646                        | 2017-01-29-192258                    | 2017-01-29-191858                   | 2017-01-29-190458                   | 2017-01-29-185858                     | 2017-01-29-183058               | 2017-01-29-183458                   |
| TX_PWR         | 100W                                     | 40W                                  | 40W                                 | 40W                                 | 40W                                   | 40W                             | 40W                                 |

**VY1KX, VY1BG, and VY1IRM Contacts, Saturday, January 28, 2017 - Station Location: Mayo Rd**

Note: there was no computer log, but paper records were kept.

Mode CW CW  
 Band 20m 20m  
 Power QRP QRP  
 Antenna Buddipole/20m home brew wire endfed vertical  
 My Location Mayo Road Mayo Road  
 DX Station Arizona, Oregon