HAM RADIO NEWS

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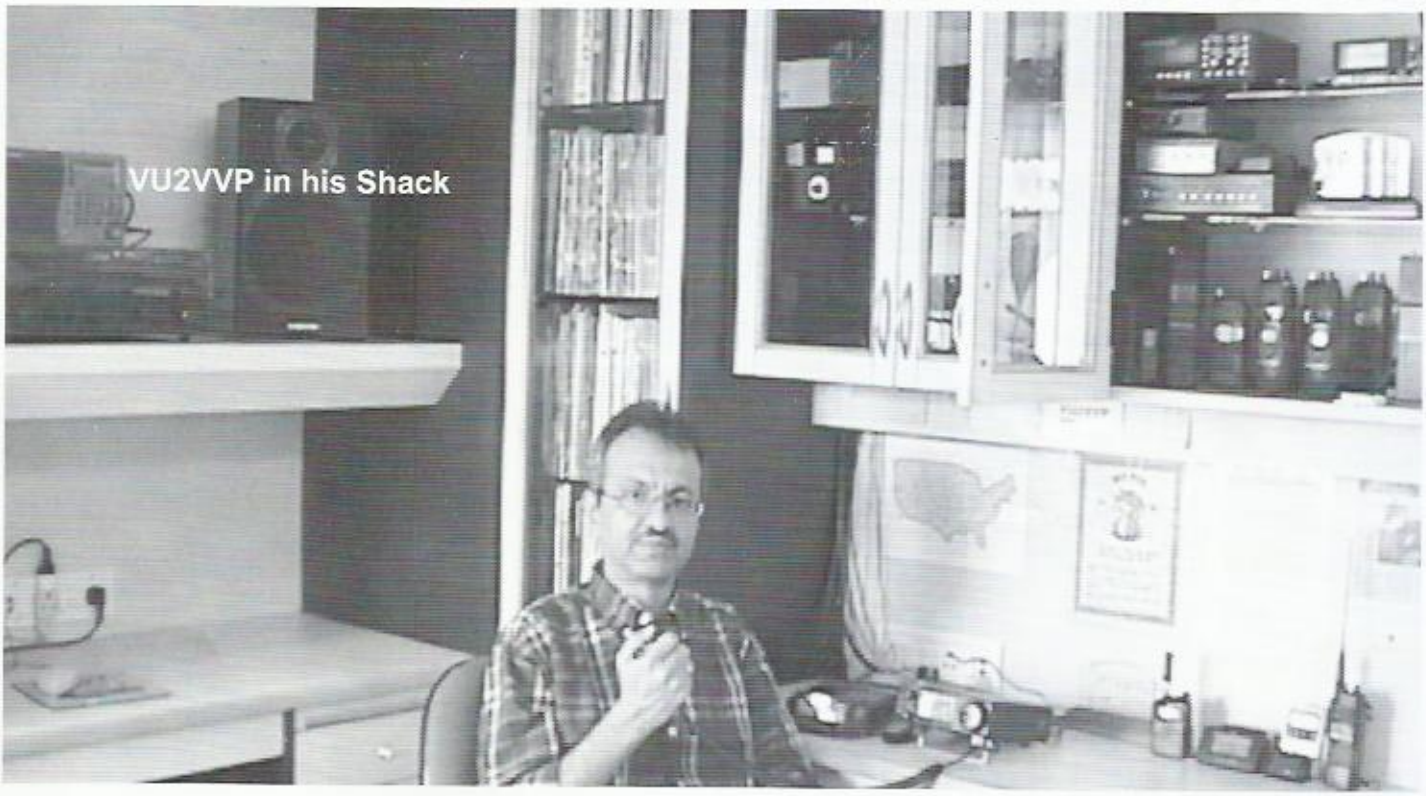
"AMATEUR RADIO - A NATIONAL RESOURCE"

Unity Is The Motto



JOTA IN MUMBAI

VU2MUE demonstrating at IIT

VU2MUE demonstrating at Gwalior

VU2MUE demonstrating at Sarva Kanya Vidyalaya

PRESIDENT'S REPORT

I trust all of you had a great festive season and enjoyed the extended weekend between Diwali & Id. By the time you receive this issue of HRN, I will be on my way to Indonesia as part of the ASEAN Car rally. This is the first rally of its kind from November 22nd to December 11th.

The rally will be flagged off by our Prime Minister Dr.Manmohan Singh in Guwahati. A series of "Chalo ASEAN rallies will simultaneously start from Shimla, Gandhinagar, Panjim and Kanyakumari. These rallies will travel through 20 states before converging in Guwahati on November 20. The convoy from the south , starting from Kanyakumari will proceed to Nagpur via Thiruvanathapuram, Chennai, Bangalore and Hyderabad. The convoy from the west will start at Panjim and proceed to Nagpur via Mumbai. From here the two convoys will proceed to Guwahati. The same rally will be flagged off from Kerala on November 12th. VU2RC, Ravi and I shall be taking part in this fantastic event.

The Seanet Convention will be held in Bangkok from the 19th to 21st November and VU2GMN will be attending it. Preparations are afoot for the Seanet convention in Bangalore in 2005.

The Hamfest 2004 preparations are in full swing in Mumbai and I hope to eyeball with many of you over there. ARSI will have a meeting of all its members and discuss ways and means of improving the organization. The organizers of the Hamfest, the Mumbai Amateur Radio Society have kindly consented to allot a slot for us in the auditorium.

Wishing you all a very merry Christmas and a Happy New Year !

73

Chandru

CQ ALL VU HAMS

Belated Deepavali greetings and Id Mubarak to everybody. I trust all of you had a very happy festive season!

Since the last issue I have been very busy. Between the 8th and 15th of October I was in Korea attending an International YL Meet. This group meets once in 2 years in a predetermined QTH. It was my first YL meeting of its kind and it was also my first foreign trip alone for the sole purpose of amateur radio. It was wonderful to be among YLs whom I had spoken to on radio, but never eyeballed. Plus I got to meet new Yls and made some very good friends. We stayed together and toured Korea for a week. The details are in the cover story of this issue. But the best news that I can give you is that the next international YL meet is going to be in Mumbai in 2006. It's a lot of work for me but I am excited about having all my dx friends in my country. It would also be a great opportunity for VU Yls to get together. At this juncture, I appeal to all YLs and OMs to make this event a grand success. I will be keeping you posted about the progress from time to time. All help is welcome!

The CQWW DX Contest was not so lively this time at least from my end. Not many stations were heard and it was not so exciting, with band conditions playing spoiltsport.

Preparations for the Hamfest 2004 on the 24th, 25th and 26th of December in Mumbai are in full swing and the organizers are hoping for a full house. The venue is in the heart of the city and the weather in December is most condusive for events of this kind. I am looking forward to eyeballing with everyone.

Before I sign off, I once again appeal to all to send in articles for the HRN. Do write to me your opinions and views so that others can also read them. Please remember that this is your magazine.

I wish all of you a very merry Christmas and a very Happy New Year.

73

Sarla

HAMFEST INDIA 2004

The Hamfest 2004 will be held on the 24th, 25th and 26th of December 2004 at Ravindra Natya Mandir, Prabhadevi Mumbai. It is being organized by the Mumbai Amateur Radio Society and VU2NLF, OM Nilesh is the convener. The Registration fee is Rs.500. Accomodation can be arranged for if required. Please visit the website www.hamfest2004.org. Email:convener@hamfest2004.org. Fax:91-22-28683910. Postal Address: Hamfest India 04, c/o Mumbai Amateur Radio Society ,Avijha Building, Room No.14, 1st Floor, Jambulwadi, Next to Kyani Bakery, Mumbai 400002.

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All payments to be made by draft in the name of ARSI payable in Bangalore. Money Order can be sent to the above address. No payments by cheques please.

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Contents :

Membership	Admission	Annual
Category	Fees(Rs)	Fees(Rs)
Patron	15000	Nil
Life* (For existing Corporate member)	2250	Nil
Life *	2450	Nil
Corporate (Individual with Valid Amateur Licence)	50	150
Corporate (Club, Society or Institution with Licence)	100	200
Associate (Individual, no Licence required)	50	75
Associate (Club, Society or Institution without Licence)	100	200
Student Member	20	30

*Senior citizens ,i.e, those above 65 yrs, can become life members by paying Rs.1000 only, instead of 2250(1200/-for NEW senior non members instead of 2450/)-YLs will be entitled to this reduced rate after they reach 60 yrs.

FEEDBACK

Dear Editor,

Bindu Madhava Rao, known to most Hams in India as Bindu, at times mistaken as a YL from the QSL cards received from DX, was really a pleasant, agreeable co-operative and dedicated Ham all his life. He was always willing to help the new comers and youngsters to the hobby. He used to have a stock of components from the Industry and used to give them free for the deserving new comers. His house was an open house for all the homebrewers, at any time of the day. He became a silent key on 31st July 2004.

Having born to a Railway Officer, in 1934,he had his schooling at various places in North India, at Lucknow, Varanasi, and Calcutta. Later he became a civil engineer, from the BMS College at Bangalore. He started his career in Jessops, a well known structural engineering company at Calcutta.

He was interested in Ham Radio, as early as 1957-58 and was one of the rare hams to have received the signal from Congo, in Africa, where there was political unrest at that time.. He was in UK from 1963 to 1969, but came back because of family requirements at Bangalore, and did not go back to Calcutta. He remained a bachelor in his life, married to Ham radio.

He was the custodian of the Bangalore Amateur Radio club (BARC), for many years and ran the institution, on a shoe string budget, since no membership was charged, to induct all the aspiring youngsters to the hobby. He was of the idea that money will kill the true spirit of hamming. He acted as the "boy on the burning deck" to keep alive BARC from 1970 to 1985. He conducted the JOTA at the scouts HQ at Bangalore for many years with the call sign VU2JOA and sent QSL cards printed and distributed at his expense.

He was the founder member of AMSAT group in India and was responsible in encouraging many hams to the satellite activity. He will at least request new comers to monitor, so that the satellite bug could bite them. Because of him, Bangalore became the center of Amateur Satellite activity.

He had a heart attack in 2000, and went through two by-pass operations, and had a stroke in 2002, making him paralytic, and also losing the power of speech. It was only Ham radio, which helped in reviving his speech and also in regaining memory faculties. This was by his sheer efforts during the Chat Net on VHF at 1900 hours daily, in which he started to discuss with his friends about satellite monitoring and the orbital time of the passes of various satellites daily. Till the last day of his life on earth he was working on home brewing of audio tone of 67.5 Hz for the Echo satellite, and just one day before his death he was happy to hear hams on Echo satellite. Now all his friends miss this dedicated Radio Amateur, who was like a father figure in Bangalore. May His Soul Rest In Peace

WE (miss) You 2 India Radio.!!!!

VU2FF VU2LX VU2GUR and others at Bangalore.,

Dear Editor,

TIPS FOR USING THE QSL BUREAU -

1) To avail the Bureau service, you must be a member of ARSI.
2) You must deposit some money with the Bureau to show your willingness to receive cards. All your money will be accounted for and a statement will be sent to you by postcard following each QSL card packet.

3) You have to mention the mode of despatch: Unregistered Parcel Post/Courier. Courier is costlier but it is faster and reliable. Packets cannot be sent by Registered Post/Parcel.

4) Economical packaging is 500 gms. If you receive less cards, they will be sent to you every 3 months.

5) Please do not enclose any currency note/postage stamps inside envelope/packets. This attracts pilferage and endangers my mail also.It is better to always send deposit by Money Order to my home address. Please write your name, address and amount in the communication slip.

FOR OUTGOING CARDS

1. Please arrange the card alphabetically, count them and write the number on a piece of paper and enclose inside the packet.
2. Rate for outgoing card is Rs.0.30 per card.

D.P. De - VU2DPD

e-mail: vu2dpd@rediffmail.com

Dear Editor,

CW Net is organizing CW contest this year as detailed under.
Period: 1 Nov to 15 Dec 2004

1. Check in to the CW Net during this period counted
2. Good CW operative skills
3. On 12th December from 0000 to 2400 IST, two way QSO on CW on any HF band with VU or DX station (multi band QSO not allowed) counted as one point.
4. Log books to be maintained and copy to be submitted to the CW Net Controller before 31 Dec 2004.
5. CW Net time during the contest period from 7.30 to 8.30 am IST sharp on 7015 kHz.
6. QRP stations will get preferential listening. Entries must be sent to the CW Net controller: Mr. Rajan Nambaiar, VU2RJN Kundam Veetil, Kulappully, Shoranur 679122, Kerala.

Dear Editor,

This is to inform all my Fellow Hams that I have seen a website-"www.qsl.net/vu2rrg/membership" connected with HAMSAT(VUSAT). In the "OSCAR ENGINEERING RESEARCH GROUP" my call sign VU2RM and my name is mentioned as a committee member. The bare fact is that I don't know anything about this organization. I have no idea as to how my name is published in this website without my knowledge or willingness!!!! So my fellow Hams, please note that I have no connection with this selfproclaimed organization in any way.

S.Rama Mohan Rao
VU2RM, Kakinada

Mumbai Amateur Radio Society in association with Maharashtra State Bharat Scouts and Guides participated in the 47th Jamboree On the Air event on 16th - 17th October, 2004.

The participants at 5 JOTA locations were VU2HIT, VU2UBP, VU2AXN, VU2SCQ, VU2OZO, VU2JPN, VU3KNY, VU3MWH, VU2GBI, VU2CBU, VU2IZO, VU2SFN, VU2IES, VU3AUA, VU2UGJ, VU2IVO, VU2HVK, VU2SFH, VU2UGO, VU3DGB and SWLs - Vishal Shah, Nilesh Dixit & Andrew.

Total 1900 scouts and guides from 42 schools took part in this event. They all received participation certificate from Maharashtra State Bharat Scouts and Guides.

The stations were QRV on HF & VHF. Total 6 VU & 4 DX JOTA stations were contacted on HF. This year for the first time VU2CBU OM-Prashant with VU2SFN OM-Shailesh operated JOTA Station on Echolink and they logged 8 DX JOTA contacts.

Local Press coverage for the general awareness of Ham Radio & JOTA was made at Thane Location.

Around 250 scouts and guides took part in the JOTA at the Bharat Scouts and guides Headquarters at Bangalore under the guidance of the Bangalore Amateur Radio Society and operated station VU2ARC. All aspects of ham radio was explained to the children and information was given about Phonetics and propagation. The day began with HF activity on 20 metres. Contact was established with VU2INA from Kalpakkam, VU3VVI, the Little Lilly School JOTA station in Bangalore, VU2RDQ from Mangalore, VU2RDX from Chennai, VU2VSG from Tamil Nadu, VU3 KBN from Kerala, VU3BCN from Trichur, VU2SYT from Kollam, VU3CVD from Kodaikanal, 4S7SE from Sri Lanka. The scouts and guides sang songs and exchanged greetings. On VHF contacts were made with Kendriya Vidyalaya and VU2URC, the club station of ISRO operated by OM Mani. A speech by Mr Kondajji Shamugappa was aired on the VHF repeater and was heard by all JOTA stations . On the second day contact was established with other JOTA stations from Mumbai like Shivaji Park, operated by VU2HID, Mira Road operated by VU2UGO.Other stations contacted were VU2ESY from Bhopal, VU2BSG from N.Delh. Hams who volunteered during the event were VU2LNN, VU3SXE, VU2GGM, VU3SPD, VU3JBA, VU3SRE, VU2QNY, VU3DON, VU2USA.

The Bangalore Amateur Radio Society is having a field day on the 4th and 5th of December at Chickmangalore. The field day will be held in the QTH of VU2ROI. Tents will be erected for the overnight stay. A special call sign and QSL card will given to all those who participate in this event.

The Quilon Amateur Radio League conducted a Field Day on 5th and 6th September 2004 at Varkala which 13 members attended.On the first day there was sightseeing in and around Varkala beach. The next morning the participants enjoyed a dip in the Papanasam sea and a bath in the natural fresh water of the waterfall nearby. An informal meeting was held and suggestions were made for the next monthly meeting of QARL. It was a good way to celebrate Onam.

The Adoor Amateur Radio Club is conducting a HAM EXPO 2004 at the Govt. L.P.School, Opp Parthasarathy Temple, Adoor on 21st November 2004.

Two new nets are being conducted on the 40 meter band. The CQ-73 Net everyday from 10.P.M. to 10.30 P.M(IST) on 7070 Khz and the VU Zero Hour Net at 00 hrs to 00:15hrs(IST) on 7050 Khz.

Lecture and demonstration programmes on ham radio were organized by Vigyan Prasar (Department of Science & Technology) for a number of schools in Delhi during the month of September, October and November. On September 6, 2004, a group of school teachers and students from Gyan Bharti School (Saket) visited VU2NCT club station. Some of the newer modes of communications (e.g. SSTV & PSK31 using a Soundcard enabled computer) were demonstrated to them. On September 12, 2004, a lecture and demostration programme was organized at IIT Delhi on the occasion of a workshop on 'Developing Volunteers for Disaster Preparedness', which was catalyzed by NCSTC. A group of teachers and students from DAV School (Dayanand Vihar) visited VU2NCT club station on September 30, 2004. During the demonstration programme, on-the-air support was provided by VU2SWS and VU2AF. A ham radio awareness programme was organized at Mery Hill School, Gwalior (M.P.) on October 6, 2004. The programme was organized on the occasion of a NCSTC catalyzed training programme for Science Club Coordinators, School teachers and students. On-the-air support was provided by OM Ajay, VU2DED. On the occasion of a NCSTC catalyzed Mobile Science Exhibition (Science Caravan), lecture and demonstration programmes on ham radio were organized at Govt. Sr. Secondary School (Mori Gate), Sarvodaya Vidyalaya (ISBT) and Savodaya Kanya Vidyalaya (Idgah Road) on 4th, 5th and 8th November, 2004. On-the-air support was given by VU2DSI.

A team from the NIAR, led by VU2RBI. YL Bharati will be operating from Andaman and Nicobar Islands between the 3rd and 31st of December. The team includes VU2DBP Prasad, VU3DVS Varun Sastry, VU2MYH Ram Mohan and VU3RSB, Sarath. The special call for this expedition will be VU4RBI and VU4NRO.

A NOVICE NOTE FOR 'DTMF, CTCSS AND ECHOLINK STARTERS'

- by VU2MUE Sandeep

DTMF, CTCSS and utilization of DTMF for ECHOLINK operation

DTMF stands for Dual Tone Multi Frequency. It is an invention of the Bell Laboratories (USA). The AT&T trade name for DTMF is 'Touch Tone'. Most of the modern telephone and ham walkie-talkies are DTMF enabled, i.e. when we press a particular digit of the keypad it produces two tones (a combination of 'two' out of the 'eight' tones). The following table layout shows how the different tones are assigned:

1	2	
3	A	697 Hz
4	5	
6	B	770 Hz
7	8	
9	C	852 Hz
*	0	
#	D	941 Hz

1209key '5' would thus produce two tones (one LOW tone = 770 Hz and one HIGH tone= 1336 Hz)-each pair taking 50 ms and a microprocessor inside our walkie-talkie can decode them. The signal generated by a DTMF encoder is a direct algebraic summation, in real time, of the amplitudes of two sine (cosine) waves of different frequencies. i.e. pressing '5' will send a tone made by adding 1336 Hz and 770 Hz to the other end of the line: http://margo.student.utwente.nl/el/phone/dtmf.htm#DTMF_003.

A, B, C and D button in our walkie-talkie

AàD buttons were used as controlling signals by the U S military's AUTOVON phone system. They had their use in sending call-priority. For example, 'A' button was for Flash Override; 'B' button for 'Flash'; 'C' button for 'Immediate' and 'D' button for 'Priority'. Pressing one of these keys gave the call priority, Flash Override being given the highest priority (killing other conversations on the network)!

AUTOVON system

"AUTOVON, the Automatic Voice Network, was an American military phone system built to survive nuclear attacks! AUTOVON was first built in the United States, but spread to England, Asia, the Middle East, and Panama." http://www.fact-index.com/a/au/autovon.html

AUTOVON system was later on disbanded in the USA http://home.att.net/~wd0giv/Autovon.html.

The utility of these 'A' to 'D' buttons could be understood while coming across a few commands used in ECHOLINK (developed by OM Jonathan Taylor, K1RFD, USA http://www.echolink.org). We shall see how these buttons are used during ECHOLINK operation.

Use of DTMF

1.For Paging: It is a technique, which enables us to listen only to a desired signal. If our walkie-talkie comes DTMF decoding enabled, we can set our radio to listen to a sequence of touch-tone digits. The 'receiving' of the 'right combination' of these tones would allow only a particular station's audio to be listened by us. That is, we can silently monitor a busy channel for our desired station (if we don't want to listen to the other stations).

2. For Remote Control: A device can be remotely switched 'ON' or switched 'OFF' by sending DTMF commands (they may go through wire, Internet, telephone line or our very own radio waves). Also widely used for telemetry in alarm and security systems. Here is a small DTMF remote controller, which I have 'assembled' (http://kitsrus.com/pdf/k140.pdf).

[* File contains invalid data ! In-line.JPG *]

It employs the landline telephone for remote switching. The device gets connected to a landline telephone. Another landline telephone or mobile telephone can be used to send the DTMF commands to switch 'ON' or switch 'OFF' 4 electrical devices. Just dial your phone number, enter a 'password' and give the command! Switch on your water pump (for municipality water?) when you are away from your residence.

3. Retrieving of data remotely: We can also retrieve different customized/real-time information/data on our DTMF telephones or walkie-talkies by sending DTMF tones (e.g. reservation status of a train ticket!).

That day, I heard a computer voice on our VHF repeater announcing some of the latest meteorological information (Temperature, Humidity, Wind Speed & Direction, Visibility etc.). I got excited and tried the DTMF pad of the walkie-talkie that I use. Oh yeah! I got an immediate feedback! A female computer voice told me the temperature & humidity of my city as I pressed a combination of three buttons (was it 99*?). Weird and a real techno-fun! I called up VU3FUN & VU3GTF brothers (http://www.indiahams.com/echolink.htm) and they gave me the information. It was they, who were playing with the software called 'ECHOTIME' (by OM Jim, KH2D, USA

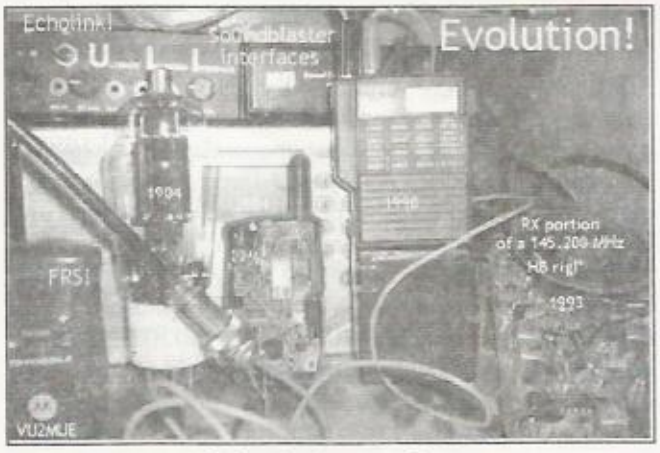
http://kh2d.net/about.cfm). Would it not be very useful if the sea going people (the fishermen for example) could retrieve various local weather warnings/forecast through a ham walkie-talkie? I read a very interesting philosophical discourse by KH2D who has developed ECHOTIME to work with ECHOLINK at: http://kh2d.net/opinions/article.cfm?id=4. Incidentally 'Surf fishing' is one of the hobbies nurtured by KH2D! ECHOTIME retrieves updated weather information from the Internet and plays

it back whenever we want. Probably, as OM Jim aptly remarked, fifty years from now, ham radio would not be what we see it today. OM Jim, KH2D can think of developing another version of the software which would run independent of ECHOLINK but at the same time serve the purpose it was intended for.

'A computer voice on a repeater?' Nope!!! Many people are hesitant while trying to induce hesitancy to many. But, there are also many people who like it too (mostly the young people; I mean the 'young in mind'). SIMPLEX-a software by F6DQM (http://perso.club-internet.fr/f1orl/programe.htm) has the provision to decode DTMF tones fed to the 'LINE IN' of the computer soundcard via a walkie-talkie and accept a DTMF command. It in fact at the same time 'displays the received DTMF tones' (think of using the software to trace long-range cordless telephone QRM makers)! I enjoyed remotely sending a DTMF command to my computer (interfaced to a VHF rig) using a VHF frequency and switching 'ON' or switching 'OFF' my 'own beacon' at my will from a remote location!

Think about Automatic Position Reporting System-APRS somewhere else in the world http://www.aprs.net/; here we need to take a 'permission' to declare our position; this is ridiculous indeed!

If you want to get just the feel of DTMF remote commanding, you can try SIMPLEX V 1.5.1 by F6DQM (OM Gabriel from French). With SIMPLEX it is very easy to simulate a Repeater (either simplex, duplex or even a transponder!). We can also send DTMF tones to 'Remotely Control' our home repeater or a beacon. Or, if we want to test our new VHF antenna for line-of-sight/propagation, this software can help us. DTMF technology unfortunately is not suitable for HF frequencies, which are dependent on the ionosphere. That's the reason we don't find any HF ham rig with DTMF provision. With SIMPLEX (which was basically 'dreamt' by F6DQM as a 'Parrot Repeater') I sometime activate my own beacon at 144.280 MHz by remotely sending a DTMF command #056 and derive a simple satisfaction; that is what, the hobby is for me.



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A monstrously bulky Tube (Lee De Forest in USA in 1906 made the first Triode Valve by modifying the Diode Valve made by Alexander Fleming in 1904 in England), a miniature UHF transceiver from MOTOROLA (for Family Radio Service)-The one which I got was assembled in China and came from USA, with millions of 'valve equivalents' inside, an old VHF ham transceiver and a homebrewed portion of just the RX portion of a 145.200 MHz VHF receiver!

I am using an MFJ (Martin F. Joe) 1273B Sound-blaster interface. But we can also try with an indigenous version like the neatly developed DIGIVU by an industrious OM Rahul, VU3WJM at http://www.indiahams.com/homebrew/pcinterface.htm.

Soundcard to rig interface can also be homebrewed with a piece of 2N2222, one 1N4148 diode and a 2.2 kW resistor for the Transceiver PTT control via the RS-232 serial port (COM port); and two pieces of resistors (100 kW & 1 kW) to obtain a 40 dB attenuation so that our rig's microphone circuitry do not get damaged while feeding the computer's 'Line Out Audio' to our rig's 'MIC IN' (an isolation transformer and an OPTO-isolator however enhances the system, which is found in VU3WJM's DIGIVU too). Once I wanted to see, what happens if I don't attenuate a PSK31 'DIGIPAN' signal? My ICOM IC 718 SSB rig went QRT. Lucky I was, my whiz kid friend VU2VTH (OM Raj) came to my rescue and I was back 'on-the-air' again with just a piece of resistor-that is where the ingenuity is.

CTCSS

CTCSS stands for Continuous Tone Coded Squelch System. The Motorola trade name for CTCSS is 'Private-Line': PL; GE calls it 'Channel Guard'; Ericsson also calls it 'Channel Guard' whereas E.F. Johnson calls it 'Call Guard'! CTCSS tones consist of 37 very specific audio frequencies between 67 to 250.3 Hz (modern rigs however provide a plenty of them!). These specific audio frequencies are called 'sub-audible'.

Why are they called 'sub-audible'? Is it because, the radio receiver's audio circuit filters them out so that we don't hear them at all! Or, are they too low to be heard by our ears? In fact we don't know that they are there (but in low quality walkie-talkies, they can even sometime be heard; a nuisance as some FRS users use to complain!) A CTCSS enabled receiver will remain silent to all the signals except a desired station with the correct tone. This facilitates the use of the same frequency by different services without disturbing each other. Most of the FRS (Family Radio Service) radios are CTCSS enabled. Imagine! 37 different groups of people talking in a single frequency without disturbing each other!

I came to know about another new code squelch system used in ham radio, which is referred to as Digital Code Squelch (DCS) in a YAESU manual (for the VX-7R hand held rig). This is said to be a more advanced tone squelch system, which the manual claims to provide more immunity from 'false paging' than does the CTCSS.

The pair of FRS UHF radio (MOTOROLA T4500), which I have procured, has 22 spot frequencies (15 frequencies in the 462 MHz band and 7 frequencies in the 467 MHz band). Is it true that an astounding 814 groups (22 x 37 = 814) of people could theoretically utilize the limited UHF FRS/GMRS bandwidth only because of CTCSS technology? It may be mentioned that FRS users don't need a license

(http://wireless.fcc.gov/services/personal/family/) to operate their 500 milliwatt UHF walkie-talkies; and 'with a license' (but without any licensing exam!) they can even go for up to 50 watts (http://www.rampart-sar.com/gmrs_rad.htm); also put their own personal GMRS repeaters; All for near free J? That's the reason in USA there are approximately 3,500 GMRS (Global Mobile Radio Service) Repeaters. Is this true? The FRS that I use is not much of a use except that I can talk to my harmonic within a line-of-sight radius of 2 miles. In India we don't have such licensing provision

(except the 27 MHz Citizen's Band) so the chances of survival of ham radio is also more in India HI ;-) Is this true? Are we (I mean hams) lucky?

Use of CTCSS/DCS

1. CTCSS is used to avoid interference between different agencies/groups within close proximity to each other using the same frequency. Each radio for a particular agency is programmed with a CTCSS code so that only those radios can hear and talk with each other and not a neighboring agency/group.

2. CTCSS is also used to prevent interference in high RF environments. The so-called 'Closed Repeaters' require the specific CTCSS tone to be transmitted by the user. While there may be some repeaters which generate a CTCSS tone even on the repeater output so that repeater users who are equipped with a radio capable of decoding CTCSS will not hear other interference sources on the channel that would otherwise open the squelch on the user's radio. This was once ambitiously envisaged for Vigyan Prasar's (http://www.vigyanprasar.com) VU2DLR (in Delhi) repeater when we had lots and lots of 'long-range cordless telephone QRM' at the repeater output. Most of those long QRM makers however gone Silent Keys-died their natural deaths.

3. Many Hams and FRS radio users employ 'CTCSS tone squelch' to maintain privacy to their conversations. This is albeit deceiving, because most of the FRS and ham radio walkie-talkies are at the same time made capable of scanning & detecting the tones (if the operator forgets her/his 'group's tone!!) unless hams are allowed to go for scrambling technologies.

DTMF for ECHOLINK

I wanted to learn how to dial a 'Call-sign' from my handy (walkie-talkie) through the ECHOLINK (If I do not know the Node number)! That sounded interesting me. A whole sequence of digits (tones) can be memorized (into our rig's memory) so that just at the press of a single key (button) of the rig, the sequence of tones gets transmitted to connect to a particular ham via an ECHOLINK Node. Here at Delhi we have an ECHOLINK Node 'initiated' and 'maintained' by OM Rajesh, VU3FUN patched to our Vigyan Prasar (http://www.vigyanprasar.com) repeater VU2DLR from his shack. And DX hams have an access to the VHF air space in Delhi via the VU2DLR repeater and vice versa. Incidentally, the VU2DLR Repeater

http://www.qsl.net/vu2msy/vu2dlr_repeater.htm is located at my (http://www.qsl.net/vu2msy) morning QTH. Dr. V. B. Kamble, VU2VBK is the founder custodian of VU2DLR repeater.

Assigning digits to a 'Call-sign'

My NOKIA mobile telephone helped me to learn about it. I found that the keypad buttons of a walkie-talkie and a mobile telephone are almost identical (industry standard?). But the walkie-talkie (a FT-411E), which I use, has no indication of where to find the 'alphabets' in the keypad! In fact I never knew that they had alphabets hidden beneath them! HI. What a pity? I think a mobile telephone had evolved just out of a humble ham walkie-talkie ;-). The irony is that many of the mobile telephone users in fact now want to revert back to the 'PTT days' :-) so that they can get connected to their friends just at the 'press of a button' (PTT). In India TATA INDICOM has probably started using this technology (from QUALCOMM's BrewChat™, USA). This is what the following news extract tells-

"Built on QUALCOMM's BrewChat™ technology, this service enables person-to-person and person-to-group communication between users at the 'push of a button'. This new walkie-talkie feature provides customers with a fast connection to individuals or even groups of people like their colleagues, family or friends. This service has been specially designed for CDMA200 1X networks and will go live, for the first time ever in the world on the Tata Indicom network. QUALCOMM Incorporated (Nasdaq: QCOM), is the pioneer and world leader of Code Division Multiple Access (CDMA) digital wireless technology.

The key benefit of Tata Indicom Push-To-Talk™ is that it frees the customer by allowing him to instantly call a group of people at one time from any place, Push-To-Talk™ addresses the critical communication needs of businesses - large and small, sales teams, professionals and government departments like the police and fire brigade without being confined to a location. It enhances productivity and efficiency, saving time and money in the process."

Source:

http://www.chennaionline.com/events/business/2004/05tata.asp

Is ham radio really obsolete? Hats off to the computer professionals/geeks (who are hams)! What new ham radio technologies do we 'really have' to offer to our young generation? The computer still just remains a 'desperate resort' to our cause; I do believe that the hams at http://winlink.org are trying to get solutions (what if even the Internet fails?).

Assigning Digits against the alphabets/digits of a Call-sign

There is an option in ECHOLINK to Connect by 'Call-sign'. But for that we need to convert the 'Call-sign' into digits first (if we do not know the Node number and obviously it would be IMPOSSIBLE for us to remember all the Node Numbers when all the hams in this world would be getting connected to the ECHOLINK and there would be no hams left for the HF L!). This is where the walkie-talkie keypad helps. The keypad of my mobile phone just looks like the diagram that I made:

A Mobile Telephone keypad

Digitizing a Call-sign with a walkie-talkie

Here is an extract from the ECHOLINK manual:

"Entering Call-signs:

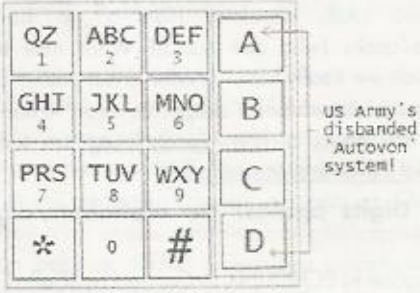
To enter a 'Call-sign' (for the Connect by Call or Query by Call commands), press two digits for each letter and number in the 'Call-sign'. The first digit is the key on which the letter appears using 1 for

Q and Z, and the second digit is 1, 2, or 3, to indicate which letter is being entered. To enter a digit, press the digit followed by 0. When finished, end with the pound key (#). For example, the letter "K" is entered as "52", the letter "Q" is entered as "11", and the digit "7" is entered as "70". 'Call-signs' need not be entered in full. If a partial 'Call-sign' is entered, ECHOLINK will find the first match among the stations currently logged on. If no match is found among the stations currently logged on, ECHOLINK will say, "NOT FOUND"."

To connect to a station on the Internet via ECHOLINK, based on its 'Call-sign', we need to key-in:

C + Call-sign + #

But how can I type V U 2 I T I with the old walkie-talkie that I use? I have been doing SMS to my friends for long without the requirement of doing any such conversion with a NOKIA (user friendly?)!! I just need to 'punch in' once, twice, thrice, or a fourth punch (If I have to type the alphabets S or Z, which are located against the digit buttons 7 & 9 respectively). Now look at the keypad of the old walkie-talkie that I use (inscriptions were imaginary!) as per the ECHOLINK manual. Yeah! They do really work! I tried with the old FT-411E. Hurray! They did work! As I transmitted the DTMF tones C+838220618232+# the ECHOLINK computer voice replied back to me "VU2MUE not found"!



A Ham Walkie-Talkie Keypad

Let us try it practically. Shown above is a typical keypad of our ham walkie-talkie. In fact, I compared it with an ICOM IC-W32A and found a total resemblance; at the same time I found something interesting! What I found intriguing as per the ECHOLINK user manual was that the letters 'Q' and 'Z' were placed against the digit button 1 in case of a ham walkie-talkie. But they come under the digits 7 & 9 in a mobile telephone keypad! So against a ham walkie-talkie's 'digit button 7', only the letters P, R and S are assigned. Similarly, only the letters W, X and Y are assigned against the digit button 9. The letters Q and Z are placed against the digit button 1! But, this belief came to an end when I zoomed across a picture of the YAESU VX-7R. The VX-7R has a keypad similar to that of a mobile telephone! It has P, Q, R and S altogether inscribed on the digit button 7, and W, X, Y, Z altogether inscribed on digit button 9 UNLIKE an ICOM handy.

Now, if I want to get connected to VU2ITI (if I opt for Connect by Call option) via ECHOLINK, I need to key in (if I use an ICOM handy): C+83 82 20 43 81 43+#

83	82	20	43	81	43
V	U	2	I	T	I

The alphabet 'V' is assigned against the digit button '8' and it is at the 3rd position (Now do an Exercise for the callsign KQ2ZY !)

73s de VU2MUE (Ex-VU2MSY)

http://www.qsl.net/vu2msy

E-mail: sbaruah@vigyanprasar.com

ECHOLINK Node# 52225 (Node not QRV)

HOME BREW

Remote Switching Using Dtmf Technique

- By SWL Virendra Battu

Several articles have appeared on the topic and much research has already been done. For the Indian HAM, kits that are available off the shelf from various suppliers across the globe are a costly proposition.

The basic requirements for this application are a telephone landline dedicated for this purpose, the unit described here, and a little understanding of the principles involved. More advanced kits use memory and coding/encoding to make this project much more versatile, but so is the cost involved. The project presented is for a HAM working on a shoestring budget and yet wishes to enjoy this hobby.

The basic logic involved is

1. Ring Detection
2. Switching a load ON at the instance of the landline being engaged.
3. Carrying out the requisite commands from the remote location by DTMF decoding.
4. Switching OFF the load on the caller hanging up after business or on demand.
5. Releasing the landline and resetting the system for the next user.

Before attempting to build or use this circuit please read the indemnity clause mentioned below:

Caution

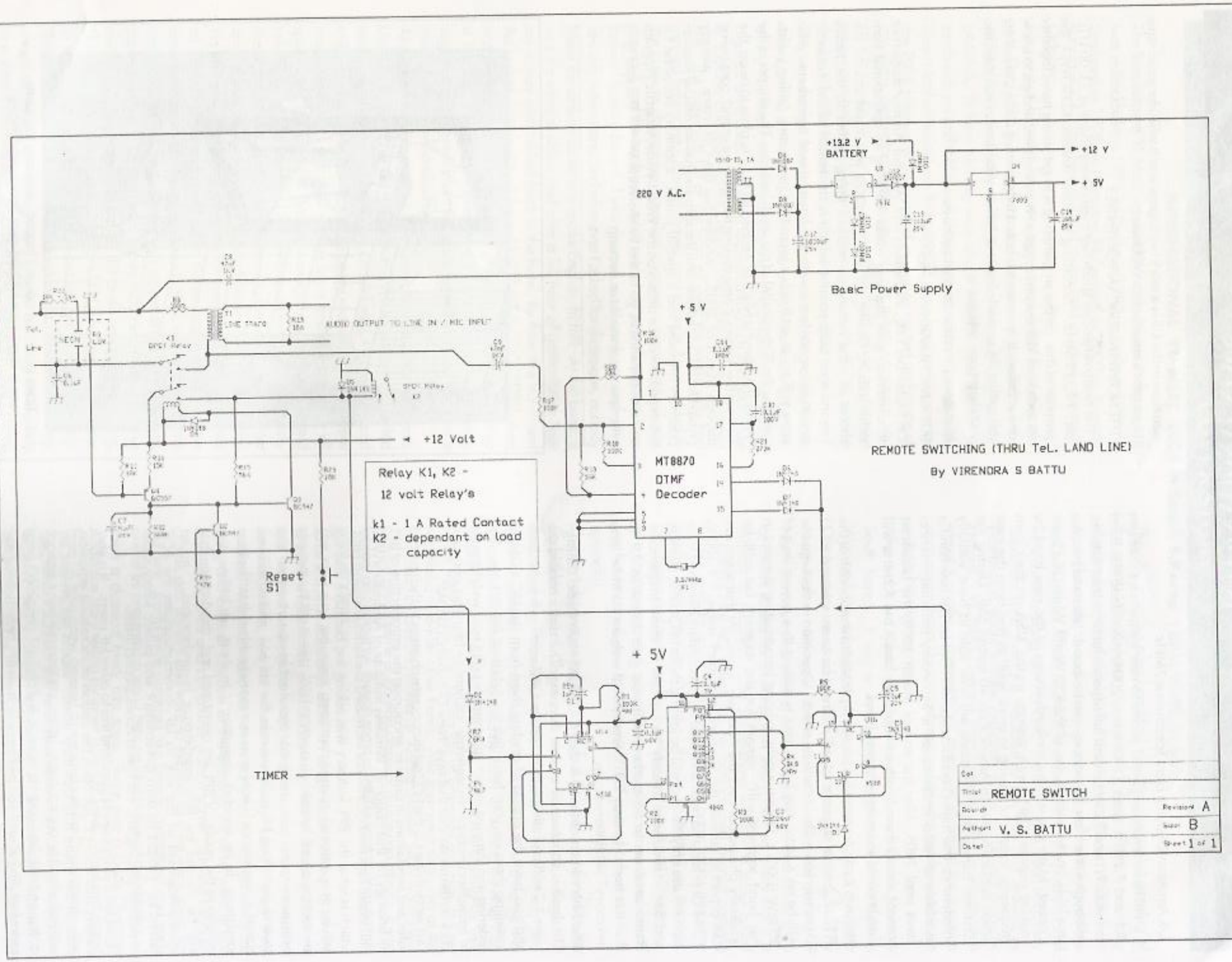
The circuit presented to the HAM is done in good faith. Since the unit does not use a code to identify, the unit responds to every caller. Also this unit may infringe some rules of Indian Wireless Act. The kit builder must assume all responsibility in the event of a fraudulent use.

~ Circuit ~

An elementary method of ring detection is used. A Neon bulb normally used in "Testers" by electricians is a cheap source. The Neon bulb should glow sufficiently bright for the LDR. As different exchanges use different Ring voltage and current, as also the Neon's are not of standard quality, a trial and error method with a series resister anywhere between 10K to 56k should give the desired result. A low resister value may short-circuit the telephone line, while a large one may not allow Neon to glow. The Neon/LDR assembly must be shielded against ambient light again the black plastic cover removed from an RF pin should suffice to house the Neon/LDR assembly. Glue the cover on PCB to prevent accidental exposure. On a ring being sent from the exchange, the Neon should glow, thereby LDR reduces in resistance and triggers Q1 and Q2 to engage the relays. Both relays are normally open type.

A suitable load in the form of a resistor connected in series with a Transformer normally used in cordless phones now is connected across the landline. There is no specific requirement as such for this transformer, except that it must have a one to one ration in primary and secondary windings of about 200 ohms. Any transformer

(Continued on page 16)


+13.2 V
BATTERY
220 V A.C.
+12 V
+ 5V
Basic Power Supply
+ 5 V
MT8870
DTMF
Decoder
+12 Volt
Relay K1, K2 -
12 volt Relay's
k1 - 1 A Rated Contact
K2 - dependant on load
capacity
Reset
S1
REMOTE SWITCHING (THRU TeL. LAND LINE)
By VIRENDRA S BATTU
+ 5V
TIMER
REMOTE SWITCH
V. S. BATTU
Revision A
B
Sheet 1 of 1

UK Amateurs Enjoying Extra Spectrum at 7MHz

UK radio amateurs gained access to new frequencies between 7.1 and 7.2MHz from 31 October, 2004. After dark, the band between 7.1 and 7.2MHz is still full of powerful broadcast stations, although some clear frequencies can be found. The band became available on the second day of the CQ World Wide DX Phone Contest. Many UK stations took advantage of the new band by making contest QSOs with stations in the USA on their own frequency, instead of having to work 'split' as had been the case when contacting North America on 40 metres SSB. During the daytime, numerous UK stations are now able to have virtually interference-free inter-G contacts above 7.1MHz. The new band is available to radio amateurs on a Secondary (non-interference) basis until 2009. After the end of March 2009, the broadcast stations should move to other frequencies and 7.1 to 7.2MHz will then become an amateur Primary band.

The Irish Radio Transmitters Society is pleased to announce that the 7.1 7.2 MHz segment of 40 metres has been released to EI Experimenters with immediate effect. Operation in this segment will be on a secondary basis and is subject to a power limit of 20dBW (ERP). Unfortunately, existing broadcasting stations in this band segment will remain for the moment but will be gradually phased out over the next five years. At that stage, we can expect to convert the segment to primary status. 1.300 to 1.304 GHz has also been allocated on a secondary basis and is for repeater use only. Ireland will be joining those in Croatia, Norway and San Marino who already had access to these frequencies. Radio amateurs in Switzerland will also gain access to 7.1 to 7.2MHz from 1 January 2005. From RSGB website via Mike Terry miketerry73@btinternet.com

The 24th edition of the 'Q-R-Zed C-D ROM Ham Radio Callsign Database is about ready to start shipping. The disk contains the same 1.2 million callsigns found on the QRZ.com on-line database and you have the option of reading them from the DC ROM or installing them on your hard disk for lightning fast access. For ordering and shipping information simply point your web browser to https://secure.qrz.com/store/qrz_cd.html or http://qrz.com and click on the photo icon that says "New Q-R-Zed CD ROM".

Last week in the US the FCC set in concrete changes to their part 15 rules and regulations in order to encourage the introduction of BPL technology in that country. Wireless Institute of Australia's(WIA) Phil Waite says the FCC has not increased the radio emission limit, which is what the BPL industry was asking for, but have also not moved to protect weak signal HF radio operation which is what the ARRL wanted. Although the FCC have introduced a series of mitigation techniques designed to manage interference, the ground protecting HF radio users in the US has shifted forever. Harmful interference is now seen as a manageable risk rather than something to be avoided altogether. In short, we believe the benefits to the public of BPL are overstated and the damage that will be caused by BPL interference is understated. In an acknowledgment of the risk to HF communications the FCC moved to protect its own government and public safety radio services by placing BPL exclusion zones around them.

However it did not see fit to extend this to other HF users. It is also a worry that the FCC left open the option of increasing emission limits in the future if BPL in their words- should not present an unacceptable risk. We have already seen that the FCC's definition of harmful interference is somewhat fluid. The WIA is recommending a 'wait and see' approach on BPL. We believe the situation in the US is a work in progress and it will take some time to gauge it's full effects.:- WIA News.

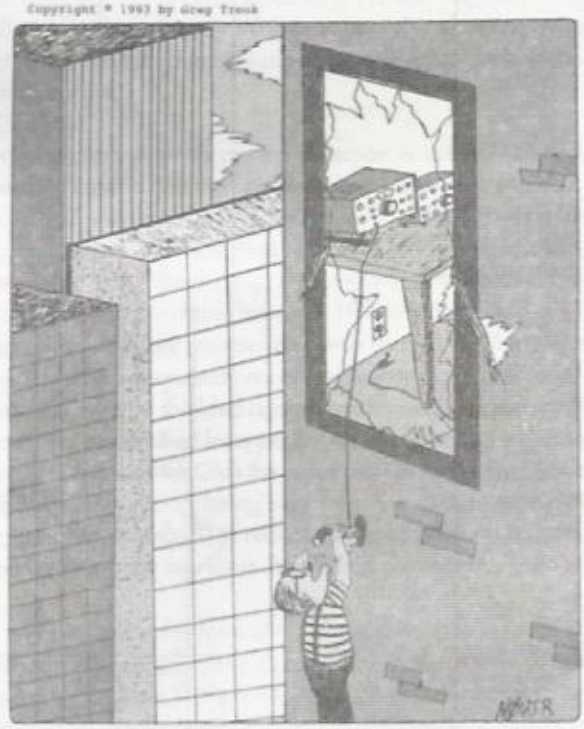
THE NORTH AMERICAN YOUTH NET

The North American Youth Net meets every Friday at 23: 00 UTC on 14.329 MHz. According to Steve Anness, KD5OWO, the purpose of this on the air gathering is to get young hams together for technical discussions or just a chance to meet and get to know one another. If you are interested in becoming a Net Control for this gathering e- mail Steve at kd5owo@arrl.net. You can also visit the groups website at

http://groups.yahoo.com/group/nayn

(KD5OWO via ARNewsLine)

On September 14th, the famed yacht "Apostol Andrey" started out to circumnavigate the area while carrying an operational ham radio station. During the trip the yacht will travel around the shores of the Antarctica without going further to the North beyond the 60th parallel which is the border of the Antarctic region in accordance with the International Agreement. The crew will try to establish a record for penetrating sailing yachts crossing the 70th parallel of the south latitude. The skipper of the "Apostol Andrey" is Nikolay Andrey, R3AL. He plans to be on the air from the Antarctic area starting this December and continuing through March of 2005. Andrey has the QSL cards already printed for this expedition and the ship also has an official Russian postmark onboard and a special postal stationary envelope for this expedition. For details on the World-Wide Antarctic Program and the expedition, go to the World-Wide-Web. The spot is in cyberspace at www.ddxc.net/wap



"Sorry about the noise, I tripped...anyway, the name here is Roy...I am located near downtown Chicago, and I've been a ham now for 20 years..."

COVER STORY

INTERNATIONAL YL MEET 2004 in Seoul, S.Korea : by VU2SWS, YL Sarla

The International YL Meet was held in many venues in the past. It was in Stockholm in 1991, in Osaka in 1993, in Berlin in 1996, in Svalbard in 1998, in Hamilton, N.Zealand in 2000,in Palermo Italy in 2002. This year in 2004 it was held in Seoul, Korea in October.

For me it all began a few years ago when I visited Australia and met Dot, VK6DB in Sydney and became a member of the ALARA(Australian Lady Amateur Radio Association). Unni, LA6RHA, YL from Norway was also a member and she got in touch with me and told me all about the International YL Meetings. Soon I had an invite from Ruth, IT9ESZ, from Italy, inviting me for the 2002 Meeting in Sicily Island. I was so excited and made all my plans, but unfortunately couldn't get return bookings, so I couldn't make it!!! But I swore to myself that I would go the next time, come hell or highwater!!! So when Chae, HL1KDW, sent me the invite for the YL Meet in Seoul Korea, I was all set to go.

This was the first time in my life that I was traveling alone for an activity which was all mine!!! A week away from home to be with all my YL friends! Yes!!!!! was like a small kid about to have a big big ice cream cone. I reached Incheon airport on the morning of 8th October and reached the Capitol Hotel where Chae welcomed me. The hotel was full of YLs from all over the world who had arrived before me. After a shower and change, I proceeded to the bank to change my travellers cheques. Capitol Hotel was downhill and the bank was uphill and I had to walk a good 1 km before I found a bank!! I was dressed in salwar kurta and got a few inquisitive stares and whenever I asked for directions, nobody knew the answer as no one spoke English, hi hi!! At the bank, it was the same problem and after a full hour of gesticulation I got my money and trekked back to the hotel. By then, the travel and the lack of sleep and the 2 km trekking tired me out and I crashed and slept the entire afternoon. My growling stomach woke me up a few hours later and I went to the restaurant to eat. Being vegetarian is a punishment when we leave India and so I had a meal of French fries and coffee.

At 6p.m all the YLs came to the conference room. I met my friends Unni, Ruth, Walli for the first time and we screamed and yelled and hugged each other like kintergarden kids!! I was introduced to Iku, the Japanese YL, who was to be my roommate. There were many Korean YLs with their smiling faces and of course they all spoke very little English. We still managed to communicate and talk.!! Dinner was great fun. The conference room was beautifully decorated with flags of all the countries in the world. We all went around introducing ourselves and exchanging QSL cards. Many YLs had bought beautiful souvenirs for everybody. After we were all seated, Chae welcomed us to Korea and one by one we introduced ourselves on stage. Introductions over, there was the ceremonial cake cutting. Dinner was served at out tables and I ate the last as I was a vegetarian and they didn't know what to serve me!!Hi Hi. Anyways after dinner Iku and I retired to our room. She was a dimunitive but feisty 62 yr old YL who took 1 full minute to speak one sentence in English but we got along fabulously. Though we had to be down for breakfast at 7 a.m the next day, we still talked late into the night and giggled and laughed like kids in a school dormitory!!! She called me "Sarlasan" and I called her "Ikuji"!!

The next morning after breakfast was the ceremonial opening of the event. We all wore our maroon T shirts. There were many dignitaries, who welcomed all of us to Korea. Gwen, VK3DL, from Australia made an audio visual presentation of the YL expeditions to Cook island. Rosel, DL3KWF showed us how she prepares and wins contests along with her OM. Unni, LA6RHA, read out a very important letter from the President of Norway and showed us information about women explorers in the Arctic and Antarctic regions. VE3MRS Geertrui from Canada gave us information about Canada. Presentations over, we all posed for a group photograph for a dancing photographer who made us all smile with his hip shaking antics.

After lunch we visited the Demilitarized Zone between North & South Korea. It was an eye opening experience of the Korean War and the subsequent division of Korea. From the Dora Observatory we could see the villages made for propaganda by North Korea. Imjingak Park houses 400 relics and pictures of North Korea's military force, politics, society and overall lifestyle. I of course posed for pictures with everybody, so many that it is difficult to recollect. In the evening we saw a show called "Cooking Nanta", where the performers used normal cooking vessels to make music. They banged pots, pans, tables and even plastic containers in rhythm. It was a mixture of comedy, acrobatics and music and high energy and lots of fun! Dinner was in a Korean resturant, where there was a burner on the table and you have to cook your food yourself. I of course had just rice with spinach!!

The next day we visited the Kyongbok Palace, something like the Forbidden city of China and also a Korean Folk village. It fascinated the Europeans to see a farm with no electricity and ancient systems. The place was full of school kids, who waved and screamed whenever we passed by. Later we went to the Ham Flea market in Yoido, where there were many OMs waiting for us!! There were many stalls selling lots of antennas and rigs, but we socialized and met other hams. We then went shopping at the local markets and had dinner at "Korean House" while watching a cultural programme of Korean classical dance and music. It was vibrant and colourful, though some of the YLs went to sleep as they were very tired.

The next day we were guests of Korean Telecom, one of the sponsors of the event. We had a guided tour of their organization and it was a vision of the future with Electronics. Later we went to the Electronics Market where everybody bought what they wanted. We returned to our rooms early to rest and get ready for the grand cultural function of the evening. All of us were in our traditional attire and I of course wore a saree. Iku and I shared clothes and jewelry and were so excited, as if we were going for our first party!!!We paraded like beauty contestants and each one of us presented a small item representative of our country. I sang a classical hindi film song. There was a Hans Christian Anderson story telling by Inger from OZ land. Unni and Ingrid from LA land came dressed as explorers of the Polar region. The Japanese and Koreans presented group songs and the Australians sang "Waltzing Matilda". A Korean singing and dancing group sang and danced. Then all of us picked up plates knives, forks and

whatever else we could lay our hands on and did our version of "Cooking Nanta". We all danced to live music and formed a human chain and danced between all the tables. I of course did my desi version of filmi "jhatkas"!!!! The food and wine flowed and so did our spirits as we danced in gay abandon!! But the best part was the loud shrieks of happiness from everybody when I announced that the next YL meeting in 2006 would be in Mumbai!!!!

The next day saw us leave very early for a 4 hour journey by the blue train to Kyongju City. It is an old city ruled by the Sila Dynasty from 57BC to 935AD.It is called a museum without a roof because we can see many old tombs and historical relics all over the city. We also visited the Museum, Chumsung dae and Bulguksa Temple. We had dinner at a Japanese restaurant and spent the night at the Kolon Hotel.

On the 13th, that is the next day we left by air for Cheju island. There we went to the "Mystery Road", an optical illusion where one sees the road going downwards, while in reality it is going up!!!We had a great time testing it!! We then went to see the cliff which is shaped like a Dragon. All shopped at the duty free shop and had a field day buying cosmetics and jewelry. That evening Unni, Iku, Ingrid and me we went out for Pizza! At the Pizza place, I spent 10 minutes gesticulating that I wanted only cheese and tomatoes in my Pizza. After nodding very seriously the waitress presented me a Pizza with meat all over!!!So I picked all the meat out and ate the bread as I was so hungry!! We then decided to shop in a departmental store. Iku decided to buy a pair of spectacles for herself. I left her at the shop and we promised to meet on the 1st floor after half an hour. One hour later there was no sign of Iku!! I went to the shop and found it closed. I searched all over, announced on the intercom, searched the street and still no Iku!!When I was just about to hit the panic button, Iku came running and nearly in tears. Seems they messed up her spectacles and wouldn't return her money and since it was shut down time, they worked on her specs with the front door of the shop closed and they were inside all the time. We decided to cool our frayed nerves with a round of beer!! Meanwhile the other YLs were worried about us. Anyway we all got back together at midnight and had a round of beer and cakes.

The next day we visited the Hyupje Caves, the Yomiji Tropical garden and the Chunjeon waterfalls. The Tropical garden houses hundreds of varieties of plants and it was like paradise. Soon it was time to get back to Seoul. We took a flight back in the evening and proceeded directly from the airport for our last party at a place called the "OB Stadium" which had a Karoake bar. Since it was our last day, all the OM and YLs of Korea were there. My friend Park, HL3EJT was there too and we had dinner together. The food and beer flowed. Many sang songs on stage and then started dancing. I of course couldn't control myself and when Michael Jackson's number "Beat It" was played, I got on to the stage and danced. There were catcalls and whistles and a lot of table thumping at the end and the men shouted "India, No 1".!!!!! It was well past midnight when we got back to the Hotel

I had to take an early flight out so I said my goodbyes before going to sleep.

The next day on my flight back, many incidences flashed through my mind like a kaleidoscope. My first meeting with my friends Unni, Ruth and Walli. My roommate Iku and her warmth and kindness! Iku banging the phone down on my husband when he called me from mumbai, saying "wrong number" because she couldn't understand him, nor he her!!! My food being served after everybody had eaten, because I was a vegetarian!!!!My long conversations with Walli in German. My meeting with Olga the oldest and most feistiest YL. All the warmth from the hosts, the Koreans. The laughter and the jokes and the sharing. The long discussions about radio and the adventurous things the YLs were doing in their lives. And best of all the kinship. When I touched down in Mumbai, I was sad and happy. Sad that I would see my friends only after 2 yrs and happy because I made so many new friends. I am now totally involved with organizing the next YL Meet which is going to be in the Year 2006 in Mumbai!!! All my YL friends have promised to be there and I am looking forward to it. It's a lot of work, but with some diligence, I hope to make it a success!!

Ragchewing with Vijay, VU2VVP

The idea of using two way radios to communicate with people always gave me a big thrill ever since I was a kid. With a lot of interest in electronics, it was only natural for me to start building small transmitters and receivers during my school days. This interest has continued till this very day.

I live on the 10th floor of a 15 storey apartment building in a close suburb of Bombay called Thane.(Grid Location:MK69LF).

I like working most of the bands on HF. I use a Diamond six band vertical, model CP6 and an inverted vee for 40, 20 and 10 meters. I have been lucky enough to also work quite a few countries on six meters in the year 2001 and 2002 with my vertical. For VHF and UHF, I use a Diamond X 510 dual band antenna.

The shack : On the table I have Icom IC 706 mk2G, Kenwood TM V7A dual band mobile, Icom IC T90 triband handie and a Daiwa PS 304 II power supply below. I prefer to keep the rest of the equipment that is not often used, in the cabinet above to prevent dust accumulation. There I have a few Kenwood dual band handies, DCI two meter band pass filter, Optoelectronics 8040 bench frequency counter, homebrew power supplies, SWR meters etc. A bookshelf by the side of it has electronics and ham radio books and magazines. I am active on all HF bands & 6 mts & usually work SSB voice. QSL direct or via bureau through : SM3DBU.

I am very glad that I got into the hobby of ham radio. I have made countless good friends because of that. I cannot imagine a life without ham radio.

By profession I am an architect and interior designer and besides radio I also listen to music and my favourite bands are Pink Floyd, Deep Purpla and Van Halen.

BASIC RULES IN MATCH MAKING

By Ankur Puranik, VU2AXN

Okay! You must be wondering whats matchmaking doing in HRN mag? Has HRN started some new marriage bureau or some consultancy services...ha ha okay guys just like we people match our horoscopes with that of our partners before we make a tie , we need to do a match between few things in HAM RADIO, to see if they can get along well. Okay I am not going to hold the suspense any longer. Lets come to the point. I'm talking about impedance matching.

Impedance matching plays a vital role in the Tx coverage and the signal quality. The three major mates involved here are : 1) the antenna 2) the coax and finally 3) the RIG.

In order to radiate the RF energy efficiently into space , we need to match the impedance of the antenna with that of the coax, to that of the rig, which is normally 50 ohms.

A resonant wave antenna has an impadance of 50ohms. A coaxial cable behaves as a transmission line at radio frequencies, and as a result it has its own characteristic impedance. And the antenna connector of the rig also has the same impedance, therefore for the trio to work together they need an impedance of 50 ohms.

What happens if the antenna does not have an impedance of 50 ohms?

Well in simple words it's called a bad antenna and can damage your rig. Technically speaking the antenna if does not have an impedance of 50ohms or is not of the right length, standing waves are formed.

Standing waves are nothing but reflected waves. When there is antenna impedance mismatch it cannot radiate all the power it received from the rig and hence the rf energy that was not able to leave the antenna and go into space, enters the coax again in the reverse direction. These standing waves are very harmful to the rig. Too many standing waves can cause your rig to blow up. Although these days all the modern rigs have some kind of protection, but all don't have. And why would you like to take a chance.

So how do we get rid of these standing waves and make them sitting waves?..Well well there is nothing such as sitting waves, but how do stop these standing waves.

As said above the coax used should be of 50 Ohms impedance. Eg: Use a RG-213 , RG-58 ,etc are coaxes with characteristic impedance of 50 Ohms. Avoid circular turns in the coax which changes its impedance instantly. If there is lot of extra coax at our end, its better to cut the extra coax rather than coiling it.

Now the antenna part.

All commercially available antennae are highly precise and absolutely fine tuned to the HAM BAND. So need not worry. But when we make our own dipoles and verticals we need to take care of this. The best way to check that all the power is radiated out into space is by using the SWR meter.

SWR stands for Standing Wave Ratio. Its nothing but, the ratio of power radiated out to the power reflected back. The right term is VSWR which stands for Voltage Wave Standing Ratio. Lets not get into details of the SWR and the SWR meter, but in short, conventional SWR meters have two needles on the panel. One indicates the forward power and the other the reflected power.

The best condition occurs when the reverse power needle stays flat and the forward power indicator needle lifts up, indicating the power going out. The right method to measure the VSWR is to check the intersection point of the two needles on the scale which determines the SWR as ..1 ...2....3.. and so on. When we have an SWR = 1. We say that the antenna is perfect.

Hence always when homebrewing an antenna or even while using a commercial antenna its always recommended to use a SWR meter to match the antenna impedance to the coax and the rig. Slight antenna trimming or adjusting is always required even for commercial HF antennae so as to get a flat SWR.

So matchmaking is essential for mankind as well as HAM RADIO!!! Hope you like my fundas!!!

KUDOS CORNER

The Commonwealth Medal for 2004 was bestowed upon our very own VU2UR, OM Arasu, by the RSGB. This medal is awarded each year to the entrant(s) who have, in the opinion of the members of the RSGB HF Contest Committee, contributed most to the contest over the years. Congratulations!!!

The WRI award no.2004/03 was issued to OM Navven VU2HNN on 7th Nov 2004. Congratulations.

WRI Award issued since the new format was printed
2003/No.1 : To OM Shaikh VU2SDU, Chennai.
2004/01 : To OM Laxman VU2LX, Bangalore
2004/02 : OM Robin, DU9RG, Philippines.

Those of you who are interested in PCB Design may find these links very useful.
http://www.expresspcb.com/ExpressPCBHtm/Download.htm, http://www.pad2pad.com/
http://www.pcb123.com/,
http://www.frontpanelexpress.com

Mrs. Saad Ali (Late VU2ST) passed away on 24th Nov. 2004.

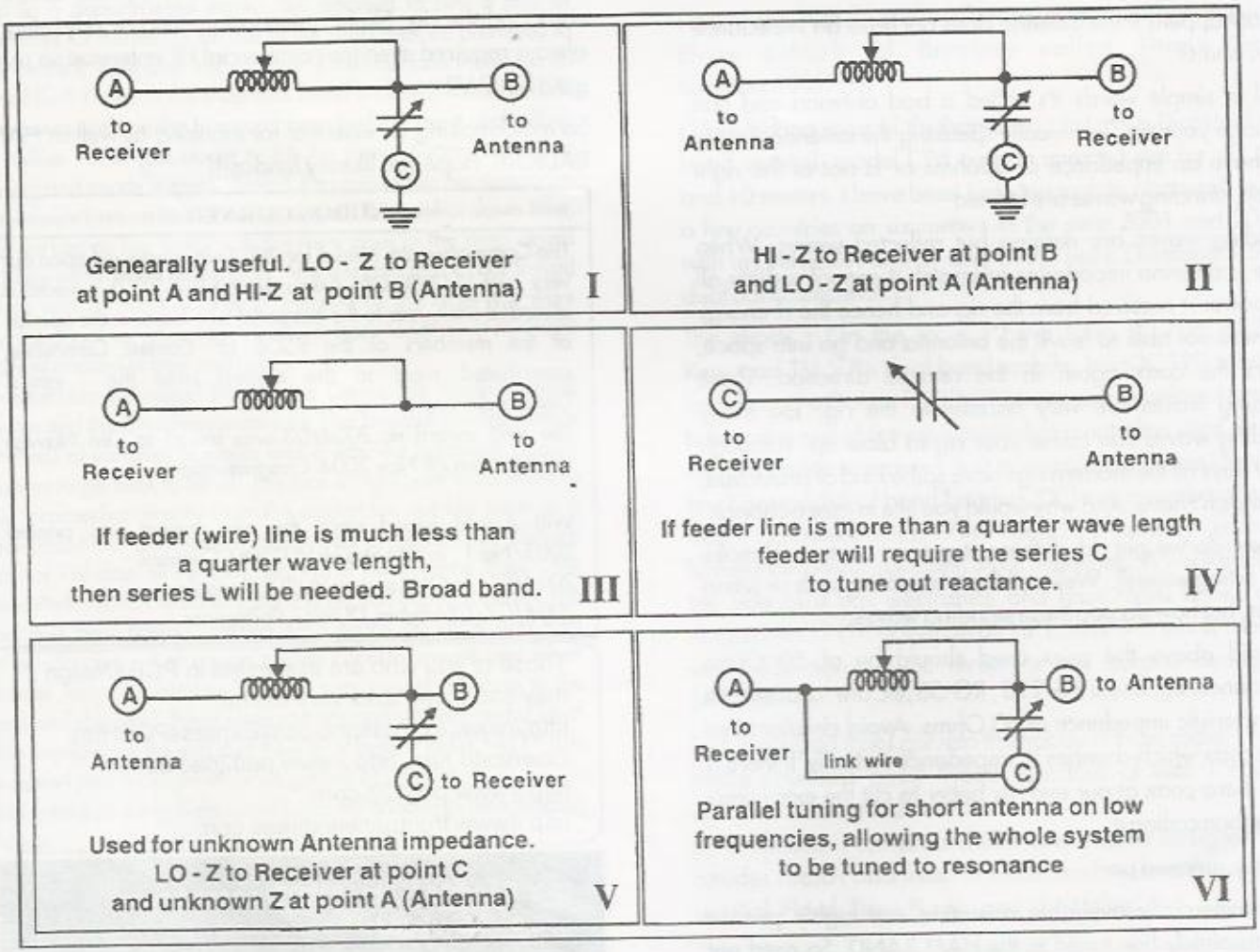
SIX PERMUTATION ATU

"Peak up your S. W. Signals for General RX" - by N. S. Harisankar, VU3NSH

I hope this project will give flexibility to construct and design more on ATUs. For my General Coverage Receiver, I wish to connect a Antenna matcher or Antenna Tuning Unit for getting the peak signals without images, intermode or other phantom signals. For homebrewing I had searched in the ARRL book. I had also asked VU2ARA and VU2HRS for giving some ATU Circuits from their collections. For reference VU2HRS has provided some miniature designs and tips of ATU design. These designs are having toroid transformer and two gangs. VU2ARA has provided a fantastic design which was used by him when he was an SWL. The design is taken from ETI Top Project. It is quite simple and has its permutations for different matching!!!! I reworked the text and circuit for HRN. I hope this article is very useful for hams and SWLs.

Everybody knows about ATU. It has only two components, an inductor and capacitor. Fig1 illustrates six combinations of matching circuits and they are very useful for different occasions. These six combinations are made out from a single circuit.

The maximum transfer of RF signals from the antenna to the receiver occurs when the end impedance of the antenna properly matches the input impedance of the receiver. In 1.7 MHz to 30 MHz an end-connected wire antenna is popular among HAMs and SWLS. This may be anything from a few feet of insulated wire indoors or a long outdoor antenna. Such antenna provides good long distance reception, but the matching of the antenna and receiver input impedance is often totally disregarded. The end impedance of the antenna depends upon the wavelength, half wave length long or multiple half wave length and if so its impedance is high. On the other hand, if it is a quarter wavelength long or an odd multiple of quarter waves, its end impedance is low. I have selected the mode in figure V for my use. For making air core inductor I selected PVC tube. Don't use black PVC tube for this project. I have made a pitch on the surface of



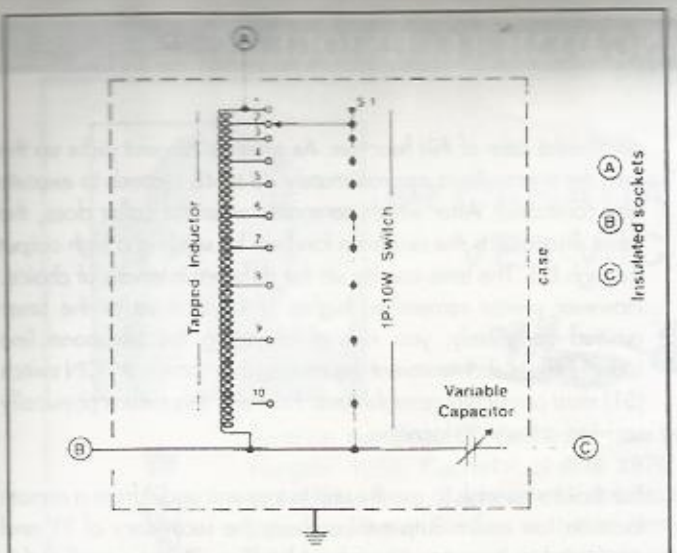


Fig.2 Circuit of "6 Permutation ATU - 1.7 MHz to 30 MHz RX"

All turns on 1½" dia,
3.½" length PVC
Total turns - 60
(2+2+3+4+5+6+7+10+21=60T)

Fig. 3 Coil winding data

AMATEUR BAND SPECTRUM

Meter Band	Frequency
160 m	1.8 to 2 MHz
80 m	3.5 to 3.8 MHz
40 m	7.0 to 7.1 MHz.
20 m	14.0 to 14.35 MHz.
15 m	21.0 to 21.45 MHz.
10 m	28.02 to 29.7 MHz.

COMPONENT LIST

Tapped Inductor	Refer Fig 3
Gang	365 PF or 500 PF
Switch	ERS-2 (1P-11W)
Knob	PK 17 & SE 015
Sockets A, B & C	Banana sockets or DC terminals
Case	Suitable metal case

the PVC tube, of 0.3 mm depth, for the entire windings as a stepped winding form. After winding apply some adhesive (araldite) at tapping to prevent turns moving. Never apply adhesive on the whole winding. This will reduce Q of the inductor. For variable capacitor I am using 500 PF air gang capacitor. You can raise this gang from junk box. The one pole ten way switch is available from ELCOM. The switch is fully sealed type and it is a PCB mounting type. Any circuit in fig. 1 can be used for your antenna matching which gives good results and for the sharp signal peaking, you can try short length of antennas. If your receiver is highly sensitive, then this circuit may not give significant result. You can try different types of receivers and in some cases remove AVC line to get significant peak in levels. So do experiments more on the permutations. Enjoy this project !

Hams at Ganesha Visarjan in Mumbai, India
-by VU2SCQ, Shantanu Chand.

Every year 10 days before the full moon around August-September a religious festival called Ganesha Chaturthi is celebrated with great pomp and gusto in India. Lord Ganesha is a highly revered God amongst Hindus. Hindus do not start any endeavor or business without offering a prayer to Lord Ganesha requesting that whatever they are about to do should go on with a hitch

People bring home beautiful idols of the Lord Ganesha made of clay or Plaster of Paris and worship him for 10 days. On the full moon day the idols are taken out in procession accompanied by bands playing and lots and lots of people accompanying the procession.

The idols are then immersed in the nearest water body be it a lake, river or the sea. There are thousands of idols varying in size from a couple of feet to the gigantic 32 footers. The largest immersion point in Mumbai is at Girgaon chowpatty beach where millions of people congregate to immerse the largest idols of the city.

With so many people around trouble is bound to brew. Every year there are lots of emergencies which include injuries, drowning, Lost and found and traffic coordination with local police.

This is where Mumbai Amateur Radio Society steps in.

This year on 27th September, volunteers from the society, under the leadership of OM VU2NLF secretary of MARS, manned towers constructed along the route of the processions to help the local police coordinate traffic and help with lost and found and medical cases.

On the main beach itself two towers were setup, one control tower and one life guard tower. The control tower was by OM VU2NLF and OM VU2NHR, Nirav Sanghavi. Other Hams such as VU3MWH, VU2JPN, VU3AUA, VU2OZO, and VU2SFN manned the other towers en route. VU2HIT, VU2LUB, VU2GYM and SWLs were manning the speed boats, first aid station and local municipal departments.

Using VHF base stations and 5/8 antennas on the towers and VHF handhelds for the Hams on the move, an entire network was created to coordinate between all departments of the government who were on duty at the festival.

The control tower station was up and running by 12 noon on the 27th of September. Other stations were set up soon after and by 12:30 noon the first surge of idols started arriving. As the place began to get crowded, the lost and found cases began to increase. MARS did a fabulous job trying to locate the parents of the lost children by relaying the description of the children to all the stations and each station respectively made announcements on the public address system. Weeping and helpless parents came rushing to collect their children from the Lost and Found booth put especially for these incidents.

Meanwhile HAMS on the lifeguard tower constantly monitored the crowds in the water in addition to the HAMS on the life guard speed boats in the sea and reporting drowning cases to MARS control who acted accordingly.

Hams were also instrumental in getting the injured to the first aid booth or summoning the ambulances on duty to the injured, as and when required.

By 6 pm, the sands of Girgaon Chowpatty Beach turned into a cluster of human heads as a mass of mankind took over. There were estimated 1 million people on the beach that evening singing, dancing and shouting "Ganpati Bappa Moriya, Phudcha Varshi Lavkar Ya (Lord Ganesha you are great, we look forward to your return the next year) as the night turned to day and the last of the idols were immersed at 6 am the following day. Surely, Hams from MARS will be back as well to serve mankind as they have been doing for many years in the past.

REMOTE SWITCHING USING DTMF TECHNIQUE

(Continued from page 8)

used in a coreless phone may be used.

The charge across C7 is sufficient to engage the relay as soon as LDR goes low in response to a ring from the exchange. Relay K1 is a DPDT type and has the triple function of triggering the counter circuit, operating K2, and engaging landline. Relay K2 may be used to switch a load, transmitter, or any device for which this unit may be used. The relay obviously should meet the current requirements of the gadget to be switched ON/OFF.

Next comes the DTMF part. Capacitors C7 and C8 connect the DTMF tone decoder to the telephone line. The Standard DTMF and commonly available decoder are used here. Various outputs (high in response to a key in from remote location) can be used. Presently pin 14 and 15 have been hardwired to provide a combined output. In the present circuit the DTMF decoded output is simply used to switch OFF the load from the remote location. Keys 9 and 8 on the telephone have been used to switch OFF the remote unit. However kit builders may use the other outputs (in response to other key commands) to execute different functions. Care must be exercised to buffer the output of MT 8870 by a transistor circuit and possibly a relay.

What happens if the caller forgets to switch off the load from remote location, the telephone landline remains engaged indefinitely. So a default timer is also included. Two IC's 4538 and 4060 take care of this function. As soon as this unit picks up the call, the timer allows approximately 45 to 48 seconds to execute any command. After which no matter what the caller does, the timer disconnects the unit from landline by sending a high output through D3. The time can be set for different intervals of choice. However please remember, higher is the time set or the timer omitted completely, you risk of engaging the telephone line indefinitely. In such an event depressing the momentary ON switch (S1) must physically reset the unit. However this means physically arriving at the unit's location.

For those who wish to use the unit to transmit audio from a remote location, an audio output taken from the secondary of T1 and connected to the transmitter should suffice. Please note that this part can be set by trial and error as different exchanges and different transformers may give different outputs. A suitable resistor divider network may solve high outputs.

The circuit is very easy to build on a general purpose PCB. Care must be taken to keep the Neon and LDR unit on another small piece of PCB and sealing it as described above. To the experienced HAM this project should not take more than 2 hours to complete.

A standard power supply completes the unit. Provision has been made to operate the unit through a Battery Powered Source, which makes it quite versatile.

The truth table for the now available MT 8870 or CM 8870 DTMF Decoder circuit available is mentioned below for anyone wishing to modify the present circuit.

Truth Table for MT 8870 0r CM 8870					
Key	Pin No 10	14	13	12	11
1	1	0	0	0	1
2	1	0	0	1	0
3	1	0	0	1	1
4	1	0	1	0	0
5	1	0	1	0	1
6	1	0	1	1	0
7	1	0	1	1	1
8	1	1	0	0	0
9	1	1	0	0	1
0	1	1	0	1	0
*	1	1	0	1	1
#	1	1	1	0	0
A	1	1	1	0	1
B	1	1	1	1	0
C	1	1	1	1	1
D	1	1	0	0	0
Other	0	*	*	*	*

If you have any queries please call on 9324359892 or 28059862(Mumbai)

CQ ZONE 4

CANADA
VE3 VJC

Born on 1st. Sept. '32 Gojra city now in Pakistan. Hons. in Punjabi, 1959, Bachelor of Arts 1970. Both from Punjab University, India. Bachelor of Education 1975, University of Jabalpur, India. Service in Indian Army wef 1950 to 1986 with signals 25 yrs. and as wireless operator 1950 - 1960. In 1975 transferred to Bombay ENGRS GP and retired as Sub. Major Hony Captain in 1986 after 36 years of total service in Army. Came to Canada as immigrant in '87 with all family. Four daughters, one son all married and with children. Son with Masters in Engineering from University of Chicago. My wife died on 24th March, 1992 while in Canada.

All my signals are dedicated to Corps of Signals, Indian Army and my heavenly abode wife **KULDIP CHAUHAN**

Ham Radio licence May 1993 with Morse Code 12wpm. and got 25wpm. certificate of code proficiency from ARRL, 23 Aug. 1996. Member of Scarborough Amateur Radio Club (Toronto). Worked 100 countries all on C.W. from 73 Amateur Radio Today (407). Rag chewing certificate from A.R.R.L. MARCONI 91st Anniversary certificate. Member of Royal Signals Amateur Radio Society, U.K. (RSARS 3325). Member of Radio Amateur of Canada, worked as security officer with various securities wef 1987 to 30 April 1996.

CHAUHAN DILBAGH S.
(Captain Retd.)
134 Chloe Cres., Markham, Ont., Canada L3S 2J1

TO RADIO

QSL Card

YEAR	MONTH	DAY	TIME U.T.C.
19			

RST	MHZ	MODE

Tnx QSO .....

Remarks .....

.....

.....

73 de

PSE QSL QSL TKS

I got my Ham Radio Licence in 1993 after the demise of my wife Kuldip to whom I have dedicated my signals, but the story of my Hamming life gose back 50 years with my life as a young boy dream. I had this dream during 1974 partition days of India & Pakistan as different countries. This is the time when I was driving my bullock cart in the convoy from Pakistan towards Indian territory. This place was Baloki at Ravi river in Pak. I chanced to see Indian Army Signals wireless detachments providing communication support to the movement of our refugees convoy. I wished if I were a wireless opr. too. The God fulfilled my desire when I joined the Corps. of Signals as a wireless opr. I still hold my Indian nationality and with efforts I got VU2 resiprocal licence in 1997 with call sign as VU3DBG. I have worked the following VU2 land stations with my Rig Yaesu FT 990 Antenna 3 elements tribander beam 50 feet high.

They are VU2BK, VU2SMN, VU2TMP, VU2PEB, VU2XX, VU2ELJ, VU2JN, VU2RAK, VU3WIA, VU2DK, VU2BKY, VU2JPT, VU2AU, VU2PHD, VU2PAI, VU2PKK, VU2WAP AND SWL VU+0020.

My permanent back home QTH 87/1 GURJAI PAL NAGAR, JALANDHAR-144001.
My e-mail : dilbagh_chauhan@hotmail.com

Wishing best 73 to HRN readers.....Dilbagh

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Memories of Korea












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