HAM
RADIO
NEWS

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The Journal of Amateur Radio Society of India (Member of IARU)

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"AMATEUR RADIO - A NATIONAL RESOURCE"

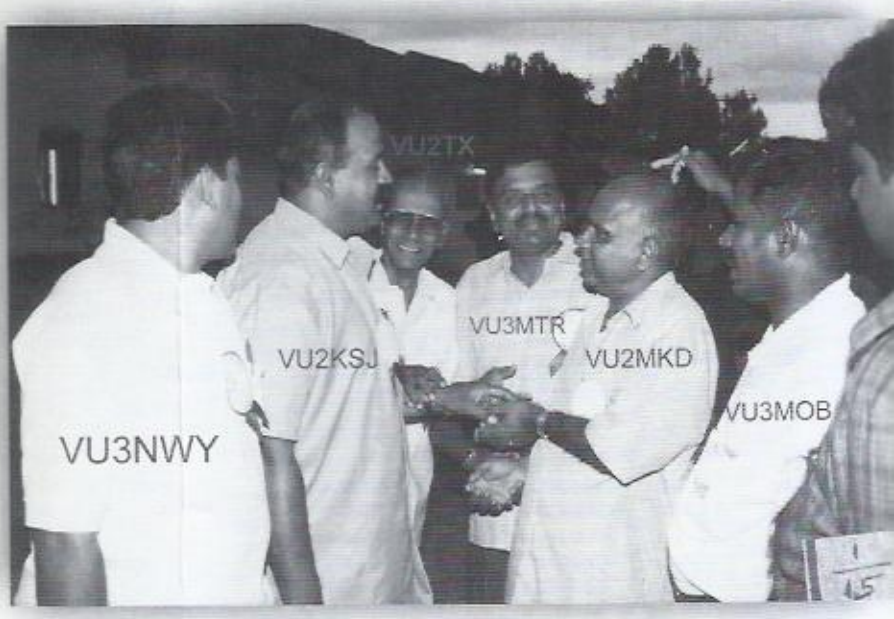
Jagdish Chandra Bose
The Unsung Hero

Unity Is The Motto

VU2RIG, Rajen Kavadia in his shack. He is featured in the "Ragchewing" column in this issue.

The Mumbai Amateur Radio Society members at the control room of the Thane Marathon, featu in "Club News"

The "UDUMALPET GANG"



B.A. HEGDE, VU2HEG. F 3/9/03

FROM THE PRESIDENT'S DESK

IMPORTANT ANNOUNCEMENT : The Annual General Meeting of the Amateur Radio Society of India will be held on 9th November 2003 at Gandhinagar near Ahmedabad, which is the venue of the Hamfest 2003. Elections to the Governing Council of the Society will also be held at the AGM. This will include President, Vice President, Secretary and / members.

The Returning Officer is VU2PCD, Pradeep A.Bakshi and he will finalise the list of voters by mid September. Please refer to the details in the letter of the Returning Officer, published in this issue along with the nomination form. Those who wish to pay by DD or Money Order must ensure that their payments are received in Delhi Office by the prescribed date, with adequate margin for transit delays. Members whose payments are received after the prescribed date can attend the meeting but will not be entitled to vote. Members are requested to pay their dues on time and ensure that they are eligible to file and/or support the Nomination Papers of candidates and also cast their vote.

QSL BUREAU : We have received indications that the QSL Bureau is not getting adequate assistance to handle the cards quickly and efficiently. Even though the QSL Manager is too proud a person to admit these difficulties, it is the duty of local hams particularly those who reside in his neighbourhood to provide assistance as often as possible.

While on this subject, we are painfully aware that a vast majority of Indian hams do not send QSL cards. This is unfair to the foreign Dxer who needs VU-cards. It is also necessary that all those who use special calls during contest etc. keep the Bureau informed so that their cards are mailed to them without delay.

CHANGE IN ADDRESS : Members may kindly note that even though the Magazine is distributed from Mumbai, the addresses are supplied by the Delhi Office. As such, any change in address should be notified to the Delhi Office. Similarly, all demand drafts, counterfoils of Pay-in-slips of ICICI Bank and M.O.s (No outstation cheques please. The ICICI bank charges heavy commission) must be sent to Delhi only.

After this issue of Ham Radio News and before the next , we will have , God willing, a new Governing Council to run the Society more efficiently.

Sawooni

VU2SDN

CQ ALL VU HAMS,

It's a pleasure to publish the 3rd issue of HRN and every issue has been a learning experience! I am learning the fine art of Desk Top Publishing. My circle of Ham Friends is increasing more through the internet than the radio. Everybody has been sending me great articles and I am slowly building an article bank. In every issue I hope to introduce new columns. I request all clubs to please give me details about their clubs including their membership, contact phone numbers and sites on the net. I also wish to highlight all those who have received certificates of any kind. It is impossible for me to request each and everyone, so please send it to my email id. In every issue I have been highlighting one Ham. In this column I need Hams from all over VU to write about their shack and their views. Till now I have to inadvertently depend on Hams in Mumbai whom I can pursue through the lima lima! Before the next issue I hope many Hams will write to me about their shack.

I hope you will enjoy this issue. It will reach(hopefully) you close to our Independence day and we at ARSI wish all Hams and fellow countrymen the very best on this very important day. Be proud to be a VU.

JAI HIND,

Sarla

Sarla VU2SWS

IMPORTANT NOTICE TO THOSE WHO MAKE PAYMENT IN ICICI BANK

Since November, 2002, some members both old and new have deposited their subscription in ICICI Bank in their area. They have, however, failed to send us the copy of the counterfoil of the pay-in-slip. Without this, we just do not know who made the payment and can not, therefore, account for it. A list of such payments was published in the last issue.

The position as on 01.08.03 is shown below. There are in all, 9 (Nine) payments which we are unable to account for. These are

Payment Date	Amt	Paid at	Payment Date	Amt	Paid at
02.11.02	Rs. 125	Rajpalayam	12.03.03	225	Mumbai
13.05.03	Rs. 150	Mumbai	17.06.03	310	Kolkata
07.07.03	Rs. 160	Mumbai	08.07.03	60	Pune
10.07.03	Rs. 85	Guwahati	11.07.03	150	Cochin
12.07.03	Rs.470	Bangalore			

The concerned persons are requested to kindly inform the Delhi office immediately.

OFFICE BEARERS

President, IARU Liaison Officer Liaison Officer & Awarded Manager: Sahruddin,VU2SDN,274, Paryatan Vihar, B-4,Vasundhara Enclave,Delhi - 110 096, Phone : (011) 2262 2521 Fax : (011) 2262 1982, Email : vu2sdn@rediffmail.com.

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QSL Bureau:ARSI QSL Bureau,P.O.Box 17116, Kolkata - 700 033.

The current address of the Society is Amateur Radio Society of India, C/o Sahruddin, 274, Paryatan Vihar, B-4, Vasundhara Enclave, DELHI - 110 096

PAYMENT INSTRUCTIONS

1. For those cities where there is a branch of ICICI Bank.
Payment can be made by a local cheque or cash at the branch of the bank **(not the ATM),** quoting the name of the Society in full (not "ARSI") and the account number **629701081104.** The Counterfoil - either original copy or a photocopy - should be sent to the Delhi Office. **This is absolutely necessary.**

2. Where there is no branch of ICICI Bank.
Payment can be made through a demand draft, obtained from any bank, drawn in favour of "Amateur Radio Society of India" (not ARSI) and payable at Delhi / New Delhi. As far as possible, please do not send outstation cheques to Delhi office.

Payment of Subscription

Due to the unsettled condition of the Society consequent on our vacating the Kurla Office, members were not very clear as to where they should send the subscription.
As the situation has now stabilised and the Society is functioning properly from Delhi Office, all members who have not yet paid their subscription for 2002-03, may kindly do so as per detailed instruction given above.

Several associate members who have since received their call signs are now eligible for corporate membership. They are now required to pay Rs. 150 as annual subscription instead of Rs. 75. Some of them are in arrears for two years. They are requested to update their payments at the earliest. As licenced amateurs, they are no longer eligible for associate membership.

Contents :

Membership Category	Admission Fees(Rs)	Annual 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.

I received the Ham Radio News and it was a pleasure to go through the magazine. You have taken good effort to bring out the magazine in good standard. Please ask the hams who can write some technical articles and some hints and kinks which will be useful to the new hams to write something and send it to you for publication. This can be done through the Air Net India.

We here in Pollachi are very much interested in the growth of this all India society which should be strong and represent all the hams from the country.We will be behind you on all your efforts. We have a club and the president is OM SAMY, VU2TX , one of the oldest hams from the country.

Bye for now and 73 and 88 from all of us here at Pollachi.

SAIF , E.S.A.SAIFUDEEN, VU2DX,

I just received my copy of the April-June 2003 issue of HRN. I must congratulate you and the HRN team on the outstanding effort and the great issue. I noticed a tiny typo on page 3, in the box titled 'A correction'- so here's a correction in the correction

St. Mary's island which we activated in 2001 is AS-096 and not AS-016 as mentioned. And both our operations of AS096 and AS161 (St. Mary's and Sacrifice rock) were islands and away from mainland. It has to be an island if it has to qualify for RSGB's IOTA award, and they indeed were, unlike what is mentioned. They are indeed closer to mainland compared to some other islands, but definitely cannot be classified as being operated from mainland or coastal regions. They have been activated from the island itself.

Just thought I'll let you know about these. Incase you want to know more about our AS161/AS096 operation, let me know, I could send you an article I wrote (also published by some DX magazines including the 73 Magazine). We also have a website www.vuiota.com which will give you all the details of both the operations. Do visit it sometime if you havent already. Best 73

Sri, VU2SBJ, Manipal

HRN apologises for the big mistake. About the fact that these islands were activated from the island itself, there is no doubt. The vuiota group which activated this island are famous all over the world specially because they did the activation under hard conditions and used ingenious methods to get to them.Kudos!!!And hoping to get more reports to print about more island activations.

With the second issue of the HRN being delivered ,you really deserve a lot many thanks. Thanks again for incorporating a fantastic project RM96. Generally it happens that we get interested in such projects and then get stuck up at some stage, with a whole lot of components and PC Boards. In order to get the best out of such projects, I suggest to have a regular forum on the subject. With the involvement of expert homebrewers, the new Hams wishing to build projects like RM96 will definitely benefit. If a regular column is provided in HRN for RM96, all difficulties, amendments, improvements can be published for the benefit of members. I appreciate the coil winding details contributed by VU3NSH and request all those who have already constructed the same to contribute more RM96 related articles for publication. Tnx,

SWL Dinesh Patel.

HRN welcomes and will publish all RM96 related projects.

We are glad to anounce the availablity of new Winlink PMBO node A71BY)which became operational from 1st of this month. Indian hams will be able to send and receive mails via HF from this station too. 4S7NR@HS0AC Nadisha(sadly now a silent Key) was one of the Hams accessing similar winlink PMBO in HS land. HS0AC and A71BY are the two nearest winlink nodes to VU hams. Antenna is roughly pointing to VU and whole indian subcontinent should have not problem accessing it.New users can check the web page www.winlink.org for more details for such packet operation. Station details are as follows : The antenna is a beam(Mosley 9 ele) with no front/back ratio covering all these bands. It is bi-directional. Grid Square is LL55sa. Steve, k4cjx (Winlink CMBO Sysop) Name - System Operators: A71BY, Jabor Hamed Al-Thani, VU3NAX, Abdul Rouf, VU3MUV, Murali Dharan. Station Call sign: A71BY

Station Location: Doha City, Lmurkab Aljadid Qatar 432, Qatar.

Station Information:A71BY is operated by its system operators. A71BY equipment is furnished courtesy of Jabor Hamed Al-Thani, A71BY, where the station is located. The Kenwood 850 is connected to a Mosley 9 element bi-directional antenna on a 35 meter tower with a bearing 300 degrees and its reciprocal, covering the Red Sea, North of Saudi Arabia and full Costal Arabian Ocean area including the Indian Sub- continent, North Africa and Europe. The inclusion of a Kenwood TS-950SDX is proposed as soon as the traffic pattern is established. A71BY Scan Center Frequencies: 10123.9 10145.2 (P3) 14074.9 14097.2 (P3) 18101.9 18107.2 (P3) Station Details/web page http://winlink.org/stations/A71BY.HTM Note the change in freqs.Station Details/web page http://winlink.org/stations/A71BY.HTM Note the change in freqs.

Murali.B VU3MUV

Hamfest India will be held on 8th and 9th November in Gandhinagar, Gujerat. The venue is Town Hall, Sector 17, Gandhinagar. The registration charges are Rs.100 only. Dormitory accommodation is available for 200 delegates @Rs25 per day. Hotel accommodation can also be arranged as per request. Website:www.giar.org. Email:pandyagj@yahoo.com, pcvalera@yahoo.com. Contact person:VU2CPV Pravin Valera-09825447488, VU2JJJ Jinofer Bhujwala-09825060403. Postal address: Institute of Amateur Radio, Gujerat, Bock No 64/1, GH Type, Sector 23, Gandhinagar , Gujerat-382023.

The Sardar Patel University in **Gujerat** has become the first to have its own community radio station on the campus. The station will not broadcast news or commercials but will focus on science and technology programmes. The proposed 30 metre high tower will transmit airwaves within a radius of 8 kms.

LUCKNOW : A General Body Meeting of the HAL Scouts Amateur Radio Club (VU2 LKO) was held on 6th July 2003. Present were VU3WJM(Rahul), VU2AIE(Amish), VU3SUA(Sunil), VU3PBC(Pati), VU3NRI(Nikhil), VU2NTT(Neeraj on 2M), VU2DCT(Pandit). OM Pati was appreciated for coming the first time on air with his rig GE524. Decision was taken to install a VHF Base station at the Club, to be manned by Hal Scout Hams . The responsibility of commissioning this station was given to VU3SUA and VU2AIE. OM Rahul donated one SMPS to the club. The prototype & circuitry pf SB-20, a very low costing SSB 20m monobander are ready and the final assembly of 10 such sets is to begin shortly. The latest club project is DIGIVU, a PSK31 interface, the prototype of which will be demonstrated in the next club meeting . OM Neeraj was entrusted the task of testing DIGIVU and also explore the possibility of setting up a repeater at Lucknow.

The **Mumbai** Amateur Radio Society participated in full strength in the Thane Monsoon Marathon held on 18th July in Thane by providing communication support required for the success of the event. The Hams who participated are:VU2JPN(Jaiprakash), VU2LIB(YL Madhu), VU2UGO(Sandip), VU2HIT(Huzefa), VU3AUA(Arun)VU2UGJ(Mukesh),SWLs Micky Korde, Sailesh Pradhan, Sailesh Deshmukh, Santosh Vedante, Mr Vaidya and Ms Srivastav. In another instance SWLs Milind,Vaidya,Sailesh and Sanjay,all of whom are waiting for their tickets were involved in the rescue of many picnikers at Yeour who were trapped due to heavy rains. On hearing a distress call on the radio, these SWLs rushed to the site and the rescue operations lasted for a few hours.
The Indian Railways have provided 5 watt walkie talkie sets to drivers and guards of all trains to ensure effective and timely communication between driver, guard and station master in order to improve safety of rail services to the nation. In addition 25 watts VHF sets have been provided to all stations of broad guage double and multiple line sections.

RENDEZVOUS **MAMALLAPURAM** (OR) EYEBALL MOONLIGHT
A novel idea was conceived by VU2INA, who is a resident of Mamallapuram to hold an eyeball meet on the 15th of FEB'03. Supporters were VU2KBX, OM ANNA, VU2VIT OM VITTAL, VU2MPK OM KANNAPPAN, VU2XHA OM PADMANABAN. Novelty lies in that a) No delegate fee b)No entry forms or registration c) No agenda d) No free lunch. Surprisingly the meet was a grand success with 50 hams attending and enjoying the scenic tourist spot. VU2RM was the special invitee. VU2PTR organised a quiz & awarded prizes. Winners were VU3MPA, OM PANDY, VU2DX OM SAIF. The event is expected o be repeated every year.

Rajapalayam Club organised a WORKSHOP to build RM 96 based transceivers during June'03. VU2KLG OM Kalugumalai Raja, VU3PPC OM Palanichami and VU2DXJ OM Dharma put in months of labour to procure components, fabricate chasis etc. to ready over 20 complete kits for the workshop.
The workshop was conducted at Ramaswami Raja Polytechnic College at Rajapalayam which provided space and all the electronic equipments and work bench required for the workshop. Needless to mention, the backing given by VU2RMJ OM RAMA RAJU and VU2ESH OM Rajesh who provided technical expetise. Six hams from different cities participated and completed the project and are on air now. They are in addition to organisers VU2CVD, VU2RPC, VU2VSG.Notable visitors to the workshop were VU2VIT,VU2SHL,VU2BVM,VU2NDR. The collector of Ramnad is the President of the Club and VU2KLG is its Secretary.

CHECK-IN CONTEST FOR CW NET

Period:01.08.2003 TO 31.12.03.Timing:07.30-08.00 IST.
Freq:7015 KHZ.Certificates and prizes for Top 3 checkins, 50+ and 100+ checkins. The contest is organized to promote CW operation and to create an interest in old timers to use their key again. Sponsorship and donations for prizes and gifts will be accepted. Net controller is Mr.Rajan Nambiar VU2RJN assisted by VU2DX. Contact Rajan at Kundamveetil, PO Kulapully, Shoranur-679122.LL-04926 220761.

SILENT KEYS

Mr.G.V.N.Raju, VU3GVR a very active Ham of Visakhapatnam expired on 29 July 2003.
He is survived by his xyl Mrs.Padma, VU3GPD and two sons.
4S7NR, Nadisha Ranmuthu,met with a tragic end while serving with the ICRC in Baghdad Iraq. He will be missed by Hams worldwide.

Dr. Pradeep A. Bakshi,
A-3, Gokul Dham Society,
Behind Vidyavihar School,
VADODARA 390 023
8th August 2003

ALL MEMBERS OF THE AMATEUR RADIO SOCIETY OF INDIA
Subject : Elections to the Governing Council 2003-2005

Having been appointed as Returning Officer by the Governing Council at its meeting held on the 8th August, 2003, I hereby request you to follow the procedure detailed below, in accordance with Rule 27 of the Constitution of the Amateur Radio Society of India.

1. Notice is hereby given for an Election to the Governing Council to be held on 9th November,2003.
2. The elections are for filling the post of President, Vice President, Hony. Gen. Secretary, Treasurer and 7 General Members of the G. C. One post being reserved for the outgoing Secretary.
3. Nominations of candidates for the above categories must be in the annexed form, duly proposed by one member and seconded by 4 members, and must carry the signature of all the members and also the signature of the candidate as Having accepted the nomination.
4. Only Patron, Life ,Corporate and Associate Members are eligible to stand for election and vote.
5. Members eligible to stand and vote in this election shall be only those who have paid their dues by the cut off date 9th September 2003.
6. Completed Nomination Papers must be received at the above address on or before 30 Sept, 2003.
7. Scrutiny of Nominations shall be completed by 7th October ,2003 and Ballot Papers containing names of eligible nominees will be mailed to the members by the 14th October ,2003.
8. Those who cannot attend the General Body Meeting to be held on 9th November,2003 can send me their Ballot Papers by post double sealed in the two envelopes provided, the outer envelope must carry the name ,callsign and signature of the voter, while the plain inner envelope must be unmarked and sealed so as to reach me on or before the noon of 7th November 2003.
9. Any alteration, variation or departure from the above procedure shall render the Ballot invalid.
10. All Ballot Papers will be opened, scrutinized and counted with the help of two scrutineers appointed by the General Body and the results declared at the General Body Meeting.
11. Each Member can propose/second only ONE person for ONE post for instance if a member Proposes and/or seconds two Names for the single post of Treasurer, his nominations shall stand cancelled for both nominees.

Pradeep A. Bakshi
VU2PCD.
RETURNING OFFICER

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AMATEUR RADIO SOCIETY OF INDIA

NOMINATION PAPER- ELECTIONS 2003-2005

NAME OF POST	NOMINEE	CALLSIGN	SIGNATURE
01. President			
02. Vice President			
03. Gen. Secretary			
04. Treasurer			
05. Member			
06. Member			
07. Member			
08. Member			
09. Member			
10. Member			
11. Member			

	Name	Callsign	Signature
A. Proposed by			
B. Seconded by (i)			
(ii)			
(iii)			
(Iv)			

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Acharya Jagdish Chandra Bose

Dr. Subodh Mahanti

Jagdish Chandra Bose, popularly known as J.C. Bose, occupies a unique position in the history of modern Indian science. He is regarded as India's first modern scientist. In January 1897 Bose delivered a lecture at the Royal Institution, London, a Friday Evening Discourse, the then most prestigious and visible platform for announcing new discoveries. It was Michael Faraday (1791-1867) who started the Friday Evening Discourse in 1826. Some of the most prominent British scientists worked in the Royal Institution and participated in these discourses. In this lecture Bose demonstrated his devices for the generation and detection of radio waves.

Bose did pioneering research, first in physics and then in physiology. In 1888 Heinrich Rudolf Hertz (1857-94) produced and detected electromagnetic waves in the 60 cm wavelength range and in doing so he verified James Clerk Maxwell's (1831-79) electromagnetic theory. However, Bose was the first to produce millimeter-length radio waves and study their properties. Bose also perfected the method of transmission and of reception of electromagnetic waves. In recent years there has been welcome news of proper credit being given to Bose for his pioneering work in the area of wireless telegraphy. The Institute of Electrical and Electronics Engineers (IEEE) in one of their publications wrote :" Our investigative research into the origin and first major use of solid state diode detector devices led to the discovery that the first transatlantic wireless signal in Marconi's world-famous experiment was received by Marconi using the iron mercury-iron-coherer with a telephone detector invented by Sir J.C. Bose in 1898." Bose was a pioneer in microwave optics technology. He was the first to show that semiconductor rectifiers could detect radio waves. Bose's galena receiver was amongst the earliest examples of a lead sulphide photo conducting device. Jagdish Chandra Bose was born in Mymensingh, in his mother's parental house, now in Bangladesh on 30th November 1858. Bose started his education in a vernacular or Bengali School, a pathsala, which was founded by his father in Faridpur. In 1869 Bose was sent to Kolkata, where after spending three months at the Hare School he was admitted in St. Xavier's College. In 1879 Bose passed the BA examination in the Physical Science Group of the Calcutta University. In 1884 Bose obtained a Bachelor of Arts with a second class in natural sciences and in the same year he also obtained a Bachelor of Science from the University of London. After coming back to India he joined the Presidency College at Kolkata in 1885. He was the first Indian to be appointed Professor of Physics in the Presidency College.

In 1894 on his thirty-fifth birthday Bose decided to pursue scientific research and not confine himself with a teaching assignment alone. There was no laboratory or apparatus or peers. He conducted his research in a small 24 square foot room, which he was given in the Presidency College. With the help of an untrained tinsmith he devised and constructed new apparatus for his first research on electric radiation. Bose devised and fabricated a new type of radiator for generating radio waves. He also built a unique and highly sensitive 'Coherer' or radio receiver for receiving radio waves. Bose's coherer was far more compact, efficient and effective than the ones used in Europe. It was Oliver Lodge who had devised an improved version of coherer invented in 1890 by Eduard Branly (1846-1940) of France. Though Branly invented the coherer, he did not conceive it as a detector, it was Lodge's contribution. Even the term 'coherer' was coined by Lodge. Branly had shown that metal fillings enclosed in glass tubes with loose contacts form an insulator. Though the fillings themselves were good conductors, they would be highly resistant to small voltages. However, in the presence of Hertzian waves their resistance was enormously reduced or in other words they switched to a conducting state and they would remain in that state until shaken or tapped slightly. In the coherer developed by Lodge, wires in contact with the fillings placed in a glass tube led out from the end of the tube and were connected in a series with a galvanometer. When there is a radiation, the fillings would switch to a conducting state and a current would be obtained which will be detected by the galvanometer. Bose's receiver was a great advance on that of Branly and Lodge. In earlier versions the sensitivity varied and at times they behaved in an erratic manner. Bose replaced the irregular fillings by fine wire spiral springs. They were fixed in ebonite and under control of a spring. Using his improved equipment Bose demonstrated various properties of radio waves like reflection, absorption, interference, double reflection and polarisation. He also demonstrated a new type of radio waves as small as 1 centimeter to 5 millimeters. Such waves are now called microwaves, and are used in radars, ground

telecommunication, satellite communication, remote sensing and microwave ovens.

Bose was very much against patenting his invention. He had resolved not to seek any personal advantage from his invention. He pursued science not only for itself but for its application for the benefit of mankind. In his Friday Evening Discourse at the Royal Institution, London, he made public his construction of the coherer. Thus 'The Electric Engineer' expressed "surprise that no secret was at any time made as to its construction, so that it has been open to all the world to adopt it for practical and possibly moneymaking purposes." In 1901, one of the great manufacturers of wireless apparatus, approached Bose for signing a remunerative agreement as to his new type of receiver. However, Bose declined the offer. One of his American friends, Sara Bull (also known as Mrs.Ole Bull), was able to persuade Bose to file a patent application for his galena receiver. The application was filed on 30 September 1901 and it was granted on 29 March 1904 (US patent No. 755,840).

However, Bose refused to accept his rights and allowed the patent to lapse. Fascinated by the peculiar behavior of his electric-wave receiver, which seemed to show signs of "fatigue" after prolonged use but could be 'revived' to its original sensitivity after some rest, Bose took up a systematic study to understand this phenomenon. He started believing that metals too had "feelings". From metals he turned his attention to plants and he found the latter responding more favorably to his experiment than the former. Bose thought that he had hit upon the underlying unity in the natural world between living and non-living. And he fully devoted himself to this line of investigation.

In 1903 Bose was honoured with Commander of the Order of the Indian Empire (CIE) at Delhi by the British Government. He received in 1912 the Commander of the Star of India (CSI) at the Coronation of the British Emperor. He was knighted by the British Government in 1916. Bose was elected a fellow of the Royal Society (FRS) of London in 1928. Bose died on 23 November 1937 at Giridih in Bihar.

We would like to end this article by quoting Geddes : "The life-story of Jagadish Bose is worthy of close and ardent consideration by all young Indians whose purpose is shaping themselves towards the service of science or other high cause of the intelligence or social spirit. It is possible that looking upon the triumph of the end and knowing nothing of the long uphill road, the slow costly attainment of ends, they may think that a fine laboratory or other material endowment are the antecedent conditions of successful achievement in intellectual creation. The truth indeed, is far otherwise. The countless obstacles which had to be surmounted only called forth in Bose all the endurance and all the effort which are latent in manly natures, welding them to the fullest strength of character and intensity of thought by which alone a great life-task can be accomplished. In contemplating the great career of his fellow countrymen, the young India will be stimulated to put brain and hand to fine tasks, fearing nothing. Thus will he be inspired not only to recover the noble intellectual tradition of the Indian past, but to restate these traditions in modern times and find the greatest challenge for mind and soul in achieving their vital relation with the coming age."

(Part 1) *Reproduced from Dream 2047 (October 2002), monthly newsletter of Vigyan Prasar, Department of Science & Technology.*

IARU HF CHAMPIONSHIP-2003 AND AT0HQ.

A report by VU2UR.

In the previous years VU2UR operated on behalf of the Amateur Radio Society of India in the IARU HF Championship Contests using his own call for the HQ station. This year there was a major change, as efforts made by OM Sahar, VU2SDN paid off and the special call "AT0HQ" was allotted specially for this Contest to ARSI, to be operated at the QTH of VU2UR. The HQ suffix is a general requirement to show the HQ status of the National Society, as is the case with most of the HQ stations of the different National Societies taking part from all the Regions of the world.

Promptly, the station AT0HQ was activated from 1200 UTC of 12th to 1200 UTC of 13th July excepting for the unforeseen power failures and operator resting. The participation was carried on with 35 watts of power and inverted V antennae from 7 to 28 MHz bands. Approximately 220 QSOs were made mostly in CW, including a few in SSB.

While many of these Societies had a separate 1 kW transmitter for every band with directional beams of the latest designs, operated by expert contesters at the key/microphone, India showed its presence only with a single operator, single transmitter, all bands, low power participation. Many of the HQ stations contacted requested for a QSY to other bands for a new HQ multiplier. Among the claimed scores from the different HQ stations which participated, AT0HQ, can be easily located in the bottom of the list. Better be in the list than not at all.

VU2NRO, VU2LX, VU2SWS and possibly VU2TS were the other operators heard during the contest hours on various bands.

ARSI hopes to see more participants taking part in the various contests and requests all the Clubs to encourage activity of this type. Otherwise, VU or AT prefixes will never be listed in any such activity.

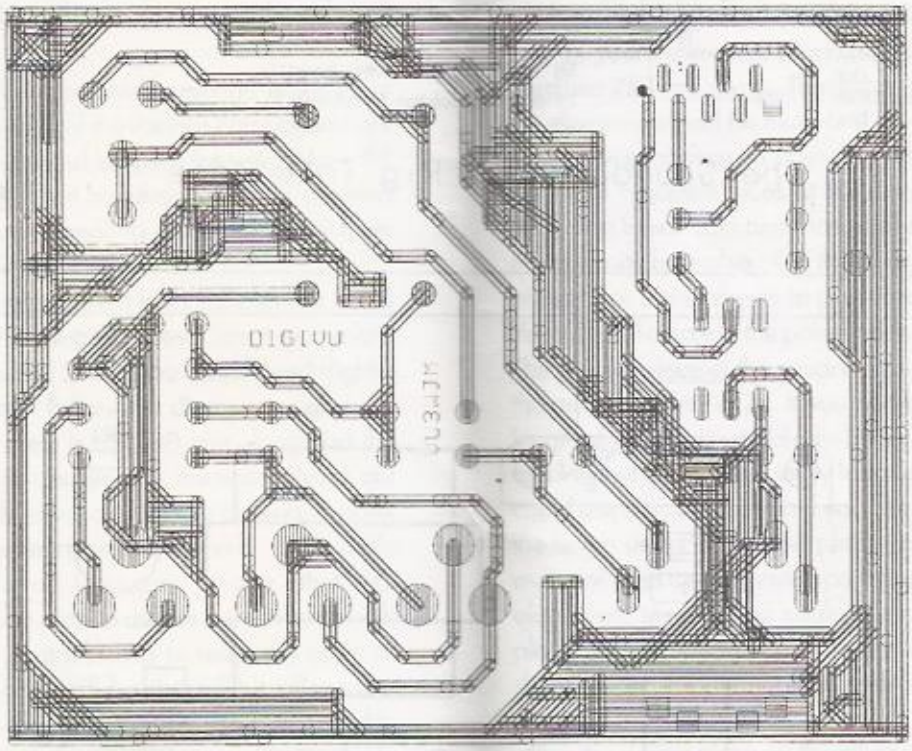
Enter the world of Digital Communications : Build your own PC interface

By Rahul Srivastava, VU3WJM

TNC and Modems ruled the world of digital communications until recently. With the advent of high speed computing and digital signal processing (DSP) all this has changed. If you own a home computer (PC) with a sound card, all you need to do is download software and obtain an interface between the PC and your radio.

The interface provides the audio and digital signal level translation between the computer and the radio. The lack of locally available interfaces had many hams import them for large sums of money. It occurred to me that I could build an interface easily.

Typically being lazy, I needed a push to get started. A swift kick in the rear would be a more appropriate term. This was provided by Miku, VU2WAP. He offered me his Rigblaster "Nomic" for reverse engineering Looking inside I found a 600 ohm 1:1 audio isolation transformer for PC to transceiver mic input and presets for level control. The transceiver to PC audio interface was achieved with a resistive network. An optocoupler was used for PTT keying.



On the outside there was an optional 8 pin mic connector or RJ45, Stereo earphone (EP) sockets for soundcard connections, a DB9 connector for RS232 PC COM port connection. Internal jumpers were provided to adapt to various brands.

Now to make the VU version..

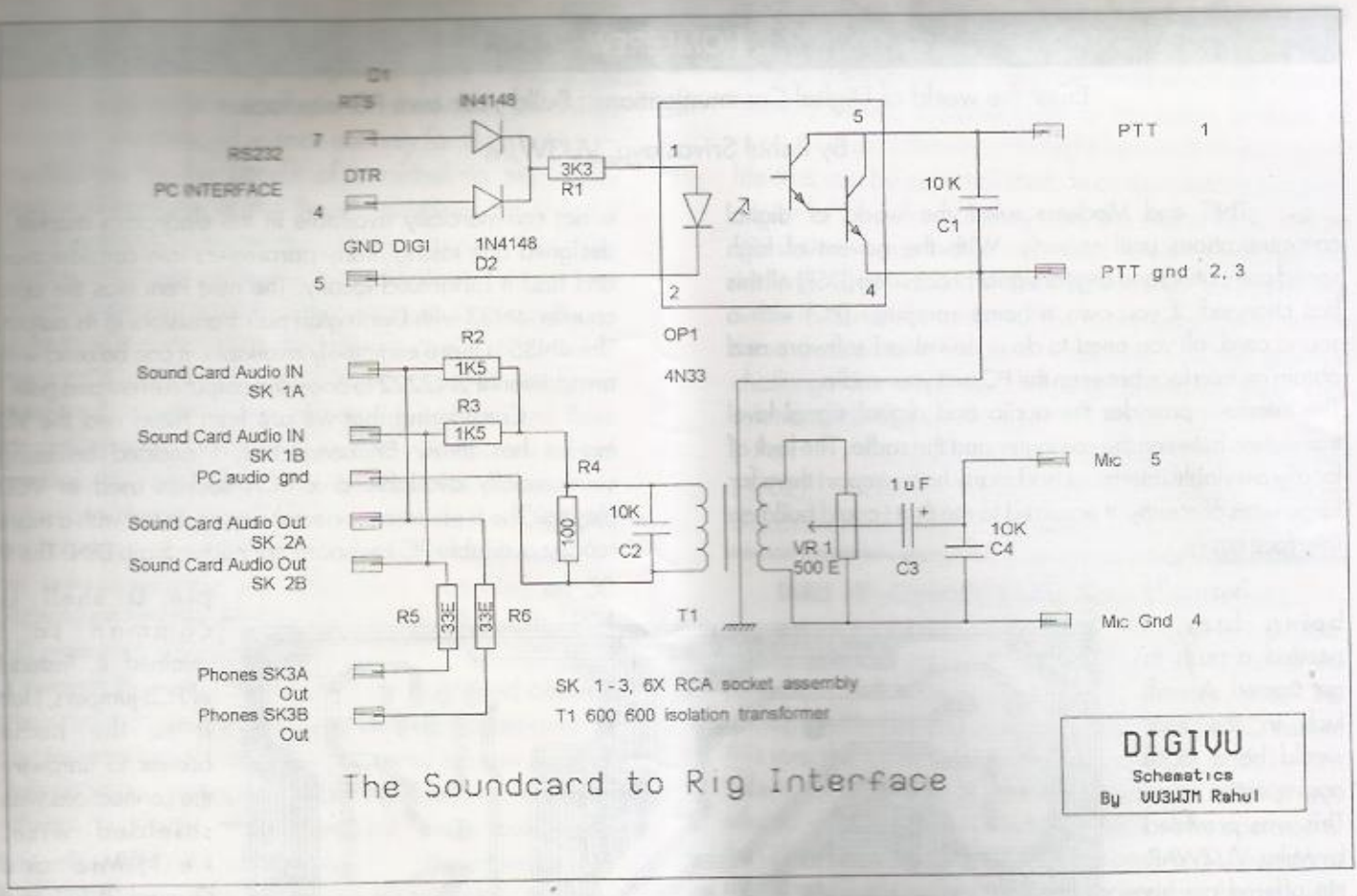
The isolation transformer was the most critical part of the equipment. It was the hot topic of discussion with my friends on 14.130Mhz including Zal VU2DK, VU2DAD Dev, VU2NTT Neeraj and VU2WAP Miku. This transformer is not commercially available in the electronics market. I designed one taking many parameters into consideration and had it fabricated locally. The next item was the opto coupler 4N33 with Darlington pair transistors in its output. The 4N35 is more commonly available, it can be used with an additional 2N2222 to boost the output current and gain.

Considering that we are ham fisted and the VU market has flimsy EP connectors, I decided on using commercially available 6 x RCA sockets used in VCD players. The 8 pin Mic connector was replaced with a more readily available PC keyboard connector 5 pin DIN. The 9 pin D shell is common so I retained it. Instead of PCB jumpers, I left it to the home brewer to hardwire the connections with shielded wire. i.e, 1). Mic and Ground 2) PTT and Ground ,with shield going to respective grounds, as I felt this method is simpler and every home brewer will at least have this much information about his rig.

Finally the PCB..

The drawing has all the details of PCB, schematics and component layout. Assemble it according to details provided. Take care with polarized components like diodes optocoupler etc. Mount all sockets on the PCB. Finally don't forget to put the PCB in a good looking box if you want everyone to appreciate your handwork.

After checking all your work carefully, hook up the interface to your rig and PC. Install the software, switch on and tune, adjust the sound levels on PC as well as the interface for clean signal. Monitor various QSO's till you get the hang of things. Join the fun, its time to conquer new digital domains for The world is not enough!


C1
RTS
IN4148
RS232
PC INTERFACE
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GND DIGI
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1N4148
D2
3K3
R1
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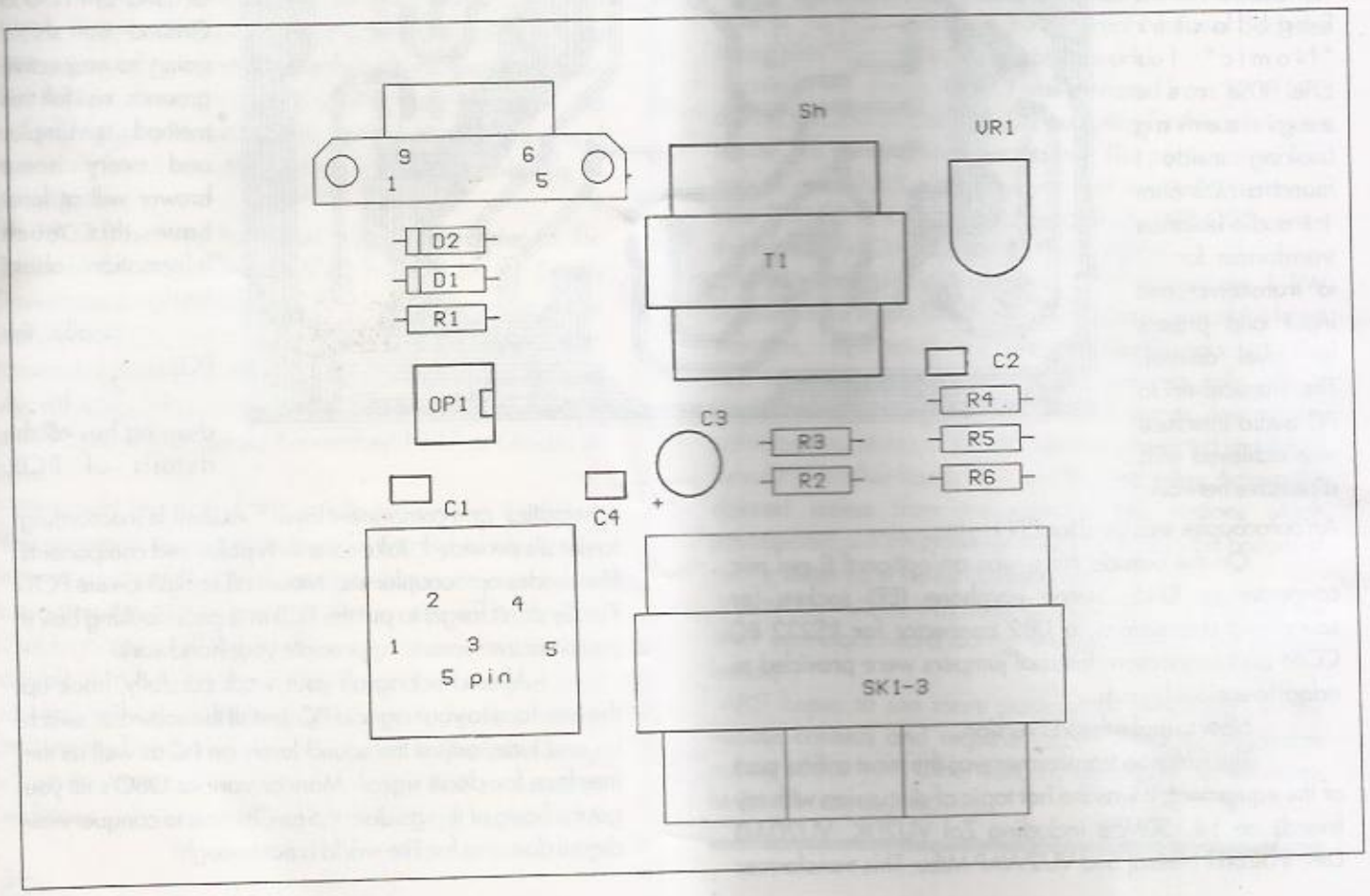
2
OP1
4N33
5
4
PTT 1
10 K
C1
PTT gnd 2, 3
R2
1K5
R3
1K5
Sound Card Audio IN
SK 1A
Sound Card Audio IN
SK 1B
PC audio gnd
Sound Card Audio Out
SK 2A
Sound Card Audio Out
SK 2B
R4
100
10K
C2
R5
33E
R6
33E
T1
1 uF
VR 1
500 E
C3
10K
C4
Mic 5
Mic Gnd 4
Phones SK3A
Out
Phones SK3B
Out
SK 1-3, 6X RCA socket assembly
T1 600 600 isolation transformer
DIGIVU
Schematics
By VU3WJM Rahul
The Soundcard to Rig Interface


9
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D1
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3
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T1
VR1
C2
R4
R5
R6
C3
R3
R2
C4
SK1-3

A lightweight, handheld 2 metre beam for fox hunting

by George Philips, VU2GT.

With fox hunting becoming increasingly popular, here is a light and easy to carry 2 element beam for 2 metres which you can build.

The 2 element beam described below is known as the HB9CV beam and is named after the Swiss amateur R. Baumgartner, who is responsible for its design. It consists of 2 elements spaced at 1/8 of a wavelength at the operating frequency. The element at the rear is called the Reflector and is half a wavelength long and the element in front is called the Director and is 8% shorter than the Reflector. Both elements are fed and the elements are connected to each other by a phasing harness with the rf power being fed at the director end. This design has good forward gain and an excellent front to back ratio which is a desirable attribute of an antenna used for radio direction finding.

Construction details : The assembled antenna is shown in Fig.1 and detailed drawings of the various components are given in Fig 2. In the interest of keeping the weight low, the sections chosen are small but however, since the antenna would be subject to rough handling in the field, they have been kept sufficiently thick.

The elements : The elements are cut from 9.5 mm dia. x 1.5 mm thick (3/8" dia x 16 gauge) pipes. Since aluminium sections come in lengths of 12 feet, you would need slightly more than half a length. Follow the dimensions given in Fig. 2a and b. The director is cut 948 mm long and the reflector, 1030 mm. File and de-burr the ends. Mark out the exact centre of both pipes and before drilling, a point 200 mm away from the centre on any one side. Drill a hole of 3.2 mm dia. to take an M3 screw or any other size suitable for the screw you plan to use, in the centre of both pipes. Always use a centre punch to mark the point at which you need to drill or otherwise, the drill bit will wander and hole may not be in the right position. You now need to drill the hole in which the phasing harness is inserted into the element. This hole has to be at right angles to the hole in the centre and the size of the hole would be determined by the material you use for the phasing harness. In the prototype, the phasing harness was fashioned out of a brass rod, 2.5 mm in diameter. To ensure that the hole for the phasing harness is at right angles to the hole at the centre, insert a length of rod through the hole drilled in the centre. In the absence of a rod of the right size, the drill bit used for drilling the hole will suffice. Position the pipe so that the rod or drill bit inserted in the hole in the centre is horizontal and mark a point at the required position with a centre punch and drill the hole keeping your drill bit vertical if you are using a hand drilling machine. De-burr both holes on the elements and they are ready for assembly.

The boom and handle : The section chosen for the boom is a 15mm x 15mm x 2mm thick square aluminium tube. A length 2 feet long would be sufficient for both the boom and the handle. From one end of the tube, mark out a length 380mm long. Using a tri-square, mark a line on all four faces of the tube and cut along the line that has been marked on the tube, with a hack saw. File the edges of both the lengths and remove all burrs. Keep the shorter length aside. It will be used to make the handle. Take the longer length which will be used as the boom and mark it for drilling. Follow the dimensions shown in Fig 2c. From one end of the pipe, mark a line on all four faces, 10mm away. Using this line as your reference, mark another line 147mm and a third line 257 mm away. The first and third points are where the elements would be fixed and the point in between is for the phasing harness to pass through. Punch marks at the centre of adjacent faces at the points where the elements would be fixed. On one face, drill a 3.2 mm hole through the opposite face also. On the other face, drill a hole large enough for the elements to pass through without any play. You will drill a hole at the point in between, later.

The smaller piece of the square pipe is used as a handle for the antenna. See Fig 2d. If you had bought yourself a 2 foot length of pipe, you would now be left with a piece about 230 mm long which is adequately long for use as a handle. You could use a smaller length if you like. The handle is fixed to the boom using two gusset plates as shown in Fig 2e. The material used for the prototype was cut from a 1.6 mm thick aluminium sheet. You could use any material like steel, plastic or even plywood whatever is handy. Mark out the sheet as per the dimensions given in the figure and cut 2 pieces. Drill any one hole on one of the two pieces and then place the drilled piece on the other. Align the pieces so that the one on the top sits exactly over the one at the bottom. Mark the drilled hole on the other piece and drill a hole in the second one. Now screw the pieces together, ensure that they are aligned and drill all the other holes through both the pieces. This exercise is done to ensure that the holes on both pieces match each other. Now, place one of the gusset plates at the rear end of the boom with one of the square edges flush with the edge of the tube look at Fig 1 and mark the three holes required for mounting the gusset plate. Do the same operation on the adjacent face. Do the same operation on the adjacent face. Now drill the holes through

the opposite faces also, so that all four faces have the mounting holes drilled. This is done in order that the handle may be fixed to polarize the antenna either horizontally or vertically. Screw on the gusset plates to any pair of sides of the boom. The plates would be parallel to each other. Insert the handle in the space between the plates, ensure that the outer edge of the handle is flush with the outer edge of the plates and also at right angles to the boom and mark the holes for attaching the handle to the plates. Remove and drill the holes.

The phasing harness : You can use any stiff wire with a diameter of around 1.6mm or more for the phasing harness. Cut a piece around 720 mm and straighten it, if the wire is crooked or bent. The phasing harness has to be insulated from the boom at the point where it passes through it. The prototype used a bush turned out from a polypropylene rod but that is difficult without workshop facilities. An easy solution is to use an empty ballpoint refill. Cut a piece which is equivalent to the width of the boom plus 8 mm. You may have to increase the inner diameter of the plastic tube in case you cannot slip it over the wire. Use a drill of the appropriate size and drill through. The size of the hole on the boom should be the same size as the outer diameter of the plastic tube. Drill the hole on the boom at the point that you had marked earlier. You need to drill on the face that has the holes for the elements to pass through. Push the plastic tube through this hole and position it so that the tube extends equally by 4 mm on both sides. Fix it in place using an adhesive like araldite or a quick acting anaerobic adhesive like super glue.

Assembly : Now that you have all the components ready, you can start assembling the beam. Pass the director through the boom at the front of the beam and screw it in place. Screw the reflector in place taking care to see that the hole for connection of the phasing harness is on the opposite side of the boom as compared to the director. Now comes the tricky part. Pass the wire that you are using for the phasing harness through the plastic pipe that has been stuck to the boom. Measure out 365 mm on the side which has the hole for the phasing harness on the director and bend the wire at right angles at the end of plastic pipe fixed in the boom, towards the director keeping the wire in the plane of the antenna. Similarly, bend the wire on the other side towards the reflector. After bending, the wire should run parallel to the boom on both sides and the space between the wire and boom should be 4 mm on each side. Keep the antenna on a flat surface. Take a straight edge - a ruler for example, hold it vertically against the inner face of the director and make a mark on the phasing harness. Now, mark a point 4mm plus the thickness of the wire away from the previous mark, towards the centre of the antenna. Using a pair of pliers, bend the wire 90 degrees away from the boom, towards the director end. Using the straight edge, mark a point on the wire that coincides with the inner edge of the hole you have drilled to take the phasing harness. Bend the wire at 90 degrees in the direction of the hole. Now slip the phasing harness through the hole in the element. Repeat this operation on the other side. The phasing harness should run parallel to the boom and the elements and should lie at the centre of both. To keep the harness in place, you could find some insulating material about 4 mm thick and glue it in place on either end of the boom where it takes a turn to run parallel to the boom. The harness could then be glued to this piece. To keep the harness in place on the elements, ensure that the harness is parallel to the element and then wrap a piece of wire round the harness on the inside face of the element and solder the ring in place. Wrap another ring on the outer face and solder in place. Cut any excess wire of the harness that extends out of the element. To ensure that the connection is good and that it does not move while the antenna is in use, you may put some M-Seal at the junction to make it rigid.

The antenna is now ready for testing. The feed point is on the director side where the harness takes a turn along the element. See Fig 1. Since the antenna is intended for use for receiving, RG 174 cable was used for feeding the antenna since it is very light and flexible. A certain amount of capacitance is required to cancel out the reactance at the feed point and that is achieved by using a small length of the same cable. Cut a length of RG 174 cable, mm long. Solder the centre conductor to the feed point. Take another length sufficiently long for connecting to your rig. Fix a suitable connector at one end and at the other end, solder the centre conductor to the shield of the cable which is serving as a capacitor. Solder a small lug to the shield and connect it to the boom using the element fixing screw.

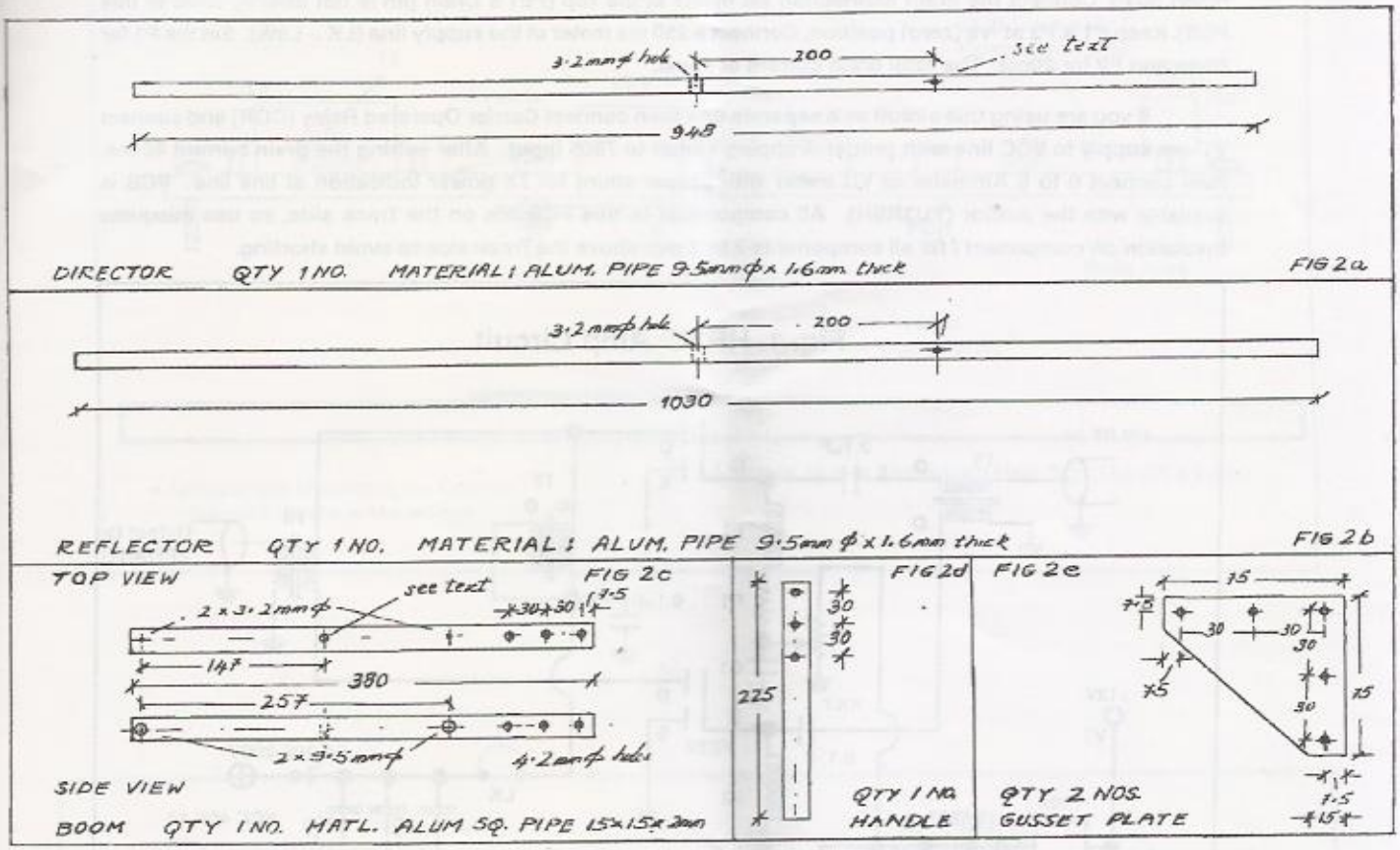
The antenna is now ready for testing. Connect up your rig through an SWR meter and power up the antenna. It should be resonant around 145 MHz. If it is lower, you may trim the antenna by reducing the length of the elements equally on both sides. Remember however, that for every 10mm that you may cut from the reflector, only 8 mm should be cut on the director. With dimensions given, the antenna will not resonate higher than 145 Mhz.

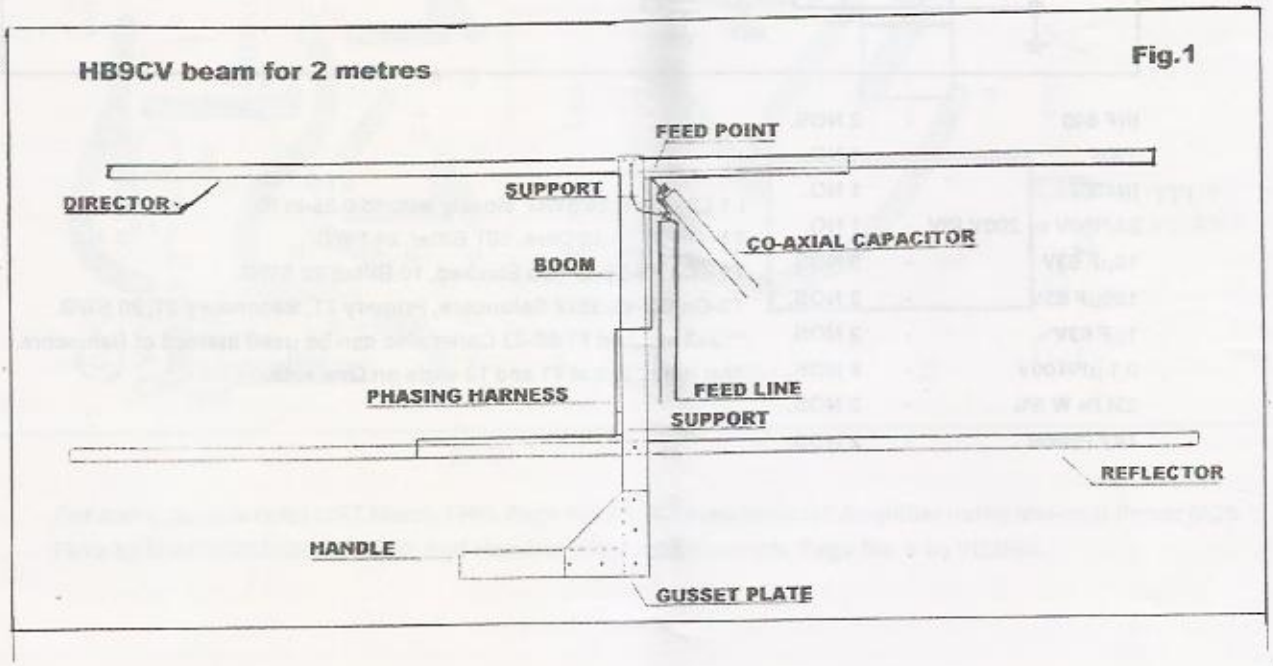
The instructions given have been rather detailed but that is for the benefit of those who have had very little experience of home-brewing and metal working.

Quite a few of these antenna have been used recently for the fox hunt organized by the Mumbai Amateur Radio Society and have performed extremely well. Weighing only 400 grams, they came out unscathed despite all the rough handling in the field. Following a tip given by Rahul, VU3WJM, cable TV attenuators were used with the antenna and they worked very well. Give building this antenna a try - it will be a rewarding exercise in more ways than one !!

Material List

Aluminium square pipe 15 mm X 15 mm X 2 mm thick for boom and handle.
Aluminium pipe 9.5 mm dia X 1.6 mm thick for elements.
Aluminium sheet 1.6 mm thick for usset plates
Copper or brass wire 2.5 mm dia for phasing harness
RG 174 or similar co-axial cable for co-axial capacitor and feed line
Miscellaneous items like screws and nuts for fastening, plastic pieces for support etc.





RAGCHEWING WITH VU2RIG - RAJEN KAVADIA

By Ratnesh Javeri VU2 OUT

When I hear a booming and deep voice on HF or VHF, I am pretty much sure it is Rajan as he is firstly a very close friend and secondly he has a terrific location and set up and hence puts out a booming signal! In one of my various qso's with him, he told me about his ongoing tryst with Ham Radio. In his own words:

" Since childhood, I was interested in radio. As young child I would always wonder how such beautiful voices from far off lands could come out of my radio. My fascination with radio also helped me to cultivate an interest in geography & current affairs.

Around the end of the seventies, I read an article in the Newspaper on ham radio that came in the form of an interview of Mr. Saad Ali VU2 ST. My dream came true when in 1988 I read a press note in the media from JNA Wireless Assoc. inviting people to join the classes for becoming HAM. From that time I've never looked back.

HAM Radio, from a dream has transcended into a passion for me know. After being a ham for the last one and a half decade, my adrenalin still pumps in when I start my radio and give a CQ call. Apart from the excitement of a chance contact, what also drew me to this world-class hobby is the real opportunity for a HAM to do public service for the society in times of a calamity, which is a kind of repayment to the society for the privileges provided to him / her. I hold a view that the normal perception about a hobby is that it gives you a prospect to develop your self but I wonder how many hobbies also allow you to do public service!

I recall with humility the chance I got to be a part of the team for establishing communication network during the Latur earthquake in Maharashtra in October 1993. Further, I also conducted the operations as Bombay control room during the Gujarat earthquake of January 2001 while the team from M.A.R.S. was in Kutch.

In a strange twist in a tale, I and a few Hams from Mumbai became a kind of official communication service providers to a team of Indian Army sailors who lead a sailing expedition from Bombay Singapore Bombay in the period of Nov. 1999 March 2000. The twist was that we were only supposed to be a back up / support communications setup. But either due to the Army's inability to communicate with its team or otherwise, we as HAMS became the primary contact team and we remained in contact with the sailors for the entire period of 4 months.

God has been great and has provided me with an opportunity to possess world-class equipments to enjoy this hobby. To have a decent location for this hobby in the concrete jungle of Bombay is fortunate. I must say I'm lucky to have a good location with a good height at my Qth. Hence I normally get good signal report from both locals & dx stations. I feel that to become a good HAM radio operator, one must, first be a good human being. Your personality, over the time period, automatically comes out and is relayed on the airwaves. As aforesaid, this hobby fires a passion in me, and I feel proud for my fraternity. I always tell new Hams, that HAM stands for Help All Mankind. I am totally in unison with my good friend John, W2NQ / W7 when he lovingly pointed out to me that my call was not VU2 Romeo India Golf but rather VU2 Radio Is Great"

RIG'S Shack: Yaesu FT 990 Kenwood, TM 733A base station, 9 elements, 30ft. boom yagi from Force 12 which covers from 10m to 40m. Cushcraft dual-band yagi with 5 elements for each band, Diamond X 510 dual-band vertical, Heil - HM 10 Professional grade Apex 430 microphone, Classic microphones, W2IHY 8 band graphic equalizer.

GOOD NEWS !!!

In an unprecedented decision, the International Telecommunication Union (ITU) has agreed to move international broadcasters off of 7100-7200 kHz by 2009, after which the band segment will be available to amateurs worldwide This was among several actions related to amateur radio taken by the World Radiocommunication Conference (WRC-03) that ended last Friday in Geneva, Switzerland, and reported by the International Amateur Radio Union (IARU). While the decision does not provide the worldwide 300-kHz allocation that hams had sought, the IARU says it is the first time in history that the ITU has moved an HF broadcasting allocation to make room for another service. The action will double the size of the 40-meter ham band in much of the world and will reduce by half the portion of the band in which amateurs in the Americas must compete with broadcasters for nighttime communications on 7 MHz.

Between now and March 29, 2009, according to the IARU, broadcasters in ITU Region 1 (Europe & Africa) and Region 3 (Asia & Oceania) will shift upward into the 7200-7450 kHz band segment, while broadcasters in Region 2 (North & South America) will use 7300-7400 kHz. As of March 29, 2009 - less than six years from now - 7100-7200 kHz will be allocated exclusively to amateur radio in all three ITU regions. The only exceptions will be some countries in Region 3, mostly in the Middle East, that have already authorized fixed and mobile services on 7100-7200. These allocations will remain primary in those countries. Amateurs in Region 2 (the Americas) will retain their exclusive 300-kHz allocation at 7000-7300 kHz. WRC-03 also made significant decisions regarding other matters relating to amateur radio. We will provide details in further news items. The complete IARU news release may be found on the World Wide Web at <http://www.iaru.org/rel030703.html>. The IARU explanation of the new rules, titled "New Regulations for the Amateur Services," by Michael Owen, VK3KI, is also available on the IARU website at <http://www.iaru.org/rel030703att3.html>.

The Amateur Radio Society of India played a very important role in this decision.

LIST OF MEMBERS WHO ARE IN ARREARS OF SUBSCRIPTION FOR 2001-02 TO 2003-04

The list of members who are in arrears of subscription for more than two years was published in the last issue of HRN. Some members have since paid their subscription. Those who have not yet paid their arrears of subscription will now be transferred from current list of members to the defaulting list, in accordance with Article 19(e) of the Constitution of the Society. Such members will be receiving their last copy of HRN, being issued in Aug. 2003, unless they pay their subscription by the cut-off date (i.e. 05.09.03). The amount due from them for the years 2001-04, with late fee is Rs.480. Payment by this date will entitle them to stand for membership of the Governing Council as well as casr their vote during the election. Errors, if any, in the compilation may kindly be brought to the notice of the President or Treasurer.

List of Corporate Members.

Call Sign	Mem No	Call Sign	Mem No	Call Sign	Mem No	Call Sign	Mem No	Call Sign	Mem No
2AAP	0564	2ABK	1646	3ADG	1641	ADO	1065	2ADW	1024
2AIE	1568	2AKB	0046	2APS	0814	2APZ	1088	2ARG	1419
2ASH	1121	2AUO	1266	2ATB	1517	3ATK	1761	2BEJ	0316
3BEO	1760	3BHI	1418	3BRC	1485	2BRK	1350	3BVM	1452
3BWA	1718	2CJV	1757	2CKH	1655	2CLN	1661	2CSB	1782
2DEX	1381	2DFM	1639	2DG	0298	2DKK	1753	2DMS	1773
2DNL	0086	2DOO	1777	2DRD	1772	2DSD	0922	2ELR	1758
3FAM	1426	3FDH	1656	2FPK	1453	3GAO	1245	2GGG	1439
3GKN	0930	2GLJ	1410	3GOG	1339	2GWL	1042	2HIY	1783
3HJN	1781	3HST	1723	2IVG	1491	2IXY	1695	2JAC	1779
2JAU	1194	3JBR	1769	2JF	1476	2JHN	1562	2JJJ	1751
2JK	0383	2JKK	0186	2JME	1671	3JOH	1776	3KAI	1744
2KDL	1791	2KMG	1610	3KNT	1784	3KNY	1255	2KQY	1780
2LAU	1768	2LDF	1792	2LDH	1748	2LK	0312	2LKJ	1515
2MAL	0633	2MB	1217	2MCP	1714	2MDA	1771	2MML	1593
2MRP	1756	2MUL	1682	3MWH	1740	2NAS	1340	3NGF	1787
2NGS	1660	3NLO	1767	3NSF	1741	2NTA	1457	3NWZ	1095
3OLG	1713	2OPX	1254	3PAN	1747	3PBM	1725	3PCE	1770
2PEP	1493	2PKV	1356	2PTN	1701	2PVB	1678	2RCH	0976
2RIO	0970	2RNW	1338	2SHL	1119	2SHT	1563	2SJ	0740
3SND	1293	2SNW	1053	3SRE	1731	3SUA	1679	2TBM	1759
2TE	0501	2TRF	1298	2TUN	0571	2UKR	1650	2VA	1359
3VDA	1597	3VDB	1598	2VQL	1120	3VUK	1689	2WPR	0792
2YKN	1362	2ZAZ	1755						

LIST OF ASOCIATE MEMBERS

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A-0583	A-0592	A-0606	A-0612	A-0630	A-0633
A-0634	A-0635*	A-0637	A-0638*	A-0639	A-0640*
A-0641	A-0642*	A-0643	A-0645	A-0646*	A-0647*
A-0648	A-0652	A-0653	A-0655	A-0657	A-0658

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