

A TRIP DOWN MEMORY LANE

by R. Jayaraman, VU2JN

As we grow older, the future becomes less and less interesting, so we turn to our past and relive the more interesting moments of our life. It is with a sense of nostalgia that some of the interesting moments of my involvement with electronics and ham radio are presented here. The prompting for this write-up came from my local ham friend Sunu (VU2SXA) who has been pressing me to write my reminiscences.

Dawn of the Transistor Age:

It was in the year 1956, just after my graduation, that an article on Transistors caught my attention, and left me itching to build a simple radio employing the tiny 'wonder device'. Early in the year 1957, there appeared a Philips advertisement in the newspapers announcing the availability of the first-generation transistors in India. The Philips dealer in Trivandrum was begged and coaxed to order and get me a few pieces of OC-71 and OC-72 transistors. A MW crystal radio with a 4-transistor audio amplifier, as described in the Philips handout, was assembled. It was my first venture with the soldering iron! The squeaky sound from the loudspeaker of the battery-powered breadboard radio left me greatly thrilled.

In 1961, a 2-band transistor superregenerator receiver was built by me using the highly delicate 'surface-barrier transistor' SB100 which had appeared in the US market. Two precious pieces of SB-100 were obtained from an obliging US dealer by sending IRC's. SB-100 had a peak voltage rating of 4.5V, collector dissipation of 10mW and cutoff frequency of 45MHz! The superregenerator worked fairly well, but was no match for the superhets employing OC-171 transistors that appeared soon in the Indian market.

Entry into Hamdom:

Band conditions were good when I became a ham in 1964, even though the period was near sunspot minimum. 1958 was an all-time peak with a sunspot number of 255. I missed it, but our late ham friend Karan (VU2BY) -- uncle of the present ARSI President Gopal (VU2GMN) -- who was living in Trivandrum for some time in the nineteen sixties, used to tell us about his working US stations in the nineteen fifties on 25 watts AM! The record widely quoted then was that of a young Trivandrum ham (who dropped out of the hobby later on) working US stations with a 6V6 final!

The sunspot peak of 1970 was somewhat inferior to that of 1958 but was still good, and the excellent band conditions permitted me to reap a rich harvest of DX on 40, 20, 15 and 10-metre CW.

I cherish the early QSOs that I had on 40 metres with senior hams like Neel (VU2LN) and Kuki (VU2VK) in Trivandrum, Vasana (VU2NS) in Salem, Swamy (VU2TX) in Udumalpet, Hari (VU2TH) in Kochi, Venkat (VU2SV) and Ranga (VU2GW) in Chennai, and Bala (VU2LE) in Karaikudi. Neel and Kuki came on the air in 1962 and, being local hams, became my family friends. Neel was a witty person and a brilliant engineer of Kerala State Electricity Board. I used to go to him for clearing my technical doubts. Here I must mention a 'golden quote' of Neel. After getting disenchanted with the working of ham clubs all over India, Neel declared, "**Hams should meet only on the air!**" He passed away in 2007, aged 80 years. Kuki, a doctor by profession, is now settled in Bangalore, and is using the tube-type receiver and transmitter that he assembled during the sixties in Trivandrum. Vasana was a retired principal of a Salem college who strongly believed in simple equipment and helped many SWLs in and around Salem to become hams. He passed away in 1991. Swamy, an agriculturist of Erisinampatti near Udumalpet, was a self-taught experimenter and a much-loved senior ham. He passed away in 2012. Hari, who was a scientist in a national laboratory and a guiding ham of Kochi, is now settled in Vadavalli, Coimbatore and is not active. I recall with pleasure my visits to the QTH of Vasana, Swamy and Hari. Venkat is a gifted homebrewer whose chassis work and construction have always been superb. I made two visits to his QTH in Chennai in the nineteen sixties. Hari and Venkat are aged 77 now. Ranga and Bala belonged to an elite group of CW DXers. After building my CW Keyer, I enjoyed having QRQ CW QSOs with them. I have also had the pleasure of meeting them. Sadly, they are no more with us.

Two other hams who became my family friends in the late nineteen sixties were Guhan (VU2TG) in Kottayam and Raj (VU2HY) in Nagercoil. Guhan, who was an electrical engineer like Neel, was an expert on hi-fi systems, and had a superb hi-fi setup in his house employing a 15-pound (!) gyro-controlled turntable having a costly Sorensen pick-up, hi-fi valve amplifiers and big speaker systems with a flat

response down to an inaudible 15 Hz (however we could feel the 15 Hz output by the tingling of our skin!). After becoming a ham, Guhan built a superb 150-watt plate-modulated transmitter which used to put out a broadcast-quality 40-metre AM signal that was heard all over South India, even in simple transistor radios. My 3x1625 PA employing a carefully-designed screen modulator with carrier control came close to Guhan's rig in quality and punch, but couldn't equal it, proving that plate modulation is unbeatable! Quite a few hams have told me that, as SWLs and budding hams, they used to enjoy listening to the 'technical QSOs' between Guhan and myself. Sadly, Guhan passed away in 2000, aged 75 years. Raj, an agricultural scientist, picked up ham radio from scratch, and became a good homebrewer. He passed away in 2011, aged 78.



I also cherish my QSOs with departed hams Prof. Paranjpe (VU2AU), Panditji (VU2BX), Tipi (VU2TP), Micky (VU2CQ), Joe (VU2JA), Girimaji (VU2GX), Menon (VU2KZ), Chauhan (VU2MV), Balram (VU2FB), Das (VU2CSD), Rao (VU2NO) and Chak (VU2TTC), as well as QSOs with active hams Karnik (VU2CK), Kelkar (VU2EN), Zal (VU2DK), Paran jr. (VU2AU), Lalit (VU2LB), Ganesh (VU2TS), Jam (VU2RQ), Sathya (VU2LR), Saif (VU2DX), Sarma (VU2LV), Kutty (VU2PKK), Nath (VU2PRV), Thyagu (VU2PTR), Hegde (VU2HEG) and many more.

My 4-wire Transmission line!

For 6 months after coming on the air, I had to manage with a homebrew feeder since RG-58U coaxial cable was a hard-to-get item in those days. Having read somewhere that, by twisting together two pairs of twisted plastic wire having a fairly thick copper core, we can obtain a feeder having a characteristic impedance of about 75 ohms, I set about twisting together two 75-foot lengths of twisted wire. After struggling for a full day, I produced a neatly twisted 4-wire cable with the red and black wires paralleled. The line did well for a short period, but the PVC plastic failed by pitting even at 50W RF. That was a lesson learnt the hard way!

The indestructible 1625!

Because of its availability at Rs.2 a piece in the military disposals market (in 1964), I settled on the 1625 vacuum tube for the PA of my homebrew TX. One day, one of my 1625 tubes placed on the operating table rolled over and fell onto the cement floor below. I uttered an involuntary scream and looked at the tube in horror, but it was safe! It was as though the tube was proclaiming, "I will die only in an honourable manner with my plate shining in glowing colour!" From that day on, I developed a healthy respect for 1625 tubes!

I first came on the air using a homebrew TX with a single 1625 PA. In 1968, I assembled a new transmitter with three 1625 tubes in the final. They served me well for decades, with an occasional "barely-perceptible dull-red glow on the plates" when I operated them at their ICAS ratings.

The high-gain 1614!

The 3x1625 final of my TX was driven by a 1614 octal metal tube. 1614 is an excellent tube, a high-gain RF version of 6L6 metal with enhanced ratings. It is the ideal tube for driving a HF vacuum-tube linear amplifier designed for an output of 150 to 400 watts. 1614 is still available in USA.

My association with ARSI:

In those days, old people used to tell us with nostalgic pleasure that, before the advent of the Second World War, they had bought a sovereign of gold for 15 rupees. In a similar vein, let me remark about the services that the Amateur Radio Society of India used to provide to its members for 15 rupees a year in the nineteen sixties! We used to get 6 printed issues of 'The Indian Radio Amateur', plus free handling of all our incoming and outgoing QSL cards. How was this possible?

To a large extent, this was due to the commendable service rendered by one individual, the late Amar Banerjee (VU2CZ), Honorary Secretary of The Amateur



Radio Society of India. Still fresh in my memory is the image of Amar sitting on an old chair in the stuffy 'Old M.I. Room' of Delhi Flying Club, surrounded by piles of letters, magazines and QSL cards!

In those days, ARSI was 'running barefoot' and had to struggle to balance its budget. The communications that I received from ARSI were usually handwritten by Amar on postcards! But, as Parkinson has pointed out in his famous book, hard circumstances often contribute to good output from an organisation. At a personal level, I am indebted to Amar for encouraging me to contribute more articles for The Indian Radio Amateur. It is a sad commentary that Amar, who toiled in less than favourable circumstances, did not get due appreciation from fellow hams. Suffice to say that Amar was forgotten when ARSI suffered a split, underwent a triangular turmoil with vertices at Delhi, Mumbai and Bangalore, and finally settled in its present form with headquarters in Bangalore.

Subsequently, the members of ARSI felt that a strong organisation needed adequate influx of funds, and voted for an annual subscription of Rs.250. At the same time, the printed magazine was replaced by an online magazine, ignoring a written appeal made by me to retain the printed magazine. Apparently, the members who brought in the change want ARSI to become a 'paperless society'.

Integrity and protection of Digital data:

The young ham who is hoping to keep his online magazines and e-QSL's intact for 50 years would do well to remember that long-term protection of digital data (whether optical, magnetic or semiconductor type) from failure or corruption is far more difficult than long-term protection of printed magazines and QSL cards from white ants and rodents! This problem is acknowledged by experts in the field of Digital data protection.

The Nov.1967 issue of QST carrying my article "A Transistor Transmitter from India" is still available with me in good condition. Had it been stored as a digital file, would it have survived for 45 years without an elaborate backup scheme? Hard disks last 5 to 8 years and burnt CDs 8 to 10 years. Even semiconductor memory is not 100% reliable; my 8 GB pen drive failed without any warning after working well for 3 years.

Homebrewing and Authoring:

Homebrewing always held an attraction for me. My first significant ham homebrew project was a 500 mW CW/AM Transistor transmitter employing 5 Nos. of OC-171 in the final. In those days, only low-level germanium transistors were available for high-frequency applications. This transmitter performed so well that I was able to make phone contacts with all active South Indian and Sri Lankan hams on 40 metres. Articles describing this rig appeared in The Indian Radio Amateur of Dec.1966, and subsequently in QST of Nov.1967.

In 1969, I assembled an IC Keyer which was the first such keyer to be assembled by a VU ham. An article describing this appeared in The Indian Radio Amateur of Feb.1970. This 43-year-old keyer is still being used regularly by me.

The first dual-gate MOSFET 40673 was released by RCA in Aug.1969. A US ham friend of mine, who received an 'experimenter's sample' from RCA, was kind enough to pass it on to me the same month by air. I set about working on it and, within a month, assembled a 4-band Crystal-controlled Converter employing 3 FETs -- a 40673 mixer, a 3N128 Q-multiplier and a 2N3819 crystal oscillator. Its performance was remarkable. With a low-level pure crystal oscillator as the LO at the front-end, it actually showed a better noise figure than Yaesu FT-747GX transceiver. I believe that the concept of using a pure crystal oscillator as the



first LO in a ham-band receiver has not been exploited fully by VU hams. My article "A Deluxe 40673 Converter" describing this converter appeared in the Feb.1970 issue of CQ magazine, and brought me letters of appreciation from US hams.

After 1971, the demands of my profession restricted my hamming and homebrewing activities. However, I continued to take up small projects such as Crystal checker, Dummy load, RF Probe, FET Millivoltmeter, Gigaohm adapter etc. The Frimatch ATU, constructed in 2011, is an indispensable gadget in my shack now.

Apart from the articles in The Indian Radio Amateur, 10 articles of mine have appeared in the US ham magazines QST, CQ and 73. Some of these articles are available online at the web-site of Salim (VU2LID).

My circuit in the Big Book!

After becoming a ham, I had occasions to browse through in our college library what we called the 'Big Book' -- The Electronic Circuits Manual published by McGraw-Hill of USA, and revised periodically by John Markus. But I had no inkling then that my circuit too would find a place in the Big Book!

The 1971 edition of The Electronic Circuits Manual (which had 3100 circuits in 988 pages) came out with the circuit of the 40673 Converter presented in my CQ article of Feb.1970. It was a satisfying moment for me.

My association with W3MSK/ VU2MSK/ W3AU:

I first met Ed Bissell, W3MSK, in 1967, although I was having regular CW QSOs with him since 1965. He was working as an Engineer with NASA, and had come to assist in setting up some facilities at the Thumba Rocket Launching Station near Trivandrum. Ed was a keen DXer, and a member of the famous Potomac River Valley ARC in USA. Within a week of his arrival, Ed got his VU2MSK call sign. He started working DX using a Collins KWM-2 rig from his hotel room which was just 2 km away from my house.

Ed would visit me often, and take lunch or dinner with me, relishing the "drumstick sambar, aviyal and paal paayasam" (South Indian vegetarian dishes) prepared by my XYL. Ed and I struck good rapport. So much so, once when I dropped a screw spanner, Ed chided me and said, "J'ram, mind your tools... never drop them. Back home, I climb my 120-foot antenna tower all by myself, wearing a safety belt. If I drop a tool after reaching the top that would be the end of the day's work!"



I needed hard-to-get components for my projects, and Ed helped me with components such as crystals, transistors and good coaxial cable. It was from Ed that I learnt about the superiority of the silver-plated and double-braided RG223-U over RG58-U, and likewise, that of RG214-U over RG213-U and RG8-U.

Ed visited India again in 1970. By then, Ed had got his 4-letter call-sign W3AU. This time he brought me a Gotham 4-element 20-metre monoband beam, for which I insisted on his accepting a cheque for 120 dollars that I had received from CQ magazine. Ed, being a well-to-do NASA engineer, must have felt amused by my prudishness! With Ed's help, I raised the big beam. It provided a forward gain of 9 db and a F/B ratio of 33 db. For just about 1 year, I had a hectic time with the beam fed by my 3x1625 PA. On some days, US stations reported that mine was the strongest CW signal from Asia in USA. In 1971, I had to dismantle the beam in order to pursue doctoral studies in the I.I.T., Madras. This time-tested beam is now lying with Venu (VU2MVX) in New Delhi, and I hope he will raise it soon and give it a second lease of life!

Contest operation:

During the period 1969 to 1971, armed with the IC Keyer, I participated in the CW category of ARRL, CQ and Russian WW DX contests. In quite a few of these contests, I was the top-scoring VU ham.

Now, with the integration of the PC and digital transceivers, contest operation has gone high-tech, more so for CW contests. Calling CQ, giving reports (always 599!) and logging are all managed by the PC. Yet, we have to make matching split-second keystrokes. It was so tough that I bade "Goodbye!" to contest operation!

A short trip to USA:

In 1976, I accompanied a relative of mine on a 1-month trip to USA. Though we were on a shoe-string budget, I managed to visit 2 US hams. One was Ed Bissell (W3AU) who was living in Accokeek near Washington.

Ed's house was in a 1-acre plot in which stood 5 towers taller than 100 ft., carrying separate beam antennas for 80/ 40/ 20/ 15/ 10 metres! His shack had separate 1 KW linears for the 5 bands. The shack was specifically set up for 'Multi-multi' (Multi-transmitter multi-operator) contest operation. Oh, what a shack it was! I felt happy when Ed exuberantly pointed his fingers at the tiny, homebrew IC Keyer that I had presented to him in 1970, and said, "J'ram, I am still using that keyer!" The fully shielded keyer was housed in a small rosewood cabinet with a sky-blue formica front-panel.

The other ham whom I met in USA was Weldon Lambert (W2NSZ) in New Jersey, an interesting CW-only old-timer with whom I was having daily QSOs on 20 metres. Weldon was a stubborn perfectionist who had his shack inside a 8 ft. cube of aluminium sheet for the sake of perfect shielding! I did feel a bit uneasy when I stepped into his aluminium cubicle, but soon got used to it. His homebrew 4CX250B rig had 6 meters on the front panel monitoring all the PA parameters -- Vp, Ip, Vg2, Ig2, Vg1 and Ig1! I operated his rig for about 1 hour, and made several CW contacts with European stations, for which I received more than a dozen QSL cards. Weldon passed away before the turn of the century.

One more ham whom I was keen on visiting was Marv Gonsior (W6VFR, later W6FR) in Fullerton, Calif., with whom too I was having regular QSOs on 20 metres. In those days, Marv put out the strongest US signal on 20 metres in Trivandrum. Unfortunately, a trip to the west coast of USA was beyond the scope of my budget! Marv is now hale and healthy at the age of 85 years, but has given away all his ham equipment.

A touching incident:

My local ham friend Kutty (VU2PKK) and myself continued to have regular SSB/CW QSOs with Ed Bissell on 20 metres even after his health started declining by the turn of the century. And, in 2003, Ed passed away at the age of 83 years. It was a grievous loss for Kutty and me.

A few months later, the most touching incident of my ham career took place. I received an unsolicited gift from Ed's wife -- a FT-840 in good working condition. Mrs. Bissell informed me that it was one of Ed's last wishes that one of his rigs should be sent to me. On reading her message, my eyes became moist.

Later on, I came to know that, just before Ed's huge pile of ham equipment was loaded on to a big truck and carted away, some ham friend of Ed picked up the IC Keyer that I had presented to him in 1970!

The unforgettable Veera:

One day, in the late nineteen sixties, I heard an unusually strong CW signal on 40 metres with the call sign VU2PQ. When I contacted the station, the ham gave his name as Veerasamy, handle as Veera and QTH as Kochi. He said that he was running 100 watts to a 3-element 40-metre beam, and gave me his Kochi address. I was a bit intrigued and told VU2TG about the new ham from Kochi. On his next trip to Kochi, poor Guhan spent two hours searching for the QTH of Veera, but couldn't locate it! We concluded that Veera was a pirate. When I told him so, Veera reacted by calling CQ DX on 40-metre CW with my call sign! I was shocked to hear him tell the DX stations, "I am Jayaram from Trivandrum. I am running 5 KW and don't care for the rules!" I couldn't sleep well that night! The next day, I sent a detailed letter to WPC (Wireless Planning and Coordination Wing, Dept. of Telecommunications, Govt. of India).

Well, the QRM from Veera subsided suddenly. Then one day, a strong, new CW station from a neighbouring country was calling CQ on the 40-metre band. When I heard his CW for a minute, I exclaimed in surprise, "This is Veera!" The operator of the new station (name and call-sign withheld) was very cordial towards me. Thanks to a shared interest in good CW, my anger towards Veera melted away, and we became friends! Later on, I came to know that Veera was an affluent and pranky 15-year-old boy who couldn't wait till his



ham license was issued to him! After several friendly QSOs spanning a few years, I lost touch with him for more than two decades. During this period, Veera acquired an engineering degree in UK, then migrated to USA and took his Ph.D. in Communications. He set up his family, and got his US call-sign. He started a top-niche Investment Consultancy firm, prospered and became a billionaire. About 10 years ago, I had a pleasant surprise when I received an e-mail from Veera! In the months that followed, we chatted not only about ham radio, but also about astronomy, computers, artificial intelligence etc. I found Veera to be a gifted intellectual, and it was hard to believe that he was the same person who had once transmitted "CQ DE VU2JN" on 40 metres! Sadly, Veera passed away suddenly a few years ago, while still in his fifties. The more I ponder on Veera, the more I feel awed by the fickleness of our life in this world.

The TEC Ham Radio Club VU2TEC:

It was during the period 1984-87 that the Trivandrum Engineering College Ham Radio Club was set up with the call sign VU2TEC. Salim (VU2LID) of the 1985 B.Tech. batch was the technical adviser of the club, and Venu (VU2MVX) of the 1987 batch was the go-getter secretary. The club was active, and produced many hams like Madhu (VU2TEA) and his future spouse Mini (VU2TEN), Joseph (VU2TEJ), Rafeeqe (VU2TEL), Roy (VU2TER), Sunil (VU2TES) and Fermi (VU2TEW).

The college had an old Racal receiver, to which the club members added a Crystal-controlled FET Converter. A 150-watt CW/AM transmitter was constructed. Since the college is situated on the top of a hill overlooking the Arabian Sea, propagation conditions were excellent. The club boys worked thousands of DX stations including hundreds of US stations. VU2TEC participated in the 1986 CQ WW CW contest, and came as the top-scoring station from India. Most members of TEC HRC turned out to be good CW operators.

With the passing out of Venu's batch, and with my leaving the college on promotion, VU2TEC went into hibernation. As is the fate of most Ham Radio Clubs in the colleges of India, VU2TEC also went QRT in the nineteen nineties.

An appreciation of two hams from TEC HRC:

These are times when high-profile hams corner the limelight. The achievements of enterprising hams like Salim (VU2LID/ N8LI) and Venu (VU2MVX) deserve to be known and appreciated by the ham community. Salim holds a Ph.D. from the I.I.T., Kanpur, and works for a software company in Rhode Island, U.S.A. He has set up a remotely-operated ham station in his Trivandrum QTH where his parents live. Operating his remote station through BB internet, Salim regularly joins our QSOs on 40 metres and 20 metres. Salim is also a keen CW operator and an experimenter with the WSPR mode of communication. He has a SDR (software-defined-radio) at his QTH that is available online, so that we can log in and monitor the 40-metre band as it is at R.I., U.S.A. His web-site <<http://shipwreck.hopto.org>> reveals his multifarious capabilities.

Venu (VU2MVX) is doing well as Group Captain in the Indian Air Force. Beginning with his involvement in the construction of the VU2TEC transmitter, Venu has evolved as a dedicated homebrewer and a keen CW DXer. VU2MVX is the only 40-metre CW station from the Delhi region which I hear and work regularly now.

Some CW stalwarts whom I have met and admired:

Menon (VU2KZ) was a temperamental CW enthusiast of Chennai who worked as a maritime wireless operator. I have heard him reprimanding hams who avoided CW! Sadly, he was killed by robbers in his house. Ganesh (VU2TS), who has distinguished himself in many fields like ham radio, astronomy, farming



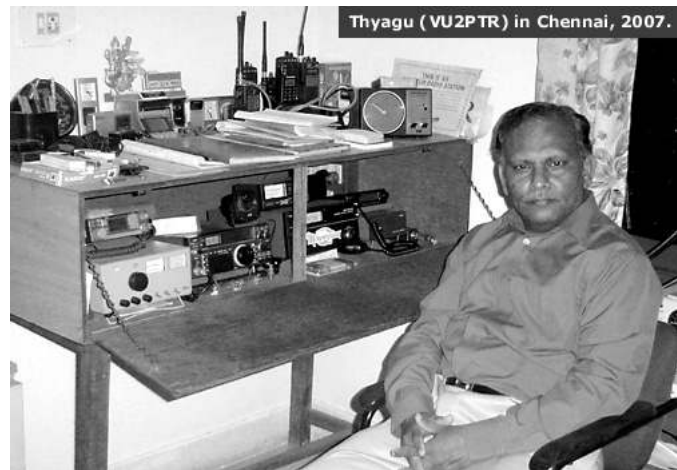
and bird-watching, is an old-timer settled in BR Hills near Bangalore. He is a keen CW operator with whom I used to have frequent QSOs. Ganesh is now the editor of Ham Radio News, the online magazine of ARSI. Saif (VU2DX), a retired engineer now settled in Pollachi, is equally at ease on CW and SSB modes. His enthusiasm for visiting hams and making friends is as deep as his love for ham radio operation!

Homebrewing is flourishing!

Homebrewing skill is not essential for a ham, but it does enhance the satisfaction that amateur radio gives. The positive response from youngsters to the construction workshops of the pioneer Dev (VU2DEV) proves that homebrewing is flourishing.

Among the senior hams whom I contact regularly now, Jam (VU2RQ) and Nath (VU2PRV) are keen homebrewers. Jam has also prepared a useful collection of articles from QST & other magazines.

During a recent trip that I made to Chennai, Thyagu (VU2PTR) was kind enough to take me limping to the house of Venkat (VU2SV). It turned out to be a get-together of three devoted homebrewers -- two past their peak period of homebrewing, and the third, Thyagu, still an active homebrewer with a prolific output. During an earlier visit to Chennai, Thyagu had shown me several of his homebrew gadgets which were as neatly constructed as good commercial equipment. We had an absorbing chat and noted that, even in the present age of increasingly complex commercial rigs, homebrewing is still relevant. For example, F6BCU's online article 'High-stability VFO' opens up new avenues for experimenters.



Facing the future:

After crossing the age of 75 years, my physical health has been on a slow downslide. As we approach the fag end of our life, our involvement with our hobby is put to test, so to say. I have heard the story of a VU ham who remained so deeply attached to his hobby that he breathed his last with the mic. in his hand and calling CQ. At the other extreme are hams who, on sensing their declining health, quit the hobby, driven more by loss of interest or a spirit of renunciation rather than by physical disability. Let us strive to traverse a middle path and continue to remain **active and balanced hams** as long as we can.

In this regard, we can take inspiration from our senior ham friend Kutty (VU2PKK), with whom I have a daily ragchew on 40 metres. Kutty has withstood with admirable fortitude an avalanche of personal loss (demise of his only son Dr. Venu, VU2KVG, in 2009, and demise of his wife a few years earlier) as well as health problems, and still remains an active ham at the age of 84 years. With his FL-2100Z linear and Mosley 3-element beam, Kutty puts out a strong SSB signal that brings him lots of DX contacts. Though Kutty says that his short-term memory is getting bad, he surprises us by his ability to recall the names of all the VU and DX hams whom he has worked more than a few times. That is an extraordinary capability, so -- Hats off to Kutty!



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Postscript: My professional career in a nutshell:

I was born in 1936 in Thanjavur district of Tamil Nadu, but my education and professional career were rooted in Trivandrum in Kerala. I graduated in Civil Engineering from the College of Engineering, Trivandrum where my father Prof. S.Rajaraman was one of my teachers. I too joined the same college as a faculty member in 1957. After 30 years of service in that college, I became the Director of Technical Education, Kerala. I worked and retired in the same post as my father had done long before. Subsequently, I did a 5-year stint as Visiting Professor in the I.I.T., Madras until 1996. -- VU2JN, Sept.2012.