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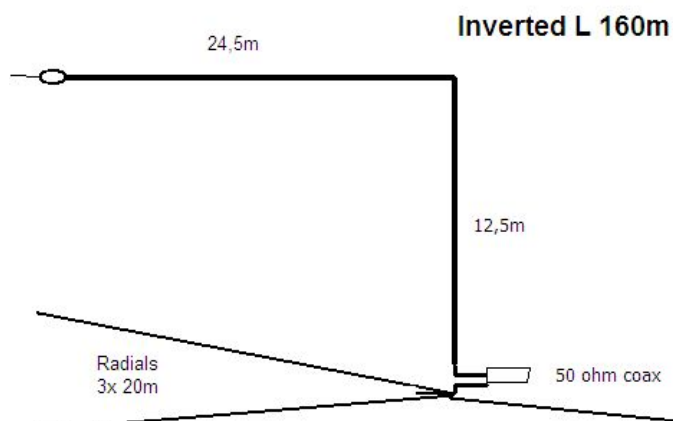
# 0-100 on 160m

My experiences of exploring the top band aka Gentleman's band

## How it all started

During the expeditions to Lakshadweep Is during 2016 and 2017, we had numerous requests to be active on 160m band also known as top band / Gentleman's band. When we declared our inability to be active on low bands mainly due to logistic bottle necks and also due to inexperience of operating on these bands, we had a surprise- many of them requested that we try 160m from VU itself from where it is considered equally rare. While discussing many options of a Dxpedition or IOTA activation in the coming months with Kiran, VU2XE, he came up with the idea of trying a low band expedition from a quiet location. He and Siddhu VU3 NXI decided to give it a try from a location close to Udupi. Details of this expedition can be found [here](#).

While planning for this expedition, Kiran encouraged me to install a 160m antenna so that at least we can try a VU- VU QSO. All of us were newbies on this bands and had no clue about propagation or about behaviour of the band in general. I had plans of putting up a 80/160m



An example of Inverted L..

Please note the feed method which worked for me was a hairpin and I am using only 2 elevated radials.

antenna for quite sometime and was discussing with Prasad VU2PTT about different possibilities. After long deliberations, I decided a mono band inverted L was the best option I had at my QTH. I planned to go with elevated radials since the antenna will be installed on my roof. On December 01 2017, I put up the inverted L with 2 elevated radials. When I connected my antenna analyser, I was disappointed to see a very high SWR and a very narrow tuning at resonant frequency which was well beyond our band (1820-1860 kHz which later changed in 2018). After repeated trips up and down the roof and many to the ends of radials which were tied to compound walls of our layout, the best I could muster was an SWR of 3-4:1 within the band at 1830 kHz and that too with an extremely narrow usable bandwidth. The tuner in my amplifier was not happy seeing this mismatch and I decided to try the built in tuner in my radio and was able to get away with this mismatch.

I discussed the issue with Kiran and Siddhu and was surprised that they never faced such an issue. Some more tests with my antenna analyser showed the feed point impedance was around 17 Ohms and was the culprit. I realised, I failed to understand the antenna before I put it up. After a quick check with Kiran again, I realised they were using only one elevated radial and had a higher feed point impedance which meant an easier match with a 50 ohm coaxial cable.

In a hurry to try out the new antenna, I did a test with Kiran at And later with Siddhu as well for the first QSO on 160m.

## CQ DX on 160m

On 02 December I decided to call Cq and see how the band is. I was surprised to see lots of spots into EU and before I realised, I was running a pileup. I worked stations and the pileup grew faster than I could manage mainly due to lack of good rx at my end. Noise levels were easily almost S9 on inverted L and pulling signals out of this noise proved to be a very draining experience. At the end of few hours, I couldn't continue any further. After first few nights on air on

160m, I discovered that many stations were copying me very well even with a highly compromised feed system. I wanted to ensure I have a s close to 50 ohms at feed point so that I can run with my linear amplifier. Another few rounds of discussions with Prasad and Sangeeth VU2TT ( A45TT) who operate on 160m from A47RS/ A44A I decided to try a hairpin match at feed point. After a few trials I fixed an inductor at feed-point which was wound with 4 sq.mm. wire on a 1 inch PVC former. The SWR now was 1.05:1 at 1830 and I was delighted at the results.



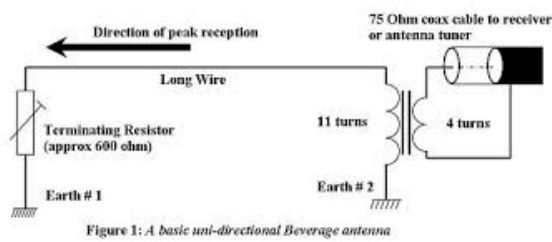
N6Rk loop as installed at 9V1EA

**RX antenna** As I became a regular on 160m, I started getting emails about how others could copy me and questions on my receive antenna systems. I realised I am generating a bigger pile up than I had imagined and that I better improve my rx abilities. I had used an N6RK loop as described in this NCJ article for my 80m runs. Prasad VU2PTT had fabricated some PCBs after writing to Rick N6RK and had built a few units as an initial run and I was one of the beneficiaries. I found this antenna helped me hear many stations I wouldn't have heard otherwise on 80m. But this loop which is

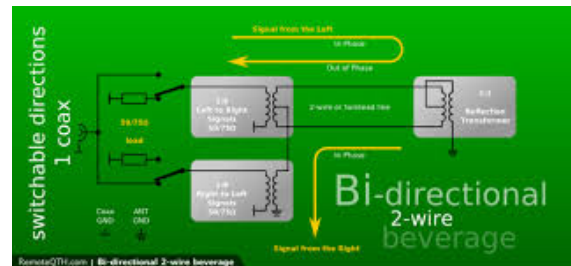
designed for 160 and 80m, didn't perform well for me on 160m. I realised the signal levels out of

this loop was too low and I didn't have suitable preamp. Even Kiran had reported same results during his low band Dxpedition.

I started looking at my options for a better RX antenna. During our preparation for VU7 Dxpedition,



A simple beverage antenna.



Reversible beverage form remote QTH.

I had ordered a beverage kit from Jan OK2ZAW of [remoteqth.com](http://remoteqth.com). It was sitting idle and I realised I can probably try and see how it fairs for me. Raja VU2KSJ used to repeatedly advice me to consider using a beverage for my 80m activities, but I never realised how important an RX antenna is before coming to 160m band. On 80m, it was useful, but was not a must ( or so I thought). So all I wanted now was some wire. Initially I was ready to go shopping for a roll of insulated wire for house wiring, but during our discussions, Raja had mentioned how he used bits and pieces of wire he salvaged from old transformers and motors. Inspired by this, I set about finding a suitable wire for my beverage. I didn't have any readily available and then suddenly remembered I had some old CAT5 cable lying around. I found a length of 30m cable in my junk and decided to strip it. With the help of my Man Friday- my driver Manju, we successfully removed all 8 strands from the cable, this was a mammoth task and our hands were aching from all the untwisting, turning and re winding it all on a new spindle fashioned out of old PVC pipes. I got a total of 240 metres of wire which was more than adequate for my proposed 80m beverage. I strung 2 pieces of wire in a NW/ SE direction which was the best direction from my QTH to target EU and Far East. For switching directions, I decided to use a home brew switching box from my phased vertical antenna which was built by Paul A65DR. Armed with the beverage box, I had a reversible beverage now on Dec 16th 2017 and results were stunning. some of the stations who were unreadable on my 40m antenna was loud and clear on my beverage. Armed with new pair of ears, I set about exploring the band even more and was confident on taking sked requests.

**Further RX improvements.** The new RX antenna helped me bag some more of EU stations and more importantly I could hear even W stations just before our sunrise peak. My first QSO with W land was N3SL on 22 Dec 2017 and that day I went on to work 4 more W stations. The next day, again I was able to work 4 more from US. From here on, hearing and working US was not very difficult. Only problem was these were big gun stations with very good Tx/Rx antennas. Unless I improve my Rx further, I wouldn't be able to give out that elusive Zone 22 /VU QSO to many. By the end of winter ( considered best for low bands) I had 85 countries worked and most of them confirmed on lotw or in the form of cards. After using an RX antenna, I felt i needed a preamplifier as well. During discussions with Gopan VU2XTO who is a also a keen CW operator with whom I used to share my QSO recordings, he suggested I try a 160m BPF and preamp. He even built the unit and send me by courier to test. I owe some of my QSOs to this BPF and preamp from Gopan.



My antennas at sunset.

One common message I found on all the emails I received was appreciation of immediate QSL on lotw. We, as VU stations, have a very bad reputation when it comes to replying to QSLs and I wanted to change this trend by being prompt with all QSL requests.

In April 2018 after working 3B7A, I decided to get ready for pre monsoon and removed my beverage and Inverted L antennas . The Tx antenna was tied with a normal nylon rope which did survive the first few months, but was showing signs of giving up. During one of my trips to YB land, I came across a fishing rope which the locals use for almost everything and I immediately procured a few rolls for my use. These were multi strand nylon rope specifically used to make fishing nets and I was sure will stand the harsh elements better than usual ropes we get locally.

By Sep 2018, I re installed my Inverted L and this time, we had some construction where I had installed my previous beverage. I was disappointed that this season, I mayn't be able to install the beverage. But on low band reflector and low band chat groups, I have heard people say, any beverage is better than no beverage. I started scouting for suitable location and came across a row of trees right in front of my house in the N/S direction. I decided to install my beverage here for the season. I started season on 09 Sep 2018 working UA4CR and DU7ET. Bob DU7ET is a hard core low band operator and was a great influence in me running the low band myself. He used to be on air almost every day even during the summer and rainy season. His dedication inspired me to be QRV as and when my schedule permits.

This season, I was hopeful of reaching my 100 on top band, but every single country was proving to be more and more difficult. On 5 Sep 2018, I had Venu VU2MV visiting my shack. He is an old timer and a CW enthusiast and was very impressed on my activities on low bands. He promised that he will be QRV on 160m soon after his retirement and moving back to his home town where he has sufficient space for Tx and Rx antennas for 160m. He went on to write a small but detailed

and inspiring post on Facebook where he had posted some pictures and mentioned my interest on 160m.

I had tried to search if anyone from VU has reached a DXCC, but didn't find any in the ARRL list. I had a discussion with Prasad VU2PTT who is a keen contester and has been leading the world class contest station A44A during CW contests. He being someone who can analyse my activities advised me to steam up and finish the 100 as soon as possible. We analysed some countries which were considered "low hanging fruits" like 4S, 9N, 8Q7 etc were still in my wanted list and after some careful analysis we figured there is a fair chance of me making it to 100 if I can work some of the upcoming dxpedition. I tried at Kh1, but was disappointed to not even hear a squeak on 160m. But I heard them very feeble for a few seconds for an 80m QSO. Next was TO6OK from Mayotte. I listened to them for 3 days and managed to get a peak before our sunrise for a few seconds and completed my QSO. Karel Ok2ZI was the operator at the other end and I salute his patience and persistence with which he pulled me out of noise.

Paul A65DR was going to be in VK9 and I was in touch with him to see if they had any 160m plans. Initially they were hesitant to come on 160m, but after Tom SM0CXU conformed his plan to be onboard they decided to put a station on 160m. I have a bad ear towards E and SE and I was not sure whether I will hear them on 160m. But listening for 3 days I heard them on day 2 of their operations on 160m just after our sunset. I immediately let Paul know I can copy them and he promised we will try for a QSO next day. Next day, signals at my Rx was not that great but I managed to work them on CW, thanks to Toms great ears. #87 was in the bag!

A special mention about my #82 which was VU4G John ( G4IRN) who was doing a solo dxpedition to VU4. John never had plans for 160m and while transiting Bangalore, I had the opportunity to host him at my place. John is a seasoned traveller and an excellent CW operator and had loads of experience to share. While he was leaving for the island, I requested him if we can try 160m. He, being a one man dxpedition, was not sure whether he can, but promised to give it his best and he did! Despite high noise levels and a no RX antenna, he copied my signal on 160m.

9N was my #88 which happened through a Japanese dxpedition team to Nepal. I worked 4S7, thanks to Riyad 4S6RYD and Kamal 4S7AB and the next dxpedition was Z23MD which was #90.

After this going got really tough and endless CQ calls got very few responses and no new ones. One night while I was endlessly CQ-ing, I heard a very faint copy "RRC" I sent RRC? then heard P6RRC. I was quite sure it was SP6RRC and gave him an exchange. But he came back sending his QSO a few more times and I couldn't believe my luck, It was EP6RRC! Iran dxpedition who were probably just testing their antennas on 160m. I would have been in the pile of stations calling them from next day onwards, but I was lucky to hit the jackpot that night.

I was thinking CQWW CW contest will give me the much needed 5-6 stations boost to get me in touching distance of my 160m DXCC, but conditions were really so poor that I didn't get even a single new one in the contest. But soon after the contest, I worked AP2AM to reach 92.

I have been trying to have a QSO with ZS for a long time and I had received a sked request from ZS2DL Don through VU2NXM, Basappa who himself is a great CW operator and a member of the VU DX and Contesting group. I got in touch with Don who had to reinstall his vertical for 160m in his salt pan and on Dec 02 2018, I got through to Don.

**160m operations from a high rise apartment?** Prasad VU2PTT had requested to take a N6RK loop kit to 9V1EA, Jun who was having trouble with rx on 160m from his high rise building in Singapore. I was happy to carry the loop for Jun during one of my trips. Jun invited me to visit his apartment and I was astonished at his operating setup!. He had a detachable fibre pole antenna on top of his 35th floor apartment and was working even on 160m against all odds. The noise levels at

his apartment was through the roof and I realised I am very lucky to have sufficient space to setup antennas as well as a relatively lower noise floor. Jun promised to try a QSO on 160m CW and on the same night I worked Don, I worked Jun with a very good signal.

He told me the loop helped him hear me which wouldn't have happened otherwise. He had signed a QSL card for our eyeball QSO while we met and had mentioned, next time I will give your 160m QSL card and he did! During my visit to 9V on 04th Jan 2019, I visited Jun again at his apartment and we exchanged our QSL cards! . Jun has written about his experiences of working on 160m form Singapore in CQ Japan magazine.

Many sleepless night later once after 1730 UTC I thought I heard the call sign K9FD? I initially thought it might be a busted call thinking K9FD was in US and there was no chance of hearing them on 160 at that time. But checking the QRZ page I realised K9FD is Merv from Hawaii and it would have been about an hour or so after his sunrise. Not very sure whether it was intact K9FD/KH6, I decided to write to him to check if he was trying to call me. To my surprise, he immediately wrote back saying he was thrilled to hear a VU almost 1

hour after his sunrise, but when I called him back, the signals started fading!. We agreed to try again in the coming days and 2 days later on 04th Dec 2018, I worked Merv on CW for my #96. He wrote to me saying he has never heard a VU at all and was excited to have a QSO.

#97 and #98 came in the form of BV1EK and EK3GM. Ash 3V8SF had written to me a few times he was trying to work me and even though he heard me a few times, we never had a 2 way QSO. On 20th December I had come back from duty late night and decided to try 160m and Ash was QRV. Before I knew, I had worked him!. He immediately sent me a recording of the QSO and asked me if I had made any recording? The reality was I didn't expect QSO to happen so soon and never even bothered to keep the record button ON!.

Slowly, it dawned on me that I might just get my sought after #100 soon. I was on leave from 21st to 31st December 2018 and our family holiday plans were cancelled and we decided to take it easy and spend time at home. Time at home meant more time on 160m for me!. I started calling CQ more often and on the night of 21st Dec itself, I heard Harry JD1BMH on 160m CW. I called him a few times and I thought I worked him, but the stress was beginning to tell when I repeated my recording of QSO. I was not sure whether he sent VU2CPL ? or did he send something else? QSO was busted? Worried about loosing that #100, I became a LID ( Lid is a DX ing parlance when some one incessantly calls the DX without proper listening) and started sending my call again! Harry came back to me 3 times I think. Having reasonable reassurance now, I stopped calling. Later on Harry congratulated me on my DXCC on 160m and very politely mentioned " you were very loud". I felt like burying my face in the sand!!! Embarrassed would be an understatement!.



Author at 9V1EA, to exchange 160m QSL card!

I went on to work Oy9JD on 27th December on 160m and 80m with excellent signals and then on 28th I worked Mehmet, TA1CM as my 102. I was very pleased when I received a mail from Mehmet TA1CM that I was his #100 on 160m!!!!.

I continue to work on 160m and 80m and now 60m as well and enjoy providing the much needed VU/ Zone 22 QSO to many. I am also proud to say that I could manage a decent RX setup which worked not only on 160m, but on other bands upto 30M despite all limitations of space.

For those who are planning to try the 160m or even 80m, I would politely suggest getting their RX antennas up. There are many options available in the form of loops of various flavours like N6RK, mag loop, K9AY loop and even flags- EWE and pennants. **160m is a lot of effort, but each station you work is a new friend for life.** On no other band, you get a mail or message etc thanking you for almost every QSO. If not for a dxcc/ award, try 160m for a great QSO experience. If you know CW, you will enjoy it. If you don't know CW, try to learn the code, you are missing a lot of fun in your life. If CW is impossible for you, you are out of luck. In India post NFAP 2018, our 160m band is cut down to 1800-1825 kHz which means you cannot TX on 1840 which is the frequency usually used by everyone for FT8.

This write up would look like a thank you note to many of our friends. It is not a coincidence. It just proves that this feat was result of many well wishers who dedicated their time and effort and shared their experiences so that I can pursue this new band.

Some of the statistics for those who enjoy number crunching!

**As on 10 Jan 2019.**

Number of QSOs **1622** of which **1250** are unique calls.

Countries Worked **102 ( 90 CW rest FT8)**

CQ Zones worked on 160m **29**

Maximum worked country UA, UR and DL all more than 100 QSOs UA is an astonishing 393 QSOs.

**Continent wise break up**

Europe **1280** Asia **264** North America **45** Oceania **16** Africa **14** and South America **3**

No QSOs yet with Antarctica on 160m.

If anyone needs any help in setting up their stations for low band, I would be glad to share my experiences. I am available at [vu2cpl@gmail.com](mailto:vu2cpl@gmail.com)

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