Ham RADIO News

Newsletter of the Amateur Radio Society of India (Indian Affiliate of IARU)
January 2018 Issue

The Old Year Has Gone,
The New Year is here,
Forget All The DX that you missed,
And Any Form of QRM of The Past Year;
Expectantly Focus On The New Year,
Because There is plenty more DX and
Great Things In Store For You
If you could only listen
Cos if you have a good signal
And if you are a good Op,
You don't go behind DX
The DX will look for you!

President's message

In September I had mentioned the various subjects that we were following up with WPC and concentration is on the removal of restrictions on mobile operation.

At the recently concluded Hamfest India 2017 at Kolkata where some 800 delegates attended, a session was held when the delegates passed a resolution requesting WPC and the Department of Telecommunications to act speedily on this matter and remove the requirement of having to take prior permission for operating outside their licensed locations.

ARSI is moving towards totally digital communication with their members, as decided at the recent AGM, as letters sent by post are sometimes not delivered at all as happened when AGM notices were sent out and some members did not receive the notices or postal ballot papers.

The Hon. Secretary has sent out letters to each member requesting them to update their mailing addresses as without that they would not receive any communication. Many members have not yet done so and so I request all members reading this to send a mail to < sec.arsi@gmail.com > from their preferred email address and quote their call sign and membership number. This will help updating the data base quickly. Some letters have been returned undelivered as members residences may have changed and the changes not informed to ARSI.

Our contest season will soon be upon us and we hope that more and more VU's will take to contesting to hone up their operating skills. Our Contest Manager conducted a very nice Webinar on contesting, which was well received and many viewed it in real time as well as later.

I take this opportunity to wish all of you and your families a Very Happy and Prosperous, and more importantly, Healthy New **Year .**

Gopal Madhavan VU2GMN

From the Editor's Desk

Happy New Year to all!

You will see articles from new contributors in this issue; I hope the trend continues and we see more and more interesting articles in future issues. Feedback is always welcome.

Band conditions have been up and down over the last quarter with some sudden openings at certain times. In my time, I used to work DX when I was free; now I can work only when DX is free, Hi

I have reproduced A GUIDE TO HAM RADIO published by the National Geographic Society though it is meant for the general public; some members may want to print it and distribute it to people who want to know more about this fascinating hobby.

I hope the new year sees lot more activity from VU amateurs; here is wishing you all a very happy and prosperous new year 2018

Ganesh VU2TS

BEFORE MARS

The National Geographic channel has announced the release of the short film "Before Mars" which is the dramatic backstory of Hana and Joon Seung, identical twin sisters who grow up to be central characters in the upcoming global event series, MARS.

Shot in Ellenville, NY, "Before Mars" is the story of twin Korean American teenage girls who move to a new town with their military mom. Hana finds a ham radio and with the help of an Elmer, successfully makes contact with an astronaut on the International Space Station. In the story, that feat helps inspire the sisters to pursue careers in **space exploration—**one as an astronaut on the Mars mission, the other as an official at Mission Control.

Trust National Geographic to be sticklers for accuracy - prequel offers one of the most accurate representations of ham radio that on film.

The amateur radio researcher on the film was Michael Gilmer N2MG.

Watch the 30 minute episode here:

http://channel.nationalgeographic.com/mars/videos/before-mars/

By Patrick J. Kiger

A GUIDE TO HAM RADIO

Can Ham Radios Really Talk To Space? And Other Answers.

Our digital short film **Before MARS** provides background on two of the lead characters in the upcoming global event series **MARS**—teenage twin sisters Hana and Joon Seung who find an old radio transmitter-receiver in their attic and successfully use it to communicate with an astronaut on the International Space Station (ISS). In the story, that feat helps inspire the sisters to pursue careers in space exploration—one as an astronaut on the Mars mission, the other as an official at Mission Control.

The idea of an ordinary person sitting at home and talking to someone in space might seem crazy. But devotees of **ham radio**, as such amateur communication traditionally is called, have been doing it for decades, ever since NASA astronauts began taking compatible transmitter-receivers with them on space shuttle flights as part of the Shuttle Radio Experiment, or SAREX.

A 1995 *Baltimore Sun* article described Samuel T. Durance, a research scientist, talking with a group of middle school students—including his own son and daughter—as he orbited 200 miles above the earth on the Shuttle Endeavour.

More recently, in a fashion similar to what **Before MARS** describes, ham radio operators have been talking with astronauts on the ISS. The orbiting facility has an ongoing program, Amateur Radio on the International Space Station (ARISS), which allows operators to schedule time to chat with the station's staff. In addition, some astronauts who are ham radio enthusiasts spend some of their free time chatting with random amateurs who manage to make contact with them. A 2015 article in the *Telegraph*, a British newspaper, details how a 52-year-old man named Adrian Lane, who keeps a radio set in his garden shed, spent weeks trying to contact ISS astronauts, and finally managed to have a conversation with them that lasted nearly a minute, in which they described how Earth looked from orbit.

National Geographic Channels/Scott Gries

Above: A still from Before MARS: Hana Seung is determined to talk to an astronaut aboard the ISS with the old ham radio she found in her attic.

Communicating with someone in space is just one of the attractions of ham radio, a hobby in which operators communicate with others in distant places, using frequencies that the Federal Communications Commission (FCC) and other regulatory agencies around the world allocate for use by amateurs. To be a ham radio operator in the U.S., all a person needs is to obtain some inexpensive equipment—beginning sets cost less than $200—and pass an FCC licensing exam to demonstrate basic knowledge and an understanding of government regulations.

There are more than 600,000 ham radio operators in the U.S. alone and about 2 million worldwide, according to the website of the American Radio Relay League (ARRL), an

association that has been promoting ham radio for more than a century. (Interestingly, according to one census of ham radio operators, the country with the most enthusiasts is Japan, with about 1.3 million. The U.S., Thailand, South Korea, and Germany round out the top five.)

"Amateur Radio operators come from all walks of life—doctors, students, kids, politicians, truck drivers, movie stars, missionaries and even your average neighbour next door," explains a primer on the ARRL website.

Italian-Electrical-engineer/inventor Guglielmo Marconi (1874-1937) with the spark-gap transmitter (right) and coherer receiver (left) he used in some of his first long distance radiotelegraphy transmissions during the 1890s.

LIFE Photo Archive

Ham radio dates back to the late 1800s and early 1900s. Around the time that an Italian inventor **Guglielmo Marconi** pioneered wireless communication and used high-powered transmitters and giant antennas to communicate across the Atlantic Ocean for the first time, amateur tinkerers figured out how to build smaller, low-powered radio transmitters and receivers that could communicate over distances of as much as 100 miles.

In those days, radio communication was unregulated and largely chaotic. Amateurs sometimes jumped onto frequencies used by commercial or government stations and essentially jammed them—a phenomenon which led the professionals to deride the amateurs as "hams." That name stuck, though over time it lost its negative meaning.

In 1912, U.S. Congress passed a law reserving longer wavelengths for professional communication, and restricted amateurs to shorter wavelengths that experts considered to be of little value for long-distance communication. But the amateur radio operators figured out an ingenious way to get around that hindrance. They organized themselves into networks and helped each other by relaying signals, which allowed them to stretch their capabilities. They got another boost from an inventor named Edwin H. Armstrong, who developed a receiver with vacuum tubes that was far more sensitive than the crystal sets that amateur operators were using at the time.

Ham radio operator Dick Oberholtzer and his wife listen to radio signals from Sputnik 1, the first ever artificial Earth satellite, launched by the Soviet Union in 1957.

Francis Miller/ The LIFE Picture Collection/Getty Images

In the decades that followed, ham radio continued to grow. The 1950s saw the advent of transistors and other technology which gave amateur radio sets more capabilities, and in the 1960s, they began to extend their range by using small satellites such as OSCAR (Orbiting Satellite Carrying Amateur Radio) that NASA had launched into orbit to assist them. They also increasingly began repurposing old equipment from FM commercial radio stations to set up repeaters—basically, relay stations, usually located on buildings or hillsides, which receive signals from amateur operators and re-transmit them on different frequencies with higher power.

Unlike commercial or government radio stations, ham enthusiasts don't have to stay on the same fixed frequency all the time. Instead, they can jump around within the part of the radio spectrum that's allocated to amateurs, and utilize any channel that's clear at the time. As an ARRL primer explains, operators use call signs—such as "RickKU0W" or "Gayle KG7ZZZ" to identify themselves and establish communication with other hams.

SINCE THEY HAVE TO SHARE THE NETWORKS AND FREQUENCIES THAT ALLOW THEM TO COMMUNICATE, HAM RADIO OPERATORS ARE BIG ON ETIQUETTE.

If an operator is looking for another specific operator, they'll call out something such as: "W1AW (the station you want to contact), this is KC2ABC, Kilo Charlie Two Alpha Bravo Charlie, over." If the person doesn't respond, an operator can keep trying on that channel. When the operator is done, he or she will utter a message such as "This is KC2ABC clear" to inform other operators who may want to use the channel that it is available.

As the website of one amateur radio club explains, "nothing is more annoying than someone that 'keys up' in the middle of another conversation without first checking to make sure the repeater is free. If the repeater is in use, wait for a pause in the conversation and simply announce your call sign and wait for one of the other stations to acknowledge your call."

Ham radio continues to thrive, even in the age of the Internet and mobile phones. As a recent *Ars Technica* article noted, ham radio has survived wars, dictatorships, and even natural disasters that disrupt other communications systems. The medium's appeal is that it remains free, non-commercial and largely organized and controlled by users, and that it allows people to communicate with others all over the planet—and even in space.

Hana and Joon Seung

RSGB YOTA video released

The RSGB has released a video on YouTube about the successful YOTA 2017 event at Gilwell Park -

Here's the link:

https://youtu.be/Msk6L44uB2A

VU7T – Lakshadweep Islands

11 October to 19 October 2017

A sequel to VU7MS

Out of the blue if something beautiful emerges and makes its presence felt all over the globe, how awesome it would be!. Such was our story of VU7T, a DXpedition to Kavaratti, Lakshadweep Islands.

A bunch of DX crazy hams who set their foot on activating #56 DXCC entity. Though in recent years Lakshadweep had seen many activations including most famous VU7AG, it nevertheless remains sought after by many hams across the globe. VU2CPL Manoj, spearhead of this activation had done a recce on the islands in November 2016 with VU3NXI Siddhu and found that Paradise Hut resort area as suitable for the team operation. Their two day activation - VU7MS had received appreciation for simple but efficient operation and racking up more than 3000 contacts.

As with many DXpeditions, knowing the geography and people goes long way. So this operation was planned as Sequel second half of VU7MS. VU2WH Sangeeth (A45TT), VU3HPF Gopan (M0XUU), VU2XE Kiran and A65DR Paul were invited by Manoj to join the operation by fixing the dates in October 2017. But that was just the start of our suspense thriller moments to follow. Lakshadweep remains restricted to tourists and all visitors including main landers require permit to land and stay. The process for WPC permission is more streamlined these days, but paper work is paperwork- with all its uncertainties. Fingers crossed the team submitted all paperwork and waited for the permission along with Paul's reciprocal license permissions.

Meanwhile, Paul had taken up the major work of antenna and station planning. With our intention to

do serious operations, we planned VDAs for 20 to 10 mtrs, Phased arrays for 30/40 and vertical for 80mtr.

By around 3rd week of September, Manoj received WPC permission for the team including Paul's reciprocal permits. We could not rejoice at this moment as most critical for our operation was permission to operate from the Island and it had to be issued from Island Administrator's office. Manoj had to constantly follow up with the island administration through poor phone lines and an almost non existent internet connectivity! Manoj's close personal acquaintances and friends helped bridge most of these gaps. Though they conveyed that we will get permit, paperwork was getting delayed and complicated due to presence of a foreign national.

Lakshadweep is an Union Territory coming directly under control of Central Government and it is frequented by high ranking officials from the government. The resort which is one of the few places in Kavaratti to stay had 6 rooms and mostly was reserved for visiting officers. This added another dimension to the uncertainty. Team was undergoing anxious moments and even accessories required to procure such as 750mtrs of LMR 400 had to be deferred due to its cost. This uncertainty also forced us to keep our plans within our circle. A week prior to planned activation we decided to take a risk and get our Coax ordered from a supplier in New Delhi who promised to get it delivered to Kochi before 10th of October. That sounded OK as Cargo Ship which will carry majority of our luggage would leave Kochi sea port on 10th afternoon. VU3NXI Siddhu did a road trip to Kochi from Bangalore to transport the heavy luggage items such as Amplifiers, spare Coaxes plucked from our own stations, Spider poles etc. Days went by very fast and on 9th we came to know that Paul will not be issued a permit in time. This was big blow to us. He was instrumental in planning this operation, was our one of our key SSB/ RTTY operator and antenna man!. We had to go forward and salvage the situation with the tough to get permission. Team decided to go public with news of VU7T going on air with 5 operators and Paul as technical support from UAE.

Team had to scramble for the operation plan, alternate antenna plans etc. Also there was a request from the island to familiarise the islanders about this hobby. Happily we obliged their request and planned some demonstrations during our visit.

Gopan and Sangeeth had already flown to India, Kiran preponed his plans to travel with team itself on 11th. Kiran and Siddhu did last minute huddle at Manoj's QTH for taking alternative antennas on the islands and stick to classic single verticals for lower bands.

Due to runway size on Agatti airport, an ATR72 belonging to Air India is the only Airliner to fly there once a day. Manoj, Kiran and Siddhu boarded the plane at Bangalore where they carefully balanced the allowed luggage weight of 15kg each. They were then joined by Gopan and Sangeeth at Kochi Airport. The next one hour flight to Agatti was the most mesmerising!. Small islands with coral reefs, greenish blue lagoons kept us rubber necked most part of the flight.

From the airport after completing the landing permit check formality, we proceeded to Jetty where a small shift boat was awaiting us to carry to the speedboat . These speedboats run between the islands in tune with Agatti airport schedule and that is the only time one can transit across islands. We were told that if we miss that slot, we would have to hire small fishing boat and travel for 4-5 hrs to reach Kavaratti which is 60kms from Agatti.

Speedboat ride on rough sea seemed to be never ending. Sea sickness caught us and by the time we reached Kavaratti, we finally felt a big relief but dehydrated. Short ride on three wheeler reached the resort. Resort was complete with all basic needs and also rooms were equipped with AC !. We were given one large suite with two rooms for our team. That was good enough for our type of stay. We were quickly told that there is group of tourists visiting the next day. So the beach access remained a challenge for us. The Tourism Department organises package tours form mainland and groups of 50-200 members reach different islands and they are engaged in water sports and sight seeing along with good food and other entertainment like traditional songs and dances of the island. This not only provides much needed revenue, but opens up the island life to main landers.

After an hour in the resort, we got the message that the Cargo ship has arrived and our luggage will shortly be delivered to resort. A great news for us but we also came to know that much needed Coax cables did not make it to Kochi on time, so it is not in our shipment. So, we had to work with whatever we had in hand and that just enough for the spiderbeam and two verticals on the beach. We focused quickly on assembling Spiderbeam and then 17mtr vertical to be placed on terrace of the resort.

We went on the air at 14:50 UTC on 11 October

First QSO was YL2BR on 17m SSB. We continued on 17m SSB and thereafter QSYed to 20m CW. We had plans to put 40m and 30m verticals for the night, but everyone was tired after day long journey and felt it is better to take rest and continue with the antennas the next day.

Next day, there was group of tourists arriving on a cruise ship and occupying the beach area. As it is controlled tourism, they have fixed schedule and no overnight stay for them in Kavaratti. Till 5PM local, their activity continued and with a local folk dance show they all returned to the ship. With no time to waste, we made our way to place verticals for 30 and 40 mtrs. We immediately Noticed that there is some random noise on verticals during the peak NA prop times in the evening. This situation continued for the rest of the operation times and only after around 11PM local i.e 17:30 UTC we could observe some quiet moments.

This was in stark contrast from VU7MS when Manoj and Siddhu had a very quiet band to work. The team went about investigating the source and found out that there is a major drive by local administration to change all lights to LEDs and this was confirmed to be the source of noise and continued to wreak havoc on most of the low bands throughout our stay.

VU3HPF Gopan

We had planned an operation roster, but due to last minute scramble, operation then turned to be dynamic. We tried to keep two stations ON through the night and tried to listen to NA/SA whenever path opening were sensed. VU7MS experience was that there was lack of JA path, but that was not the case this time as we found plenty of JA on all bands we operated. We also erected 20mtr vertical on the beach on 3rd day which gave us better opportunity to work NA/ SA. Also we did erect 80mtr vertical to have some CW operation on this band, but without a proper Rx antenna, this was not a very fruitful move, but we are happy we could give out some much sought after band fills.

Sangeeth VU2WH

Team went for demonstration at local administration office where the young high ranking officials received our presentation with open mind. On subsequent days we had them visit our operating conditions. We also had demonstration for a group of school children. We were happy with the very positive response from all and are hoping that we will have some native ham on the island in near future. We spent a good amount of time educating Island locals

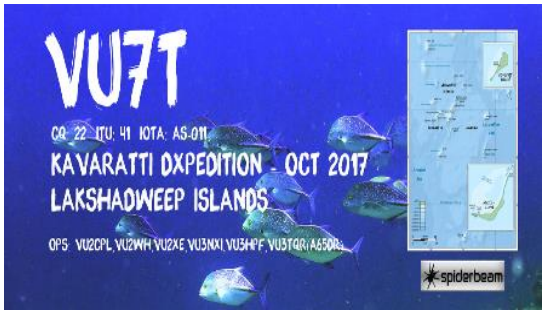
who came to our site about amateur radio as a hobby and also its part during natural

calamities. Some of the islanders even recollected past radio activations.

Kiran VU2XE

We did not have any expectations about food, but it was far exceeded by resident chef of the resort. Though for fish eaters it was paradise, for vegetarians like Kiran, Gopan and Siddhu, it was a nice surprise as well. They served awesome meals and staff was friendly extending any help we needed.

Lakshadweep being one of the most beautiful destination for Coral reef scuba diving, and our resort having PADI certified Scuba instructors and dive masters, we could see some adventure seekers taking diving lessons in the lagoon.



Some of the instructors tempted us to go along for diving as well. We left them with their oxygen tanks as we had our oxygen elsewhere - Hi!.

Then one day our friend Abdu could not resist but insisted us to get on to the sea to check the bounty of this lagoon. We all got onto the glass bottom boat for a slow lagoon ride and man… he was not wrong. We were missing this awesomeness of nature. Various coral formations, shy and gentle moving colourful fish were welcoming us in the reef. Shallow waters 10-15feet were crystal clear and showing its dazzle that day, our hour long ride left us wondering about its abundance and heart full of joy.

As we continued the days, we started seeing many dupes in the log. We could not upload log regularly from the island. The internet used to appear abruptly after midnight and then no sign later on. We thank DXers who listened to the instructions while we looked for OC, AF, NA/SA. Still there were some jammers following our course most probably via modern SDR waterfalls, they gave a hard time when we asked for weaker stations. We slowed down time to time when signals were weaker or local QRM was there. This being tail end of Monsoon season, we did not expect major storms, but few days on the island was rough as it poured heavily and we could see lightning bolts around. These were the times we had to disconnect all our rigs.

Overall we could not fully achieve our target of 30K QSOs, but for sure with limited resources we did our best. Probably with directional antennas such as VDA we could have done better.. With Sangeeth and Siddhu leaving on 19th, we dismantled spiderbeam on 18th evening working that night only on beach verticals. On 19th we dismantled 80m, 20m and 17m verticals leaving

30 and 40mtr for the last day. When we wound up all our ops, there was question again on what next… With still ringing ears, we said bye to lovely islanders to our way back to Agatti. Met few more friendly people on the way, people who want to welcome us back, making us think about these unique “Dweep” (island) and its awesome people!

73, VU7T team

Our sincere thanks to VU Contest Group and the Dxers who supported us during this operation, Lakshadweep Administration and SPORTS for inviting us and providing opportunity to make presentations about Amateur Radio to a varied audience.

Thanks a million to Abdu and team-SPORTS who helped us by going out of their way, and thanks to all DXers who had patience to work us, understanding our constraints.

We had experienced low JA QSOs during VU7MS, but happy to see lot of JAs this time. Italy and UA stations came up in good numbers as was expected. We were pleasantly delighted by the response from VU hams. We had 179 QSOs with more than 100 unique calls from VU. We hope more and more VUs get interested in hunting rare DX.

Some statistics:

The table shows QSOs by continent; by band, . Europe was leading the list with Asia at second place. North A m e r i c a settled at 3.8 % . We still lacked good openings to VK. ZL and AF. Most of Asia was Japan , Russia and Ukraine. We are happy to give many ATNOs. But band fills and slots dominated the list.

Continent By Band

Band	80	40	30	20	17	15	12	10	Total	Total %
AF	5	27	28	52	28	31	3	9	183	1.0%
AN	0	0	0	0	0	0	0	0	0	0.0%
AS	34	368	282	636	664	1193	199	10	3386	18.8%
EU	469	2318	2073	3518	1816	2869	277	18	13358	74.2%
NA	0	230	183	209	18	46	1	0	687	3.8%
OC	1	7	14	38	15	27	2	0	104	0.6%
SA	4	128	74	50	15	15	0	0	286	1.6%
Totals	513	3078	2654	4503	2556	4181	482	37	18004	

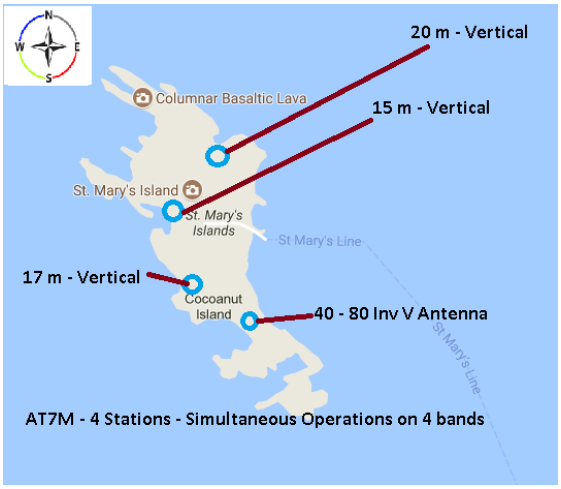
Expedition Impact On Users' Totals *(info)*

Band	160	80	60	40	30	20	17	15	12	10	6	Total	Total %
New Band	0	66	0	149	267	236	200	183	71	5	0	1177	44.3%
New Mode	0	0	0	19	3	89	19	54	0	0	0	184	6.9%
New Band + New Mode	0	2	0	18	43	61	37	33	3	0	0	197	7.4%
New Slot	0	3	0	107	24	194	140	140	12	1	0	621	23.4%
New DXCC	0	2	0	63	79	148	45	139	2	2	0	480	18.1%
Totals	0	73	0	356	416	728	441	549	88	8	0	2659	

Band	DXCC	CQ	QSOs	Dupes	Total
160m:	0	0	0	0	0
80m:	59	18	509	5	514
40m:	101	28	2,959	117	3,076
30m:	96	31	2,532	121	2,653
20m:	113	35	4,387	117	4,504
17m:	95	29	2,491	66	2,557
15m:	95	30	4,058	127	4,185
12m:	51	17	468	15	483
10m:	12	7	37	0	37
6m:	0	0	0	0	0
2m:	0	0	0	0	0
70cm:	0	0	0	0	0
Total:	142	38			
Sum	622	195	17,441	568	18,009

IOTA - AT7M - Activation

St. Mary's Island is just 4 nautical miles off the western coast. It's a small town, but a big fishing harbour called **Malpe**. The number of trawlers giving us company during day and night, cruising around the island and going about the sea indicated how busy the port remains, and of course, the noise it created for us HI! Only option to reach there is to hire a motor boat and we were fortunate for getting one in which all our equipment for our 2 day sojourn could fit in, along with our team.



We were 13 of us who stayed on the island to activate this rare station. Last time it was activated was in 2001, so it required a good balance of age, experience and wisdom to carry out the simultaneous 4 band operations in a very short span of time!

1. **VU2GRM** - OM Ram Mohan G
2. **VU3GDS** - Girish Doss
3. **VU3EDG** - Pradeep Kumar
4. **VU3NPI** - Madhu Prasad
5. **VU3YPP** - Poojith Prakash
6. **VU3ZLS** - Likhit Sarvesh
7. **VU3ESV** - Vinod ES
8. **VU3ZNG** - Nyjil George
9. **VU2DEV** - Dev Ramaprabhu
10. **VU3UN0** - Krishna Kumar
11. **VU3HVD** - Vishwas
12. **VU3RTX** - Rahul MK
13. **VU2XE** - Kiran
14. **VU2GTI** - Gaurav

We also got support and help in our operations from VU2RCT (OM Ramchandra), VU2UR (OM Arasu), VU2SBJ (OM Srikanth Bhat), VU2RDQ Rohit.

AT7M Album on Facebook

A big note of thanks to all the people who were able to contact us, as well as to those who monitored us but couldn't contact us. Propagation wasn't very conducive on 40/80m but 15 / 17 & 20m operations allowed us to log 2K + contact in 48 hours. 40/80 was largely limited to local subcontinent, only exception being few contacts on CW to Finland and Ireland.

Here are some of the snaps we clicked on / from the island:

PUNE, MAHARASHTRA

Pune Hams celebrated the birthday of Sir JC Bose, The father of Radio, on Sat 2nd December 2017 at BVB's Muktangan Science Exploratory's Innovation centre Pune. Marathi Vidnyan Parishad was active supporter to the event. Mr. Abdur Rahman , Deputy Inspector General of Police (Wireless), an IPS of 1997 Batch & Engineer from IIT Kanpur, was the chief guest.

The Ham Radio Club of **Muktangan science Exploratory** was formally inaugurated by DIG Wireless.

The active Pune Hams viz VU2MSB, Milind, VU3YBU Shripad & VU3UJO Koustubh demonstrated Ham Radio to all present.

OM Milind shared QSL cards and explained various aspects of Ham Radio. Shripad and Koustubh demonstrated how VHF works. A home brewed Morse key by Koustubh was demonstrated and students learned EISH & TMO alphabets on Morse.It was thrilling experience for them.

Mr.Abdur Rahman shared information about the Police wireless network in Maharashtra. He also added, Police wireless is in the process of creating Innovation Hub in Pune for resolving communication problems and requested support of Pune Hams.

The first problem he shared with Pune Hams was detection of Mobile phones of the criminals.

There was fantastic response from students and science lovers beyond expectation. More than 60 students and citizens attended.

Padmashri Dr. Govind Swarup (creator of GMRT...Giant Meter Radio Telescope near Pune) was a surprise visitor and shared memories of Montreal science congress where Marconi's grandson gave credit to Bose. In fact Marconi used Sir JC Bose's Coherer in his receiver. His grandson found such a note written by Marconi.

Sir JC Bose was 60 years ahead of every scientist who were trying to invent Radio that time. Much before Marconi he proved Radio waves by igniting gun powder creating Microwaves. Now Sir JC Bose is inventor of Radio and not Marconi admitted by IEEE. The working replica of Sir JC Bose Microwave Radio experiment was demonstrated to all in batches by Mr Sudhir Phakatkar, technician from GMRT who also gave presentation. Sir JC Bose created this experiment without much support and test equipment was inspiring point to all the students. The receiver, Coherer, using contact diode is still very innovative.

Mr Vishwas Kale gave short presentation on scientists who were involved in reserch of wireless technology. Those days telegram was called as Marconigram. It was discovered from the ship - Titanic's - documents.

The director of Muktangan Mr Anand Bhide, along with Sandeeep Naekar and Nandkumar Kakirde & the staff extended excellent support to this scientific event and took special efforts,

This is the second year, Pune Hams are celebrating Sir JC Bose birthday with such a scientific meet in Pune

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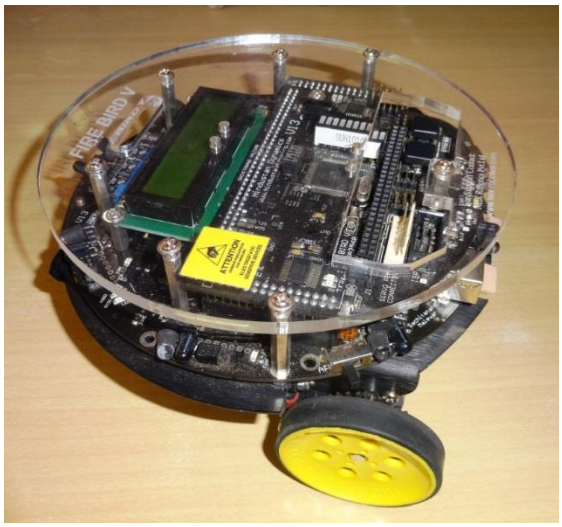
Pune hams met for an eyeball QSO as usual at Hotel Kollage, Film Institute Road; ten hams were present.

VU2AU OM Paran from Nagpur was the chief guest. He shared details of his recent creation of 5 Element HF Beam.

He also gave tips to new comer VU3UJO OM Koustubh, for construction of HF Antenna. Paran is regular visitor to Pune and attends the monthly meetings of Pune Hams.

Newcomer VU3YBU, OM Shripad - demonstrated the Alexa Virtual assistant. It needs to be configured through WiFi. Eufy application need to be installed on an Android phone. .



This voice-activated virtual assistant can perform a variety of simple tasks, like playing music, but it can also be used to control smart-home gadgets, giving it the ability to dim the lights, lock the doors, or adjust the thermostat.

The meeting ended with snacks and Tea. Pune Hams meet every first Sunday of the month at 10:30 to 11:30AM at Hotel Kollage Film Institute Road.

The VU2ED....VHF Repeater of Club station VU2DYP (Ajinkya DY Patil University) is very active. It is installed near Pune Airport. One can access it by tuning on 144.800 Mhz with minus shift. Its 24 x 7 operational. The morning Net is conducted by VU2KI OM Keki and VU2MSB OM Milind at 8:15 AM and Evening one at 9:30 PM for 30 Mins.

Visiting Hams please note.

Vilas Rabde VU2VPR
(M)**+91 98225 02078**

PUNE HAMS EYEBALL QSO

VU3YPP -Poojit Prakash from Bangalore, who was on a short trip to Pune and VU3ITQ - Major Ompal Tomar from the Corps of Signals and VU3 XEK-SenthilRaja who are both posted in the city joined the eyeball QSO.

HAM Radio training in PATNA

A training program for ASOC exams was conducted in Patna at G.P.Sinha Disaster Centre , under the banner of Madanmohan HAM Radio club - by OM Jayant S. Bhide VU2JAU from 11 Oct. to 14 Oct 2017. OM Rajan Sinha VU2ZRJ, organized the whole program for training and ASOC exam. The training was divided in two parts (1) For Refresher (2) For Fresher's. There were many candidates appeared from DPS School Patna so morning session was conducted in DPS School and afternoon session in G.P.Sinha Disaster Centre, Patna. The ASOC exam was conducted on 14 Oct. 2017. Total 60 candidates appeared in exam. Some of them appeared in General class and some for restricted grade. The candidates were happy after training and exam as well. Thanks to OM Rajan Sinhaji VU2ZRJ and his team working hard to make it successful.

73 de Jayu VU2JAU

Promotional activity in SIRTE Indore

On behalf of Amateur Radio club Gwalior, I visited Sagar Institute of Research & Technology, Indore on 1 December 2017to promote the hobby. An introctory lecture was organized on HAM Radiio and Community Radio. Maximum students were from Mass Communication and rest of the students attended from other subjects. It was explained by OM Jayant S. Bhide VU2JAU that how the HAM Radio is beniffited to students and what they can do to enjoy the hobby.Jayu also explained that Community Radio is also very useful to students. Students can work on Setting up complete Community Radio station, Recording of programs, Editing it, Broadcasting & Maintenance of station along with many more things. The students were looked very interested and administration is also shown ttheir keen interest in setting uo station. Higher authority of SIRT Indore asked HOD Mass media to process the papers of Community Radio station. OM Jayu helped them in all formalities of Community Radio and HAM Radio. We are sure that soon there will be a FM Radio station of their own. I am thankful to all for the nice support given by all the officials and faculties.

73 de Jayu VU2JAU

HAM FEST INDIA
ARCCS • VU2GIN 2017
16 -17 DECEMBER, 2017
KOLKATA

The HAMFEST INDIA 2017 was held at Kolkata on 16th & 17th December. The last time hamfest was held at Kolkata was twenty years ago. More than 700 Amateurs from India and 21 amateurs from overseas attended the hamfest. The event was organized by AMATEUR RADIO CONVENTION AND CONFERENCE SAMITY (ARCCS) - VU2GIN.

I cannot afford an island! –
Living with noise in our times

Noise Reduction in most modern receivers have been done predominantly in following ways-

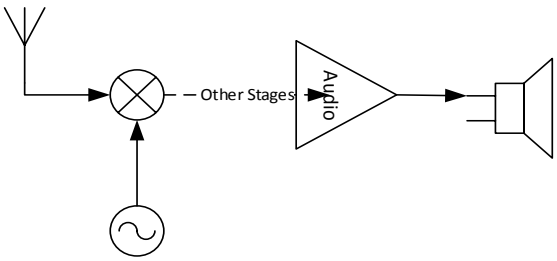
1. RF Phasing: Phasing RF signals from main antenna and so called noise antenna feeding to RF stages via phasing box

2. DSP: Using advanced DSP noise settings which uses predefined algorithms which works on typical noise signatures and cancels them. DSPs work on IF and Audio stages

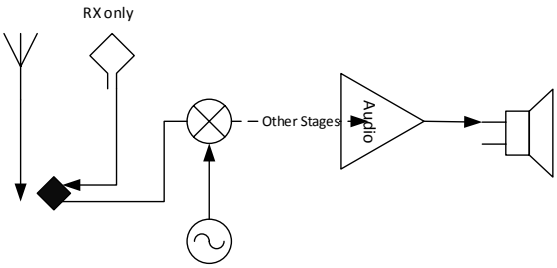
3. Separate low noise RX antennas: Build very low gain, directional receive only antennas. Where RDF (Relative Directivity Factor) is major parameter for success to eliminate unwanted diction noise.

While classic radios such as K3, TS590 provides DSP functions, SDRs such as ANAN gives flexibility of both RF phasing and advanced DSP (K3 and SDRs such as Flex Radio, Anan provides diversity reception which works on phase cancellation techniques). Providing ideal noise signature for DSP processing is a real challenge as the mixing becomes a complicated scenario in receivers. The following few diagrams represent receiver architecture at very high level.

Regular Transceiver



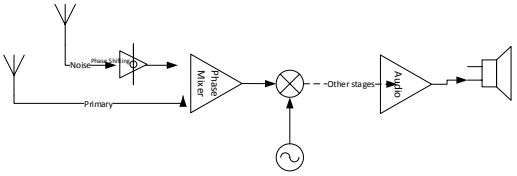
Single antenna for both TX and RX



Separate RX optimized antenna

Direct down conversion by beating in coming RF with VFO and using products for intermediate stages and then using audio amplification. Advanced DXers use optimized RX antennas for increased SNR and RDF

RF Noise Phasing Receiver:

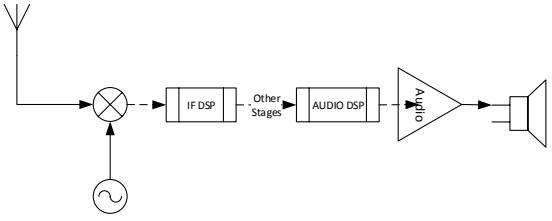


Primary high gain antenna along with secondary noise antenna is used in this architecture. Kind of an effective solution if noise source is local and can be caught with antenna 2 (noise). Signal from noise antenna is then manipulated for phase and gain to mix with primary antenna path in inverse phase manner. This technique is effectively used by companies such as Bose in their noise cancellation headphones. In Ham world, it is used by multiple vendors including Time Microwave, MFJ and DXEngineering.

Problem is that unlike audio noise which can be classified outside (noise source) and inside (audio source) of a headphone, in RF world, the classification is not that simple as both the antennas are exposed to outside noise as well as desired signals. Only difference being one is higher gain optimized TRX antenna and other is local noise pickup antenna. This provides lot of challenges. I have used Time Microwave ANC noise canceller in earlier QTH with very less success. However it has worked in some other situations with damped RX gain.

Similar case is with diversity reception feature with K3 and other SDRs such as Flex and Anan. They all use phase and amplitude variation to nullify the main source noise with a directional low profile noise antenna.

Receiver with DSP

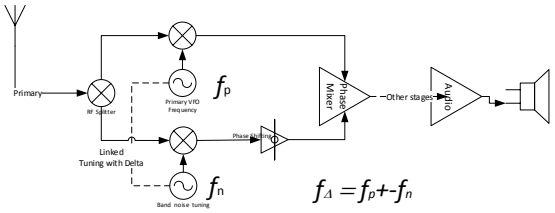


DSP is modern marvel where efficient high resolution factoring of signal and elimination of noise signature has become game changer. Hard embedded DSP algorithms require strong seek and filter capability and yet, the noise still creeps into final audio. This is because design time noise signature and actual world noise situations are not the same.

Is there another way? I might be silly and not aware of any other. But, what if we constantly catch the noise signature from the same antenna source used for primary high gain antenna and use an adjacent area noise sampling? This is purely hypothetical as of now with no proven implementation. For DXers with problems with those LED, street lights, machines etc. in the neighbourhood, I think any method that works is a boon☺.

Why not give a thought and try, after all Amateur Radio is ticket for this adventure.

Following is what that theoretical another way looks like:



This architecture constitutes of two VFOs linked for same band tuning, one for actual frequency (*f*p) and second one is used as noise source from the same band (*f*n). *fD* is kept very minimal and at the same time bit away from the bandwidth of the primary signal. Both the RX paths are fed with RF splitter and noise frequency is chosen to be one from neighborhood. [Concept is similar to Colorpicker tool in desktop image editors]. This is similar to regular phasing with two antennas, but here we use single antenna and drift frequency for noise sampling.

If the mixing products are isolated and kept to theoretical minimum, this should ideally provide a noise signature realistic to the band noise (far field QRM +atmospheric) + local hash noise. Now further processing is just matter of adjusting gain and phase of the noise into phase mixer.

Why this will not work:

1. Contest type of condition where every *f*n
2. might be occupied
3. If noise as we think is not the exact noise which is in the RX path
4. If mixing products cannot be isolated to arrive at wanted signals
5. If noise is pointed only on *f*p (focused broadband QRM) but not on *f*n

6. *f*n overrides the *f*p signal characteristics

Summary: Noise eradication is almost impossible unless we get to remote areas such as islands, but reality is, we enjoy this hobby mostly from our city apartments surrounded by all noise sources. This article presented a thought process which may not be new (or sound obvious) and it will not replace existing proven mechanisms. However, aim is to investigate and compliment current mechanisms to enjoy the hobby better.

DE VU2XE - Kiran

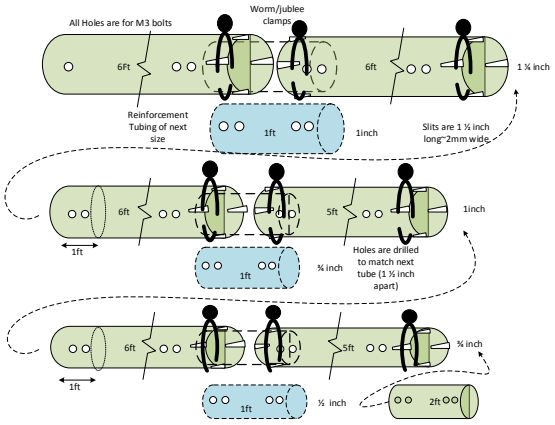
A 40mtr Vertical Project

For many experienced hams vertical antenna project may seem like trivial and obvious. However, to many more new hams putting up such antenna is an adventure by itself. This article, intends to share author's experience in sourcing, brewing, tuning and finally getting it on to air.

Given the spectrum of HF bands and its offerings to work DX even during the lower sunspot number years presents opportunity to experiment and advance in the hobby. While hexbeam and spiderbeams gave required juice to me on 20mtr and higher bands for more than few years, putting up a decent low band antenna was always has been on the back foot. Playing with Inverted Vee, Off center fed Dipole provided fun time to time, but lookout for better antenna was always ON.

There are local ragchew advantages of 40mtr, but most importantly for DXer, it is one of the staple diet during lower solar activities hi hi!. Just like any other projects for hams, antenna project also needs to have a set goal. Goal for Vertical is always low angle DX. With this goal in mind and simple mathematical calculations of ¼ wave vertical, it comes out to be approximately 33ft of vertical height required. I quickly set myself on the drawing board. Of course there is nothing to complicate the simple aspect of the vertical, though I wanted to get mechanically stable and yet easy to homebrew design. Some rounds to nearby industrial area aluminum dealers, I realized that I can get tubes of 1.5mm to 2mm thickness with decreasing diameters and 12feet lengths. I bought three tubes 1 ¼ ", 1" and ¾ " cut them in 6feet length for transportation and later storage if needs be. Then also another length of ½" tube for final adjustments. Aluminum dealer told me that they keep two types of tube materials. One is softer material and second one which he recommended is stronger non millable variety. I realized the toughness of material while using axo blade to slit the tubes and cuttings.

Back to the drawing pages with some measurements, I made plan for cutting, slitting, drilling all required tubes to make 33 ft. Following is the picture depicting the tube cuttings. I used M3 bolts of appropriate sizes 1 ½ " to ¾ " with split and normal washer combination. Then, as there would be gap in between the tube sizes, I used worm clamps to tighten them and hold tightly at the center. This prevents slinging of the pipes and other side effects (poor contacts) in later stages. It would have been better if I had searched some more for close fit diameters.



Total weight of the antenna is approximately 3 ½ Kg. Which is nothing compared to the other antennas I had experienced till date. Now, I wanted to have a mechanism to tilt, raise and lock the antenna easily. This is the time when I worked with VU2MUD for my idea of Tilt design (another published project on HRN).

I also researched for moisture resistant joint compounds with many VU homebrewer friends and found Aluminum grease as the material to use. Further research found me one Aluminum grease supplier from Mumbai who asked me to order minimum 1Kg. I took it happily as I may have many other projects in the future to put it to use probably. There are always easier/simpler ways, but I wanted higher quality of build and long lasting DX experience.

The more you study, the knowledge sometimes becomes bottleneck as well I think. I started worrying about the radial systems. Elevated or grounded? how many? etc. For an apartment dweller like me there is absolute priority to minimize impact on fellow

dwellers for longer hamming life! Many recommend 16 radials or more. I settled for two resonant elevated radials of 1.5 mm house wire. Just adjusting the angle and the height, I could manage good SWR. But, this SWR could be because ground loss addition to radiation resistance which ideally should be around 36ohms. Yikes., It hurts when you think a lot. Interested readers may refer to some extensive study by W8JI and other experts on the websites. Less than 24hrs with new system, not even a QSO made, one of the ground was bitten at multiple places and dragged all over the terrace by resident monkeys (yeah.. those are resident here before the builder constructed apartment I think and now they claim their rights by giving humans some trouble hi hi!).

I am back on to search and settled on 1.5 mm single core aluminum winding wire again available at local electrical stores. The best part of elevated radials are the tuning is easy by watching radial angles and feed point resistance. Typically on perfect ground vertical will be around 36 ohms. So when I saw around 50ohms on the analyzer though SWR showed around 1.1, I knew it is not right. Then I elevated the end of radial wires further to around 6ft to get that resistance down to around 42ohms. I could have furthered this exercise by adding further radials (ideal elevated radial count is around 6), but one has to see the practical limits on the common terrace we have. So had to settle for the 2 elevated radials.

With less than 50-100Watts, few US stations spotted me over Long Path that evening. However, it was hard to have a QSO due to noise it picked up. S meter was showing 55- 56 noise all the time. We are talking DX here and they are mostly weaker. Digging out Weaker stations requires techniques to reduce noise and increase the signal pickup gain. The second aspect of signal gain can be managed with better receivers at home and playing with Preamplifiers, RF gains. However, reducing noise and focusing on the required signal path cannot be done indoors. With this challenge at hand, VU2PTT Prasad came to timely help with N6RK loop he was homebrewing as part of VU Contest Group project.

N6RK technique is simple three piece device made for receive only aspect. It consists shielded Coax loop made with 75ohm RG6 (commonly found for cable TV use), Matching unit near to the loop and a tuner pot device in the shack. This loop provided me pleasurable DX experience. Now I could hear lot of DX stations when local 40mtr nets and ragchews happened around those frequencies. For most of the years those signal seemed to be in shadow of noise, now suddenly started emerging out in clear.

I used this combo of vertical and N6RK loop for my CQWW 2017 efforts. And I could clearly make out the difference. This project taught me that, there are people who are around the globe listening for you and waiting to make the contact, but we rarely make an effort to hear them. At my station VU2XE, I build small such projects and start operating with them. It gives me immense pleasure to build and then making farthest DX contacts during Contests. Ham radio provides me opportunity to advance my knowledge and have fun on the air. Is this not one of the fine tenets of our hobby?!

Results from VU2XE's CQWW CW 2017 contest summaries this project efforts.

Band	QSOs	Zones	Countries
7	**475**	**24**	**71**
14	150	17	46
21	370	23	63
28	8	2	2
Total	**1003**	**66**	**182**

VU2XE Kiran

References:

- Author's blog post on project parts and resources: http://kiranpadiyar.blogspot.in/2017/09/vu-home-brewing-parts-sourcing.html
- Some more images of the vertical : http://kiranpadiyar.blogspot.in/2017/11/40mtr-vertical-project.html
- N6RK Receiving Loop: www.n6rk.com/loopantennas/pacificon.pdf
-

Tilt Mount for Verticals & Small Masts

I am a single man-power operator. That was the reason I had a crank-up tower made to handle the hexbeam. I already had planned the positioning and the necessary height support that I would need when re-modelling the house we purchased in 2011. This can be seen in the photo. All I need to do is lower the tower, stand on the ledge near the water tank and the top of the tower is below my shoulder height to easily maintain or service the antenna.

But this being a 20m and above antenna, I am really stressed out for the 40m & 30m operation. Due to my property lot size, I just cannot think of a 80m dipole. Even for the 40m antenna, I need to go up at least 30' to have a decent dipole - using the neighbours' roofs for anchoring the ends. Lifting up a 30' GI/MS mast from horizontal to vertical position is just not humanly possible by one person. Getting someone to support – when you need it – is too much of a co-ordination.

A lot of tilting ideas kept crossing my thoughts at frequent intervals. But none materialized. Recently OM Kiran, VU2XE came up with a plan to put up a vertical antenna for the lower bands and needed to mount it on a short metal pipe. He wanted to use a tilt over base – not too big – just enough to take care of the size of the pipes that he had in mind – aluminium pipes.

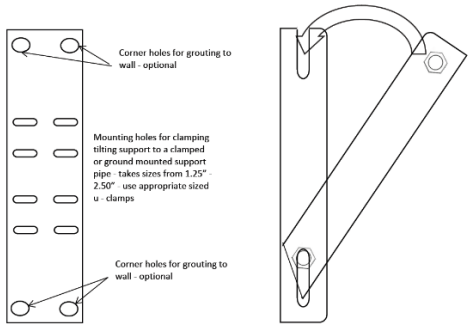
Browsing the internet, we came many designs – some commercial and some homebrew. A good thing about homebrewing for a small group or for our own use is that we have a lot of flexibility in designing. We chose to improvise using the pictures of a commercial design we saw, making it rather simple and an effective means of mounting a metal vertical antenna or to hold up a fibreglass mast (I use a spider pole – 12m in length to hold up my 40m wire vertical!).

Design considerations

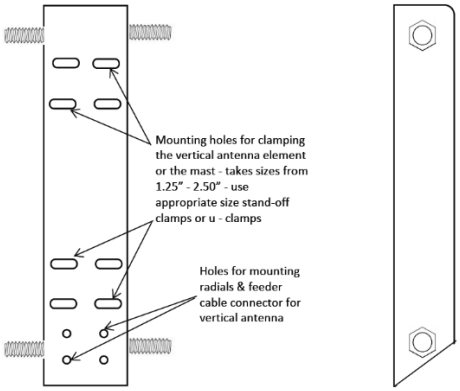
1. Flexible in terms of the diameter of the base support pipe to which it would be mounted on
2. Flexible in terms of the diameter of the antenna material or the mast that would be mounted on it
3. Tilting ease
4. Locking the two parts after raising it to the vertical position
5. As an afterthought – mainly because of my own requirement, capable of fixing it to a wall/parapet

Kiran came up with a rough sketch of what could be the ideal dimensions and using the services of my MQTH design engineer (hope no one from the MQTH reads this !!!) we had the CAD drawing in place. Back and forth with the discussion and I realised that my own requirement was to place it against the wall and not use another pipe to mount it. We finally decided to have an option in the same design so that we could grout it to the parapet wall using grouting bolts. Another slight modification to the drawing and we had the design finalized. We considered using SS309 without any coating but dropped it in favour of GI sheet with powder coating to take care of protection against weather. Off went the order to the machine shop – again a person who does job work for my MQTH – I had previous experience with his quality of work for another personal project and was very satisfied with the job and finish. It took less than a week from the beginning of the discussion to having the product on hand.

The concept of the back plate



The concept of the front (tilting) plate



The finished product came out quite nice. Since Kiran (VU2XE) was eager to put up his 40m aluminum vertical, the first set went to him and immediately utilized.

The feedback from Kiran was that once the back plate was clamped to a pipe that was anchored to the roof, it was actually a one man job to work on the antenna lifting and lowering while tuning up the 40m vertical using aluminum pipes.

You know what – there are a lot of us with various skills. With this project I discovered that I had mechanical designing aptitude!!! I was able to come up with certain ideas that the MQTH CAD designer had also not thought of. We just need to tinker and build something which is necessary for our own use. This gives us so much pleasure when we delve in to designing, do small improvements to it and make new friends!

With the successful completion of this project, I am keen to work on something again very soon.

De Madhu - VU2MUD/AT5M

CONTACT TIPS

Contacts in a circuit will create a loss in transmission as there is a resistance in any contact. The best contact will yield to creep resistance over time.

The best method is to solder, but is is not a solution for all connections

Material best suited for contacts is Silver plated contacts on brass base. Brass gives the rigidity for handling the contact and silver the best for transfer of all electrical parameters

Moisture is the number one enemy for any contact as it corrodes the surface of contact. To avoid this a Hermitically sealed contact is a permanent solution. Hot melt can be applied for as a seal to avoid moisture and air getting in.

Use of standard electrically tapes for outdoor sealing must be avoided as it dries up under sunlight and gives way for moisture to creep in. Silicone rubber tapes give better results.

Keep the contact dry and frequently check the corrosion on the surfaces (Keep record of SWR readings for comparison)

Surface can be cleaned before assembly if the plating is not damaged

Prakash Srinivasan
VU2IBI (ex VU3PRH)
Bangalore

ATTENTION - CW GEEKS!

All copies of the English-language version of Morsum Magnificat, the Morse Magazine, are now available for free download from the website of Lynn Burlingame, N7CFO. This includes the 89 issues published from 1986 to 2004. Mike Feher, N4FS, was able to provide the missing editions, which Randy Cole, KN6W, scanned for viewing. The 89 issues of Morsum Magnificat contain more than 4,000 printed pages, covering all aspects of Morse telegraphy.

The newly available downloads also include "The Story of the Key: The Best of MM-1," by Louise Ramsey Moreau W3WRE, which includes a list of American telegraph instrument makers from 1837 to 1900, compiled by Roger Reinke. In addition, there's "Key WT 8 Amp Worldwide Survey: The Best of MM–2," by Tony Smith G4FAI, an updated and revised version of the 54-page booklet that provides information about the famous military Morse key, of which more than 100 versions were manufactured in six countries.

Also available: The MM Q & Z Codebook, (English), compiled by Rinus Hellemons, PA0BFN, and Dick Kraayveld, PA3ALM, publishers of the original Dutch version of Morsum Magnificat. The codebook lists all Q & Z codes in their original applications, including a copy of the original single-page Q-code guide of 1912.

All copies of Morsum Magnificat or associated publications downloaded from the N7CFO website are for personal use only and may not be downloaded or distributed for any commercial purpose. — Thanks to Southgate Amateur Radio News via Tony Smith, G4FAI, co-founder of the English edition of Morsum Magnificat

DXpeditions - and how to work them!

There is some confusion amongst newcomers about DXpeditions and working them. Having been a DXer myself and also as part of couple of DXpedition teams, this article intends to share perspectives to bring some clarity of these operations.

When I started on HF in 2001, I had no Elmer to guide me on operating practices. I would meet some senior hams on 20mtr HF then and they used to give me some tips. But on DXing side, I did not had much interest in DX chases, neither I was aware of the practices. I often called on DXpedition transmit frequency and got into troubles when some high power policing station shouted at me saying QSY UP UP !. I think, I might have been called as LID or some similar lingo in DX circles then. But as I started getting to know about DX operations and chasers, better practices became obvious. In this article, I try to shed light on those aspects so that we can keep our operations top notch.

Let us first clear our understanding about DXpedition:

No. 1. DXpedition is not a field day or field trip:

Many of the hams feel that DXpedition is adventure tourism or a trip to some exotic place to relax and have radio on the side. This is absolutely a misconception. DXpedition is a serious radio operation to bring that DX entity/IOTA on the air so

that thousands of DX chasers across the globe get to work them.

In a field day, the objective is more towards improving portable station deployment similar to emergency preparedness, educational, trying out new antennas, public awareness etc. and most importantly having good fun with fellow hams. In a field day, racking up QSO may not be #1 priority, fulfilling other objectives are the priorities. There are some instances where hams go on a field trip to practice for upcoming larger DXpeditions as well.

No. 2. DXpedition members require to be having all-in-one skill:

DXpedition member needs to be having something of everything skill in the hobby such as technical knowhow, idea of propagation paths, antennas, working as team skills, Computer logging and most importantly they will require to have pileup operating skills. All this comes when all members are regular on air with HF DXing or contesting. Pileup management is art by itself and losing control over it will cause havoc. On some DXpeditions, physical fitness becomes key to even get to the location and for prolonged hours of operation (normally 12 hrs/day is lowest expected per person). It is also about mental ability to synergize in a group with varied team skills. Staying unison with team and obeying to the leader is must is such serious operation. Ultimately getting to DXpedition without being competitive at home station or being physically challenged may prove one to be unproductive and burden on rest of the group.

No. 3. DXpeditions require elaborate planning:

Site selection, number of stations, equipment to carry, type of antennas to use, propagation patterns from the site to various geographies, operation rosters, WPC and Local administration coordination, ham community messaging/expectation settings, accommodation, personal safety are key topics which cannot be under estimated as they hugely impact success of the DXpedition. Unlike field trips, once the DXpedition goes public, there is lot of questions which needs to be addressed even if the operation is self-funded. No mention about the detailing required if the sponsoring is requested from foundations across the globe.

As an example, one can read about the extensive planning done by mega DXpedition for VP8 land at http://www.intrepid-dx.com/vp8/plans.php

No. 4: DXpedition is NOT a means to generate income:

Almost all the cases, DXpeditioners have to spend way beyond they get as donations to offset costs. Never think that they go to islands to party or to take a tour of islands. Their write-ups may be showing awesome pics of clear waters, lagoons etc. but very rarely they enjoy those. Often they have to work round the clock operating, working on antennas etc. Some remote DXpeditions require thousands of dollars due to the transportation costs. Only partial costs would then even be raised as donations. For example, one of the most sought after Dxpedition to South Sandwich (VP8STI) and South Georgia (VP8SGI) in 2016 had a budget of $425,000, and more than half of the cost was borne by fourteen of the operators who went on the expedition. The operation was top notch giving thousands across the world and VU the most required ATNO QSOs including myself (even with 50W power I had used then). It all comes with love of DXing than for any other reason.

Now as we set these aspects clear, following are some guidelines to DXers:

1. **Get Acquainted with SPLIT mode**
   Almost all DXpeditioners work in VFO SPLIT mode. SPLIT mode is where DXped transmits on a fixed frequency and listens on a secondary frequency. The listening frequency normally varies as per instructions from the DXped operator. For Example, if you hear **TU VU7T UP 2** on CW, You just heard him completing a QSO with someone (that is why TU), then his call sign identifier and instruction on where he is listening (UP 2 – he is listening for 2 KHz or above). From home operator perspective, it means that you will fix receive frequency to one of the VFO to DXped signal (all modern rigs have VFO A and VFO B and when you activate SPLIT on your rig, you can switch between VFO A and B to set them to RX or TX) and by carefully listening to how the DXped operator is responding to the caller (in case you are hearing other ham getting the report), you can start transmitting your call on that/nearby VFO frequency. This comes with practice and more practice. Sometimes much frustrating taking hours and days in the DX chase.

   Example of split work: If VU7T is operating on 14200 KHz and says “listening up 5 to 10”. That means he is tuning and listening

to any frequency between 14205 KHz and 14210 KHz. If a home operator is heard partially by DXped, he will come back saying “VU2X??” or “VU2X 59”, then you repeat “VU2XE VU2XE 59”. DXped operator will confirm returning your exact call and “Thank you” or “73”. That’s it!

2. **Listen and be with the rhythm**
Normally DXpedition QSO are very short, “VU2XE 5NN TU” is routine. Working 120 to 150 + QSOs/Hour is normal during peak hours of the operation for the DXped operator. When calling DXped, do not call repeatedly. One call is normal and calling twice may be considered too much. Some hams repeatedly give out calls even when DXped is responding to other callers. They are blind callers often causing QRM on the band. On rare occasions this might be unintentional or due to lack of skill of the operator. As best practice build your listening skills.

   As my experience goes, more time you spend on listening gets you closer to the chase. You come closer and closer to the DXped operator’s rhythm. When I worked at VU7T as DXped operator on CW, I would normally start at 2 KHz up and slowly move up after couple of QSOs each time till I hit 5-6 KHz up and then used to tune down. This was always not true, some of the time, I did random movements when I found many followed my pattern at once.

   Often, the patterns of the operation will be hinted on the respective DXpedition websites or QRZ.com pages. One may get them from “How to Work us” sections. Also what we found that most successful DXers get QSO in log by carefully observing the DXped operator for prolonged time and only after that attempting to Transmit. A very excellent composition of working DXpedition is mentioned at by another recent Heard Island DXpedition team at: https://vk0ek.org/how-to-work-us/

3. **Never blindly follow a cluster spot:**
Cluster is very useful in the DX chase, however double check the spot by QSYing to the frequency spotted and observing the pattern of operation first before you press that PTT or key. There are lot of false spots and pirate operators which can distract newcomer DXers. Sometimes DXclusters become much critical DX Chasers. For example, during 3C0L Annabon Island DXpedition, the DXped operator was working EU and NA very fluently. I could only here 3C0L giving reports to EU stations but no sign of EU signals here. That was because we were off direction for EU station’s beams, but 3C was using verticals. In such situations cluster spots indicated that 3C is tuning gradually up and then going down. So when a spot was made, I could guess that next he may be listening to somewhere above that frequency. In such situation, one could only make blind calls based on the cluster observations as an exception!.

4. **Never transmit when DX is calling for some other geography or number:**

   DXped operators are made aware of propagation openings to various geographies by pilots (pre identified guides who often communicate to DXped leaders on condition and progress), by leaders who observe difficult to get geographic QSOs coming by. DXped operator may start asking for North America/Oceana etc. based on propagation openings or to control callers, do standby during such calls. It is the only way hams in those geographies get through the pileups. Sometimes operators calls by numbers. I.e. if he calls as “number 2” then VU2XE has a chance to call on the split frequency. If you ignore these instructions and keep on calling, DXped operator may call your call sign and never log you or simply state that you are causing QRM and pause operating.

5. **Always give your full call sign:**
Don’t try to deceive DXped operator by giving partial call signs. Such as “XE” to hint you are station from Mexico, but then give VU2XE which may get the operator off rhythm. We found many stations from Europe especially Italy using this deceiver technique. They call as “Kilo 1” and when we responded “Kilo 1 again”, they come back as “Italy Kilo 1”. This often leaves new operator with feeling of getting fooled. As the DXped progresses, the operator then learns these tricks and stops responding to partial calls.

6. **Pace your QSO:**
   On CW never be too fast than DXped operator. Listen carefully and adjust your sending speed to match his. If you are a QRS (Slow speed) operator, you need not worry. Chances are that he will pick your call and slowdown for you. If you are QRP operator, need not mention as "QRP" again and again with the call, a good DXped operator will stick with weaker signal till he get the call right.

7. **Do not cause QRM:**

   a) Do not transmit and tune by tuning on the DXped frequency
   b) Do not try to police by saying QSY, UP, LID etc. you will cause more QRM
   c) Do not repeat your call signs if the DXped operator has received your call right
   d) Do not ask DXped operator to QSY to another mode and band
   e) Do not get in to casual conversation mode with DXped operator
   f) Do not start another CQ on same or nearby frequency
   g) Do not ask DXped operator to listen for your friend
   h) Do not give out DXped call and your call again and again when DXped operator already giving your call and report. Avoid saying "VU7T DE VU2XE UR RST 5NN DE VU2XE TU". Keep it short as possible as "5NN TU" when DXped has given report as "VU2XE 5NN" to you already.
   i) Be patient enough on the band, just because one is QRO and can listen better, does not give a chance to yell at DXped operator when he is trying to slow down for a weaker station
   j) With advent of SDR and spectrum displays, nowadays some callers follow the DXped operator with precision. This is good arsenal for home DXer incase if one is really looking for QSO, but there are deliberate QRM makers who wants to disrupt the operation. Use the gadgets for betterment of the hobby and not to destroy peace.

Finally, some frustrated ill-intentioned hams cause QRM by playing recorded messages, sending tones, repeating calls or jamming the operating frequencies. This type of Deliberate QRM or DQRM is harmful for hobby in general and DXpedition in specific. Unfortunately if it grows, this becomes showstopper for the DXpedition ☹.

(8) Understand the meaning of ATNO

ATNO stands for All Time New One. A DXer takes pride is contacting DX entity for the first time with any operating mode possible with that DX entity. When DXped asks for ATNO callers, he will not know if a caller is ATNO or no. but he expects you (DXer) to be honest ATNO caller, so respect that aspect. Don't be smart and act as if you need the QSO for the first time for band fill sake. We spend considerable amount time especially on last days of the operations looking for ATNO callers.

(9) Appreciate the DXpedition and operator:

Do not get frustrated and display such behavior on the bands, it will be taken as very bad practice.

Be kind and appreciate efforts made by operators, they spend days together leaving family, work for the joy of DX thrill and giving DXers the QSO.

If there is a feedback, give them in positive manner in individual email after the operation.

Last but most importantly, do not get into mode of gossiping and bad mouthing of operation or operator. There are lot of constraints and hardships DXpeditioners go through to put the stations on the air. There will be other operations coming in the future. So if DXer did not work the station, always there will be some opportunity in the future.

Whatever QSO count DXped make, it is worth every bit of their efforts. Best aspect of DXing is that it helps one to develop humbling attitude, improving knowledge, respect for people and most importantly being better fellow human being!

73,

DE VU2XE Kiran
ARSI Contest and Awards Manager
Opr: VU4KV, AT5P, VU7T

GEO Quarterly magazine available for download

The December PDF of the weather satellite magazine **GEO Quarterly** produced by the Group for Earth Observation is now available for free download. The aim is to enable amateur reception of weather and earth imaging satellites that are in orbit or planned for launch in the near future.

http://www.geo-web.org.uk/geoquarterly.php

96th anniversary of 1st transatlantic shortwave transmission

Monday, December 11th, will mark the 96th anniversary of the first message to ever be sent across the Atlantic Ocean using shortwave frequencies.

The original event in 1921 was called "The Transatlantic Tests" and was organized to determine if amateur radio signals could be heard in Europe using short wave frequencies. Several stations participated by establishing contacts between the U.S. and Europe

DXCC Country/Entity Report

According to the Amateur Radio Cluster Network for the week of Saturday, 2nd December, through Saturday, 9th December there were 229 countries active

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