"AMATEUR RADIO- A NATIONAL RESOURCE"

ONE WORLD

Amateur Radio

ONE LANGUAGE
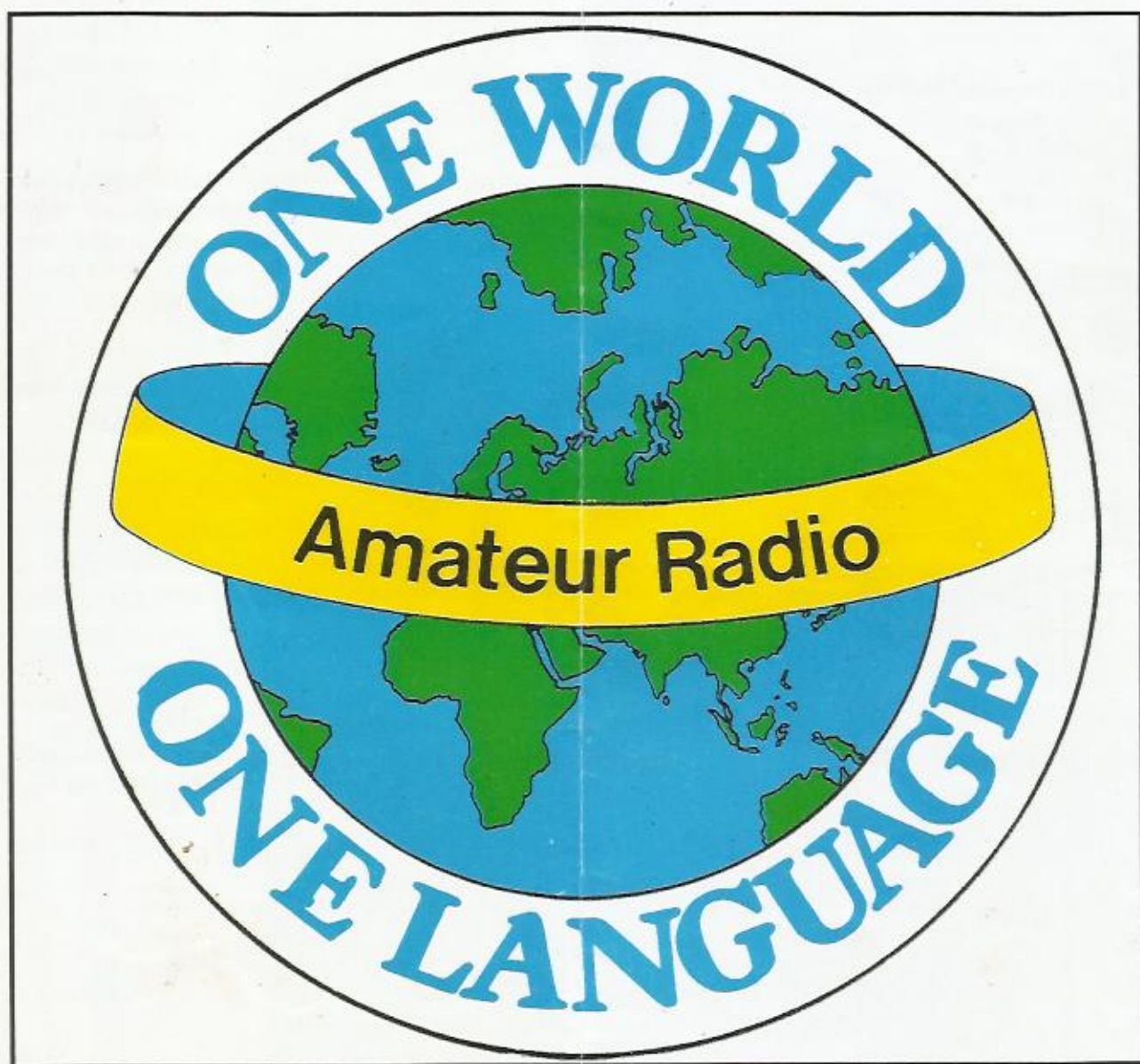
UNITY IS THE MOTTO

TO RADIO **VU2BK**.

Confirming our QSO on **14** Mc at **1525** hrs (I.S.T.)

Date **10·7·49** Ur Sigs RST **569 (QRM)** Type **C.W.**

Tx **89 C.O. 807 find** Rx **BC348** Ant **½ Dipole C. fed**.

VU7AH

Q TH: Post Box 10, TUMKUR. INDIA

OPR : K.S.V. RAJAN

PSE QSL VIA ARCI

OR

DIRECT   73

Tnx fer the QSO. Gld to nos g am ur 1st stn. Cuagn, Sn Kabraji **Rajan.**

Amateur Radio Club India

P.O. MHOW (*Central India*)

(or P.O. Box 6666, Bombay 20)

To Radio **VU2BK**   Confirming our Fone/~~CW~~ QSO

of **31-12-50**   QRG **14** Mc/s. IST **1025** hrs.

RST **5-8**   Input **30 watts**   Ant **fullwave Dipole**

AC4NC

LHASA (TIBET)

Remarks

Vy psed to work u Kabr. thru Tk3 QSO

ONR. OP.

N. CHAKRAVARTY.

P. O. GYANTSE,
LHASA,
TIBET.

Hpe CUAGN Vy Sn.

Pse QSL direct or via

Amateur Radio Club, India

P. O. Mhow (*Central India*).

(or P. O. Box 6666, Bombay 20)

A	
R C	
I	

73's **Chak**

QRA : F. CLOUET   22, Rue Frenton – CONSTANTINE

ALGÉRIE

FA8DA

W. A. C.

RADIO **VU2BK** QSO **29 oct 49** à **2015** GMT sur **14** MC

RST **559 fone**   Modulation

EMETTEUR - E.C.O - PD - PA - **807** — **50** Watts

Modulation   Antenne *Wire long doublet*

RECEPTEUR - National S.W.3 **BC 348 g**

Remarques *Mni tnx fer the qso*

~~QSL~~ / TNX QSL Via REF or direct

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1. VU7AH- in the old days, Indian states had their own prefixes. This one is from Mysore state & later call changed to VU2RA, a well known & respected ham. K.S.V. Rajan held this call till he sadly became a silent key, some 32 years ago.

2. AC4NC- There has never been any authentic or valid ham operation from there ever since.

3. FA8DA- Is now known as Algeria and the current prefix is 7X.

Note: The QSL Post Box in Mumbai. This is the forerunner of the ARSI which shifted from Mhow to Calcutta and to Delhi.

CQ CQ   CALLING ALL STATIONS

This issue of HAM RADIO NEWS comes to you just before the Annual General Meeting of the Society, where elections for the Governing Council are scheduled. We are sure, members must have filed their nomination papers for the various posts.

The Society has faced two basic problems during elections. One, there have been insufficient nominations to cover all the vacancies. Two, some of those who were elected, could not find the time later on to render any assistance or service to the Society. The minimum that is expected of them is to (i) persuade non-members to join the Society, the only way we can aspire to be heard in the corridors of power and (ii) participate in the ON-THE-AIR meetings, which are held only once in three months.

We can only hope that this time we will be able to build a better team. Apart from those who are in the Governing Council, your Society expects that all members- Corporate, Associate and others- will cooperate in enlarging the membership of the Society.

Of late, there have been some internal problems in the Wireless Planning & Co-ordination Wing, resulting in abnormal delays in certain cases. We are trying to sort out these with co-operation from officers in the W.P.C. Wing. Unusual delays have also been noticed in receiving security clearances from certain States. There is not much that we- or for that matter, even W.P.C. Wing- can do about it. The country is passing through a difficult situation, politically and otherwise and perhaps such delays are a result of this fluid situation. This calls for a little patience on all sides.

Hoping to see most of you in the MYSORE HAMFEST.

Sahruddin - VU2SDN
President.

IMPORTANT

Your fees for 1999-2000 is due. Payment is to be made before 30th June after which a penalty of Rs.10/- is imposed. All members paying their fees for this year kindly include the penalty in the D.D.

CONTENTS

FINE COPY

FREQUENCY COUNTER

By Simone Benvenuti & English translation by Adriano De Minicis
The circuit introduced here is a digital frequency meter that uses a PIC family
microprocessor and few other components

Introduction : The guidelines followed during the design of the circuit have been directed to the realization of an economic, versatile and simple to use instrument. The economization has been pursued trying to limit as much as possible the number and the cost of external components. The versatility is given from the wide range of frequencies that can be measured; in fact, thanks to the use of counter TMR0 and to the frequency division operated by the inner prescaler, frequencies up to 50 Mhz can be measured. Finally, the ease of use derived from the most interesting characteristic of the instrument, the auto-range function, that allows fast reading of the measure without the need of range adjusting by the operator. Another feature of the instrument is that it automatically enters in stand-by mode (the PIC goes in sleep-mode and the displays are switched off) when there is no signal at the input for more than 10 second (this time can be easily changed by software) and it wakes-up, without the need of operator intervention, as soon as a signal is applied at the input.

As for the precision of the instrument, having opted for a display with three significant digits, an algorithm that approximates the displayed value with a precision of 0.5% has been adopted in the development of the program. If the frequency is lesser than 256 Hz the precision is reduced (frequency resolution is 2 Hz) and the display flashes to signal the operator that the error can be greater than expected.

The total error of the instrument depends also from the precision of the 4MHz clock frequency; it is therefore necessary that the external quartz has a very high Q.

Since this is a didactic project, we have not added additional features like storing the measure value or out of range checking. Moreover, the circuit is lacking an input stage that can be realized in many ways (FET preamplifier, CMOS buffer, optoisolator, etc) according to the requirements of the user.

However, if the source to be measured has an amplitude between 3 and 6 Volt peak to peak and it can withstand the loading effect of the instrument, then the circuit can also be used without an additional input stage.

Circuit Description: The PIC16C34 is equipped with 13 I/O pins: 8 pins are accessible through the Port-B register and remaining 5 through the 5 lower bits of the Port-A register; the pins are labelled Rxn, where "x" is the port (either A or B) and "n" indicates the bit position inside the Port-x register. Inside of the PIC16C84, the RA4 may be connected to an asynchronous counter TMR0 that is able to count pulses that have a duration of at least 10 ns, and that are spaced by at least 10 ns.

The maximum measurable frequency is therefore 50 MHz (in the PIC16C54 the TMR0 counter input is accessible only from the pin 3, T0CKI).

The 7 most significant bits of the Port-B (RB7-RB1) drive the 7 segments of the four displays, while bit RB0 is used for the control of the signal input. The cathode of each display is connected to ground through a NPN BJT (Bipolar Junction Transistor) which must be able to handle the current of 7 segments. The bases the BJTs are driven through a 2.2 kohm resistor by the lower four bits of the Port-A (RA0-RA3).

The type of the BJTs is not critical, since they are used as digital switches; a high-gain transistor as the BC548 gives higher brightness of the segments. In case you want to use a common-anode display (instead of common-cathode) it is sufficient to use PNP transistors with the emitter connected to positive supply (instead of ground), and to drive their bases with inverted signals (can be modified in software).

The connection of the source to be measured through the 470 ohm resistor to the RA4 and RB0 pins allows the sampling of the signal on RA4 for a period of time established from the program, by simply placing in high impedance the RB0 pin (setting it as an input). To stop the sampling it is sufficient to set the RB0 pin as an output.

Other external components are the 10kOhm resistor between the input and ground (without it the RA4 input would "float" and it would be sensitive to noise), the 1800 Ohm resistor to light the decimal point of the first digit, one or two smoothing capacitors on the supply (100nF and 22uF are suitable values). The supply voltage must be between 3 and 6 Volt: this allows the device the use of two 1.5 V batteries.

Program Description:

1. General Notes: The PIC16C84 reserves 36 bytes of memory area for general purpose registers (GPR). In internal operations these are referred by a numerical address, but the programming language allows to associate (with the "equ" directive), a name to one numerical constant, so that the program listing is easier to read for a human if the registers are referenced by mnemonic names.

In the program FMETER.ASM we have defined some labels for the general registers, the most important of them are listed here:

Name	Address	Function
porta	0x05	I/O register A
portb	0x06	I/O register B
tmr	0x01	8 bits counter
fsr	0x04	indirect addressing register
unita	0x0C	display units
decimi	0x1D	display tenths
cents	0x1E	display cents
esp	0x1F	display exponent
H_byte	0x10	high_byte of the read number (N)
L_byte	0x11	low_byte of the read number (N)
cifra	0x13	arameter used by a subroutine
O	0x14	units
decimi	0x15	tens
H	0x16	hundreds
M	0x17	thousands
DM	0x18	tens of thousands
CM	0x19	hundreds of thousands

2. Program Operation: The instrument carries out a frequency measure by counting the number of rising edges of the input signal that arrive on the RA4 pin in the period in which the RB0 pin is placed in high impedance. The maximum measurable frequency is 50 MHz, therefore, having a 16 bit counter register (formed from the union of the counter TMR0 and the prescaler set on the division by 256) the sampling time suitable to measure the maximum frequency turns out to be 1 ms; infact, in 1 ms they would arrive no more than 50,000 pulses, a number represented with 16 bits.

If the sampling period were fixed to 1ms the minimal measurable frequency would be 1KHz, then the error done counting less than 100 pulses (100KHz) would become too high. In order to render versatality and precision the instrument a second sampling period has been introduced that consents to measure lower frequencies reducing the error. Several considerations have suggested to choose a period of 0.5 seconds. With this period the maximum measurable frequency is 131 KHz ($2*2^{16}$), so the sampling period of 1 ms can discard measurement below 128 KHz (that can be handled by the 0.5s period). Moreover, a time of 0.5 seconds allows to measure a minimal frequency of Hz, but wanting to limit the error to the same value done on the scale of 1 ms (0.5%), every measure under 128 pulses (that is 256 Hz) is made flashing, so that the operator perceives that the error could be greater than expected. Finally, 0.5 s corresponds exactly to the chosen interval between two measures and it makes easier the timing routines used by the program.

To extend the lower range, and realize an instrument that also reduces the error for low input frequencies, it is necessary to set up a different algorithm: if the frequency of the input signal is under a certain value, the program counts the number of clock cycles between two consecutive raising edges of the input signal, measuring therefore the period,and calculating the reciprocal one to obtain the frequency.

In order to drive the 4 displays without having to employ a PIC with at least 28 (7 segments x 4 digits) I/O pins dedicated only to the display, the technique of time division multiplexing (TDM) is employed, feeding each digit in sequence for a time of approximately 12.5 ms to each one.

To avoid flickering of the display, it is necessary that a new refresh cycles (which last: 12.5 x 4 = 50 ms) begins within few milliseconds from the end of the previous cycle. For this reason is unthinkable not to carry out the refresh cycle of the display during the measure of 0.5s, while it is possible to break the refresh in order to make the sampling of 1 ms.

These last and previous observations are easy deducible observing the flow chart. The first operation carried out is the initialization of the registers. In particular, to test the perfect functionality of the 4 displays, the registers that affect the display operation (unita, decimi, cents, esp) are loaded with value "8", so that the display is showing the number 8,88E8 in the following twenty calls of the "Refresh" procedure.

When this operation is finished, the program samples the input for a 1 ms setting up the RB0 pin as an input (this is done setting the bit 0 of the TrisB register, which, being mapped in Bank 1 needs for being addressed, the previous settings of the bit 5 of the Status register).

At the end of the sampling, the counted number of pulses is stored (with sixteen bits) in the "tmr" and prescaler registers. This last one is not accessible neither in writing nor in reading and therefore a trick is necessary to read the value stored in the prescaler. The "prescaler" procedure reads that value. Once saved, the content of "tmr" in the Hbyte register, the routine sends (through the control pin RB0) a series of pulses on RA4 until the value of "tmr" increments by one. At this point the number contained in the prescaler is calculated by the difference between 256 and the number of pulses sent through RB0 and the result is stored in the Lbyte register.

Afterwards the program checks the contents of Hbyte and Lbyte in order to decide if it's necessary to carry out a new sampling using the 0.5 sec interval or if it may proceed to the visualization.

In this last case the hundreds of thousands, tens of thousands etc, are cleared, while "esp" is set to 3, realizing therefore the multiplication by 1000. The procedure "calcolo" converts the 16 bit binary number (Hbyte/Lbyte) to base ten using six digits (first two blocks of the flow-chart of the procedure "calcolo"); it executes a possible approximation on the fourth significant digit (successive 4 blocks of the flow-chart) and then it adds to "esp" the opportune value (that is the number of divisions by ten necessary in order to have a single digit before the decimal point (last block). Finally a jump brings back to the Refresh procedure (loop 1), that reads the value to display from the registers "unita", "decimi", "cents" and "esp".

In case the content of Hbyte/Lbyte is less than 128, it must be carried out a 0.5 sec sampling; therefore the "tmr"register is cleared and the RB0 pin is placed in high impedance mode.

The time of 0.5 sec is counted by calling 20 times the Refresh procedure (with opportune adjustments).

At the end of the 0.5 sec sampling, the program repeats the extraction of prescaler value and the checking of Hbyte/Lbyte.

If the value is greater than 127, then it must be multiplied by two before calling the procedure "Calcolo", this operation is carried by shifting one position to the left the content of Hbyte/Lbyte, after having added the decimal digits of the number 65535 to the base ten registers if the most significant bit of "Hbyte" was one.

Also in this case the programs jumps to the label "loop5" and the visualization will happen in all probability after that the sampling of 1 ms will have failed the measure.

If instead the value is smaller than 128, then another test is made on the value contained in Hbyte/Lbyte: if its greater than zero, the program will pause for twenty calls of the delay procedure (approximately 0.25 seconds), creating therefore a flashing effect. If instead the value of Hbyte/Lbyte is equal to 0, the digits to be displayed are all set to zeros, and it is decremented by one the register "zeri", checking also if the decremented value has reached zero. If it reaches zero, the processor is put in sleep-mode, waiting for a raising edge at the signal input that awakes the processor. Otherwise ("zeri" not equal zero) the program jumps to the label "loop5" from which a new measure begins (1 ms period).

Probably the number 0,00E0 on the display will be visualized at the beginning of the new 0.5s sample cycle. It's easy to change the stand-by timeout: it is sufficient to modify the value loaded in the "Zeri" register at the beginning of the program and at the beginning of the procedure "Calcolo", moreover, it is possible to totally exclude this function, and to control the flow of the program from the watchdog timer, because the program is already predisposed with the opportune instructions to clear the watchdog.

3. Notes on the procedures: Other two interesting procedures, beyond the "Calcolo" of which already it has been spoken, are the delay routine ("ritardo") and the segments controlling routine ("segmenti"). The micro controller, being a device of RSIC type, has the following main characteristics.

The fetch phase of the successive instruction operates during the execution of the previous one, therefore the jump instructions have a double duration, because the already fetched instruction. Conditional jumps (BTFSS, BTFSC, DECFSZ and INCFSZ) have a duration of two cycles if the jump is actually executed, or a single cycle if there is no jump (the successive instructions are not discarded).

The instructions at dispostion of the programmer are relatively few (only 35 operations) but the good news is that they all have a fixed and equal duration (except for the jumps). The acquaintance of these two properties facilitates the calculation of the execution times of various program sections, whose precison is generally very important for a software that controls an instrument.

In our case the delay routine, together with adjustments in other parts of the program, has allowed us to obtain in a delay of exactly 0.5 seconds in the sampling of low frequencies (0.5 seconds corresponds to 500,000 instruction cycles).

The procedure "segmenti" uses a trick to pick up a number in a table, using the instruction RETLW X (return from procedure with value X in W).

If returns in W the value stored in the position of the table indexed by the register "onfra". This can be obtained by adding to the PC (program counter register) the number of the chosen position (index) and making therefore a jump of variable length.

4. Conclusions

The program has been assembled and simulated using appropriate software (MPASM.EXE and MPSIM.EXE), and the instrument has been built in more than a copy with great satisfaction for the perfect result of the design. The only criticism that has been moved to it regards the falling of the display brightness at regular intervals (but this is nearly imperceptible).

This defect would probably disappear using a faster microporcessor, like the PIC16C54 clocked at 20MHz, that it would spend very little time to carry out the many calculations, limiting therefore to little more than 1 ms the time in which the Refresh is not executed. In order to use a clock frequency different from 4 MHz it is necessary to modify the delay routines recalculating the delays for the new clock frequency.

The device has been designed and realized within the exam of "Processing systems" in the Electronics Engineering bachelor course held by the Professor Luigi Rizzo, who has allowed us to make public our work, inserting it in the list of PIC Projects accessible on the internet at this web page: http://www.ict.unipi.it/~luigi/pic.html from which it is also possible to download the program listing.

(Courtesy Charudatt Uplap VU2UPX)

AWARDS The Korean Amateur Radio League's (KARL) DMZ
(Demilitarized) Zone Award

The KARL introduces to you a new "DMZ" Award.

Condition:

A. Contacts must be made from the country stretched at the 38 degrees north latitude.

B. Contacts must include "HL"

C. Example of the 38 degrees North latitude 9A, BY, CT, EA, EP, EY, EZ, HL, I, JA, P5, SV, TA, UJ, W, YA, YI

Class:

A: 15 Entity B: 10 Entity C: 5 Entity

Application Fee

10 IRC's or USD 5

GCR Required

Amateur Radio Society of applicant's country

Mail

Korean Amateur Radio League,

C.P.O. Box 162, Seoul 100-601, Korea

ETC

A. All contacts must be made after 3rd February, 1959.

B. This award will be issued till the reunification of South and North Korea.

PERSONALITY **T.K.Viswanathan**

SWL VU-0020- A very ardent SWL for many years and has won many of the following awards and citations over the years. Unfortunately he could not appear for his Amateur licence due to the frequent transfers while serving in the Air Force. Hopefully now since his retirement he can still acquire his ticket.

1	YO-DX-C	Received as S1.No.117 issued on 1-3-1967 by Romanian Radio Amateurs Federation.
2	5th VU2/4s7 Contest	A certificate was awarded for outstanding performance for scoring 3600 points.
3	YO-AM	S1. No.223 issued on 15-2-69 from Romania
4	YO-AD (Class III)	S1. No.359 issued on 15-2-69 from Romania
5	R-100-O	S1. No.67 issued on 13-11-69 for receiving more than 100 oblasts (regions) in Russia
6	CCCP-50	S1. No.583 issued on 25-2-70 from Russia
7	HA-VK-CA (Heard All VK call Areas)	S1. No.6 issued on 15-6-70 by the Wireless Institute of Australia
8	JUBILEE Award	S1. No.88 issued on 6-7-70 from Russia
9	VPX (Verified Prefixes)	S1. No.79 issued on 19-8-1974 by the editors of CQ, The Radio Amateurs Journal for receiving 300 different prefixes
10	BERU 1974 (Receiving Section)	1st Asia issued on 25-11-74 by RSGB
11	CPR (CPR Propagation Research Contest)	Winner in Zone 41 for all bands CW Section 1974. Issued by the International Amateurs Radio Club
12	AJD (All Japan Districts)	S1. No. 1974 issued on 2-10-70 from Japan.

RADIO ACTIVITY   CONTEST

The Finnish Amateur Radio League invites you to **The Scandinavian Activity Contest 1999** organised by SRAL, Finland. SAC 1999 will be as follows: **CW** September 18th 1200 UTC. September 19th 1200 UTC **SSB** September 25th 1200 UTC September 26th 1200 UTC

SAC 1999 Logs: Post Address: SRAL Contest Manager Hannu Saila OH3WW, Muurainkorventie 17, 33470 YLOJARVI, FINLAND or e-mail (if possible ASCII file) to sac99@sral.fi

Sections: a) Single Op./Single TX/Multi Band-High power (as before), Single Op./Single TX/Multi Band-Low power (output 100W or less), Single Op./Single TX/Multi Band-QRP (output 5W or less). Single operator means that one person performs all operating, logging and spotting functions without any assistance from other person(s). The use of DX-Cluster is not allowed.

b) Multi Op./Single TX/Multi Band: Only one signal may be transmitted on any band at any time (running station). When operation has started on one band, the station must remain on that band for at least 10 minutes. The 10 minutes-period starts with the first QSO worked on that band.

Bands: 3.5-7-14-21-28 MHz bands may be used according to IARU HF.

Band Plans. (NB: 3560-3600, 3650-3700, 14060-14125 and 14300-14350 kHz to be kept free from contest traffic).

Scoring: NON-EUROPEAN stations credit their logs with one (1) point for every Scandinavian QSO on 14, 21 and 28 MHz and with three (3) points for complete QSO on 3.5 and 7 MHz bands.

Multipliers: Worked call-number areas (0-9) in each Scandinavian country are valid as multiplier on each band (e.g. S13, SK3, SL3, SM3, 7S3 and 8S3 are all in ONE district and counts ONE (1) multiplier on each band). Portable stations without district number counts for the 10th area (e.g. G3XYZ/LA counts for LA0). OH0 (AI and Is.) and OJ0 (Market Reef) are separate call areas. SJ9 counts for the 9th district in Sweden.

Logs: Signed original logs (or copies of original logs) must be submitted separately for CW and SSB.

Logs to be filled in the following order:

Date and time UTC, Band, Station worked, Exchange sent, Exchange received, Multipliers (e.g. OZ4, SM3, SM4, OH2 etc) and points.

SWL-log must contain:

Date and time UTC, Band, Scandinavian station heard, Message sent by Scandinavian station, SWL's own report, Station worked by Scandinavian station, Multipliers and Points.

Multiplier Sheet: All entrants must submit a multiplier check list for each band with more than 200 QSO's.

Closing date for logs: Logs and accompanying control-sheets, addressed to the organizing Society, shall be mailed not later than October 31st 1999.

BRAIN WAVE
"Pixie 2" QSK Mini Transceiver from the World Wide Web

The smallest QRP transceiver for 80 meters, called "Pixie 2", is a very nice TRX to start building your own equipment. Minimum components, maximum fun. The spec's are poor, but what can you expect for 5 dollars? The crystal oscillator is a simple parallel-mode Colpitts type, designed for 3.5 MHz. The frequency depends on the used crystal, the preferred value is of course 3.56 MHz, the worldwide QRP-frequency! The "PA" is made with a 2N2219, delivering max. 400 mW to the antenna. But, this transistor is also a mixer for receiving signals. The LM386 is a popular AF amplifier, and gives enough gain to hear the stronger stations. **Warning!** You must have a HF amateurs radio licence to build and use this transceiver!

Some hints: You may add a series variable capacitor to the crystal which enables you to tune a little bit in frequency. Of course, you can add more components to improve e.g. receiving quality, but that's not the fun of this transceiver! Just keep it simple... Build the transceiver on a piece of PCB, using the "high-wire" method. All components which are connected to ground are soldered at the PCB, other nodes are floating.

Capacitors
C1 100pF
C2 100pF
C3 82pF
C4 47nF
C5 10nF
C6 820pF
C7 100pF
C8 100pF
C9 10uF
C10 10uF
C11 10uF

Inductors
L1. 15..22uH
L2 100uH
L3 2,2uH

Resistors
R1 47k
R2 1.5k
R3 33k
R4 10k
R5 1k

Other
X1 Crystal 3.56MHz
LS1 Speaker 8 ohm 0.3W or headphones
SW1 Morse Key

Semiconductors
D1 1N4148
T1 2N2222
T2 2N2219
U1 LM386N-1

(Courtesy BARC Newsletter)
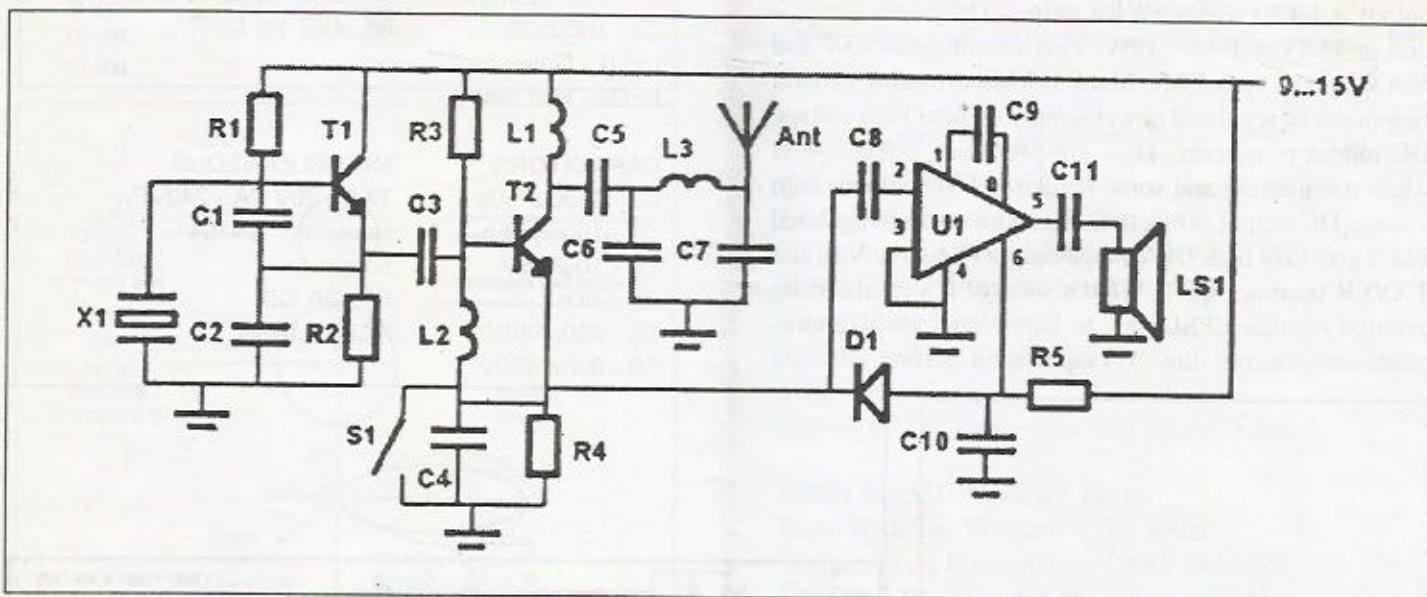
AWARDS

The 4th Rajiv Gandhi Award-1998 were given to Individuals and Clubs for the Promotional activities in Amateur Radio such as conducting classes, field days, lectures, disaster communication. This award is given by Rajiv Gandhi foundation, New Delhi and its chairperson is Mrs.Sonia Gandhi. Last year (1998) the awards were given to the following persons.

First Prize: Rayaporlu Sarath Babu VU3RSB
Qth: Hyderabad, Andhra Pradesh

Second Prize: H.N.Naveen VU2HNN
Qth Mysore, Karnataka
Third Prize: V.Palaniyappan VU2PKV
Qth: Thanjavur, Tamil Nadu
Consolation: P.B.Phaninder VU3PBP
Qth: Hyderabad.

These awards have since been discontinued from this year onwards due to poor response as per the letter from Rajiv Gandhi Foundation.

HOME BREW
NSH26VA
THINGS TO LEARN, PROJECTS TO BUILD, AND GEAR TO USE
by N.S. Harishankar VU3NSH.

SPECIFICATIONS & FEATURES

- 13V DC output
- 1.8 A Auto limit
- 'BUS' indication
- 'Vin low' indication

- 86dB Ripple rejection
- DC high voltage protection
- 130V- 240V AC input
- 100% RF immune

It is an economical power supply with standard protections meant for QRP or 2M/70cm TXVER users. The heart of this design is based on LM723IC. IC LM723 is very very popular since Y74 till now, 25 Yrs old!!; It is so because the IC is easily configured to different voltage levels and different current limits automatically with lot of features like low temperature drift, high ripple rejection, low stand by current etc.

In this circuit, IC is configured to get 13V output and 1.8A I Limit MAX. Additional features are added like 'BUS' indicator, low Vin indicator and simple high voltage DC output protection etc. All 2m (VHF) TXVER's max working voltage is 15 V-16V, and the ideal voltage is 13.8V. The MAX DC current consumption for 5 WRF output is 1.4A i.e., for 5WRF output, DC power conception in 13.8V x 1.4A= 19W. This circuit gives 13V and MAX current upto 1.8A. Many HAMS are using general eliminator or regulated power supply without high voltage DC output protection; They are producing 50HZ QRM while transmitting and some regulated PSU without high voltage DC output protection. Sometimes these regulated PSUs give very high DC voltage output (Equal to Vin) and TXVER becomes QRT. What's wrong? If you are using external regulate dPSU, due to high temperature, appropriate components, low AC input span, strong RF field

etc.will make high DC output voltage or 50HZ QRM. In this design Z2 is used for high voltage protection. When the output DC voltage is more than 15V or above F2,it will blow off. The current limit is set by resistor Rsc. I limit is calculated by this formula ILmt=0.6/Rsc. The 'BUS' indicator LED1 (green) will glow normally. It is monitoring the proper output from the IC if 'bus' LD1 goes off. i.e., output voltage from IC is below 6V or nil. So the glow of LED1 is good sign of the proper condition of IC. LED2 is normal Vin indicator. If the Vin voltage is 15V or low. Then LED2 (red) turns off. In this condition, while TXVER on TX mode will give 50HZ QRM. Use 0-20V 2A (20V-40V A) transformer. Never change the specified component values. Use large heatsink for TIP 33; large heatsink allows heavy duty cycle. D5, D6 and C2 provides a separation (decoupling) from Vin to IC supply.

Capacitor C3 gives high ripple rejection upto 86 dB; using 20V/2A-240V input transformer, the AC voltage span is increased like 130V to 240V. PCB with Component Layout is available with the author.

SEMI CONDUCTORS	RESISTORS
IC-LM723	Rsc-0.33 2W 5%
T1-TIP33	R1- 1K5 1/4W 5%
D1 to D4- 1N5408	R2- 1K2 1/4W 5%
D5, D6- 1N4007	R3- 3K3 1% MFR
Z1 - 15V-400mW	R4- 5K6 1% MFR
Z2 - 1N5352B	R5- 4K7 1% MFR
LED1 - Green 5mm	
LED2 - Red 5mm	

CAPACITORS	MISCELLANEOUS
C1 - 3300uF50V	TX 0 - 20V 2A - 240VPri
C2 - 100uF50V	Heatsink - SK104
C3 - 10uF35V	50mm
C4 - 1Kp	F1 - 2A QB
C5 - 100uF40V	PCB, Cabinet,
C6 - 0.1uF100V	

NSH26VA

TEST POINT & VOLTAGE
A - 27V
B - 26V
C - 7.1V
D - 7.1V
E - 14.8
F - 7.1
G - 14.2V
H - 13.6V
I - 12.9V
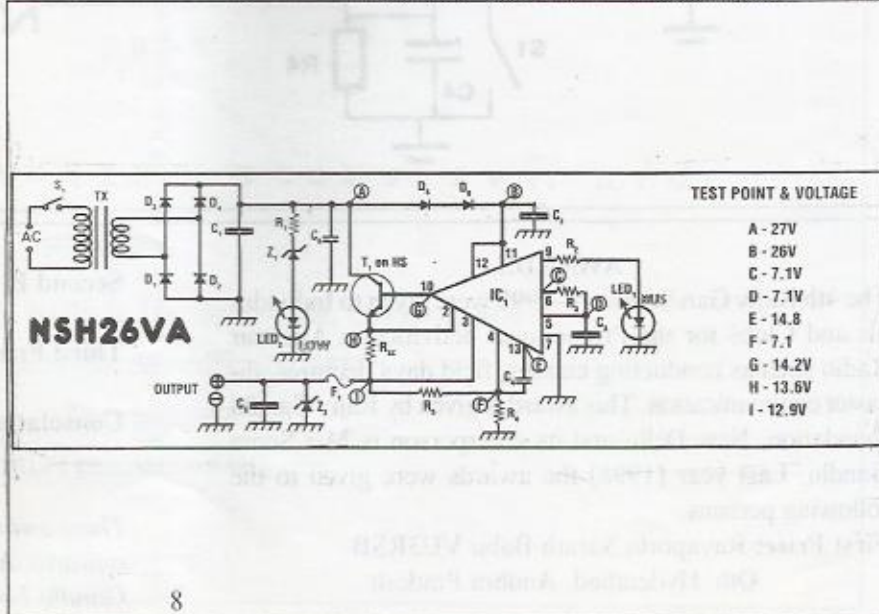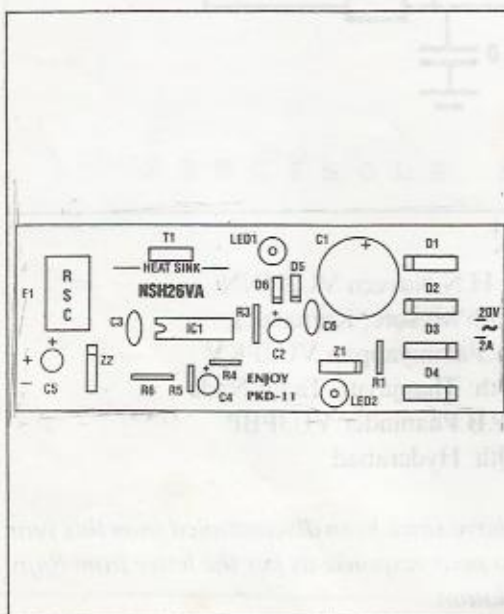
TX Aerial and E.R.P
by N.S.Harishankar- VU3NSH
Save Juice, have a nice DXing with high gain aerials without high power!!

Effective radiated power E.R.P, is the product of power fed the aerial times its power gain- i.e. An aerial having a gain of 11db over a dipole would have a power gain of 12.59 (see Tab-1) E.R.P. = Power gain x R.F. power. So a 7WRF power fed to such an aerial would be 12.59 x 7W = 88.13W E.R.P. (see tab-2) providing they are well construced, matched and in clear surroundings. 2M aerial have a little loss in true E.R.P. Generally the gain losses are due to poor insulation and proximity losses, mismatch in Travelling wave ratio TWR (VSWR) and cable mismatch etc. So a 11 dB Aerial with 4W RF Power is equal to 3dB Aerial with 25 W RF Power (See Fig A).

Table 1	
Depreciation of Power gain from dB Gain	
3 dB	1.995
4 dB	2.512
5 dB	3.162
6 dB	3.981
7 dB	5.012
8 dB	6.310
10 dB	10.00
11 dB	12.59

Radiation Patterns for Verticals and beam

λ/4 Aerial Omni 3dB RF Power 5 W

5/8 Aerial Omni 6dB RF Power 5 W

Max Intensity point

Beam Directional 11dB RF Power 5 W

Working range of imaginary angles.
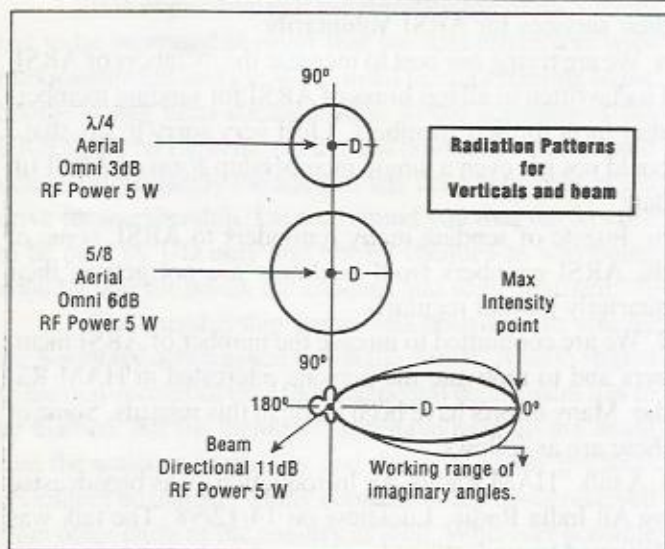
Table-2			
E.R.P. for different aerials			
Aerial Gain	3dB	5dB	11dB
1W	1.995	3.162	12.59
3W	5.985	9.486	37.77
5W	9.975	15.81	62.95
10W	19.95	31.62	125.9

Fig. A

3dB Aerial with 25 W

Equal Area

11dB Aerial with 4 W
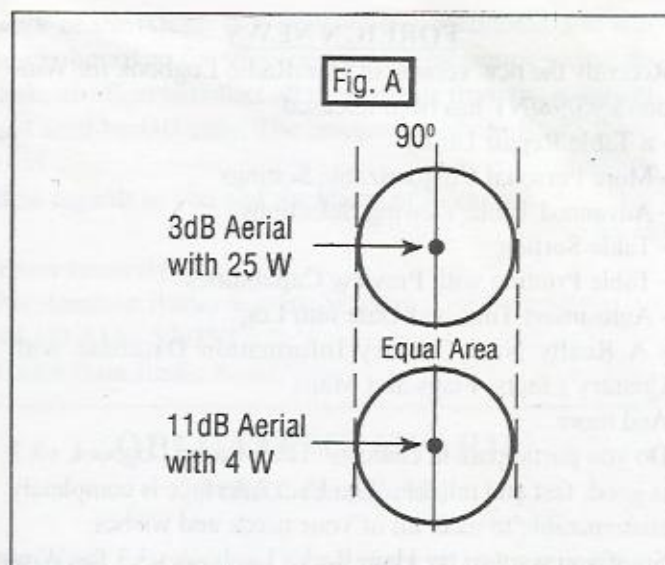
HAM JOKES
By AC6V

The OLD DXER: The sunspots were roaring and the Old Dxer was working DX night and day. The faithful XYL had had it with his QRZing and blew her stack. "DX DX DX- thats all you never think about!" she groaned. "Why I'll bet you don't even remember our wedding date!! "I most certainly do" was the immediate reply. "It was June 14th, 1958- Thats the night I worked the XT1, the CR0, and the AC6! !

DX MOVIES- By AC6V
Pileup On The Orient Express
Gone With The Wind-- A Yagi story
Dxpedition To Skull Island By KING/KONG
Butch Cassidy And the Sundance Lid
The Maltese Falklands
To Live and Let Diode-- 0073
Casablanker
Silence of The Hams- Starring Rachel Squelch

MISH MASH-- With RF Burns
Gone With The Windom-- The Squel
Nightmare on Elmer Street-- With JA1SON VERTICLE! ! Directed By Alfred Switchbox
Name is James, Call is BOND-- Agent 0073

(Courtesy Chets VU3DMP)

IARU Region 3 News
VU2UR, B.L.MANOHAR HAS BEEN APPOINTED AS MONITORING SYSTEM CO-ORDINATOR FOR REGION 3. *CONGRATULATIONS.*

FOREIGN NEWS

Recently the new version of HamRadio Logbook for Windows 95/98/NT has been released.
- a Table Repair Utility
- More Personal Customizable Settings
- Advanced Table Viewing Selections
- Table Sorting
- Table Printing with Preview Capabilities
- Auto-insert Time and Date into Log
- A Really Nice Country Information Database with Country's facts, Flags and Maps.
And more.....

Do you participate in contests? Ham Radio Logbook v3.3 is good, fast and reliable. The User Interface is completely customizable to meet all of your needs and wishes.

So, if you want to try Ham Radio Logbook v3.3 for Windows 95/98/NT, I invite you to visit the internet homepage and download the program at:

http://www.mesc-nl.demon.nl

If you have any questions, suggestions or ideas, don't hesistate and send us an E-mail.
M.Wasbauer PA3CKQ Software.
E-mail: PA3CKQ@kagi.com

BIRD WATCH

EASY STEPS FOR "EASY SAT"

by Oar Udnib

Just follow these easy steps, and you are through - "Easy Sat"- RS-13 Satellite.

Step 1. Look up the Time Table.

Step 2. Transmit (USB or CW) on 21.280 Mhz.

Step 3. Listen for reply around 29.480 Mhz.

Yes,that is all there is to working trhough RS-13 Satellite! Look out for VU2UR Arasu, VU2SL Dalvir, VU2LX Laxman, VU2MKP Bob, VU2RMS Ramesh, VU2DK Zal, on the band and get first hand info from those who have done the sat.

Dil Mange More? OK. Here is more.

Time Table: Better call it "Schedule". Tells you when the satellite is near India and usable. Time and Day is in UTC, jus add 5 and 1/2 hour for IST.

Actually, the schedule is made up for Central India. Should be ok for the whole country. Well, may be out by a couple of minutes or so, for locations far north or south.

Transmit Frequency

Your transmit frequency to the satellite, the "Up Link", can be from 21.260Mhz to 21.300Mhz. Centre of the Up Link pass band is 21.280Mhz. Better stick to the centre! There is another Up Link also - from 145.960Mhz. to 145.600 Mhz.

Receive Frequency

You receive signals from the satellite, the "Down Link", from 29.460 Mhz to 29.500Mhz. Centre of the Down Link

is 29.480Mhz.

If you transmit on the low end of the transmit passband, you get your signal back on the low end of the receive band. High end to high end.

Beacon

How do you know the satellite has arrived? You know because the satellite ANNOUNCES ITSELF!!! The RS-13 satellite puts out a continous signal on CW giving information on its health, and also some times announcements, and for our benefit, it also says- "RS 13" - thus identifying itself. This is the Beacon. It is on 29.458Mhz.

Through this Sat it is possible to work all of Eastern Africa, all the Indian Ocean countries,Middle east, much of Europe, all of Russia & Asia, South East Asia and much of Australia.

Dil Mange More, More??

Wait for the next issue of Ham Radio News!!

BREAK IN LETTERS TO EDITOR

From: D.C.Sharma VU2DCT A-218, HAL Township Lucknow- 226 016

SUB: Nomination for Governing Council of ARSI

Dear Om,

I have come through the editorial of Ham Radio News of Jan/Mar '99 issue regarding the nomination for Governing Council of ARSI. I would like to express my comments on editorial:

i. Please refer the back issues (1997) of HRN in which the members of U.P. Amateur Radio Society, Lucknow offered their services for ARSI Voluntarily.

ii. We are trying our best to increase the members of ARSI. I had written to all top brass of ARSI for sending membership form for new members. I feel very sorry to say that I could not get even a single membership form of ARSI till date.

iii. Inspite of sending many reminders to ARSI, some of the ARSI members from Lucknow are not getting their quarterly journal regularly.

2. We are committed to incrase the number of ARSI members and to motivate the persons interested in HAM Radio. Many efforts have been made in this regards. Some of these are as follows:

i. A talk "HAM Radio: An Introduction" was broadcasted by All India Radio, Lucknow on 14/12/98. The talk was delivered by undersigned.

ii. The HAL Scout Amateur Radio Club and U.P. Amateur Radio Society took part in the 5th National Youth festival was held on 12/16th Jan'99 at Lucknow.

iii. An Amateur Radio Club is being established at Lucknow. All the formalities are completed and the papers has been sent to Om Sahar.

iv. I was also nominated as Amateur Radio Trainer/ instructor for U.P. Bharat Scouts & Guide, Lucknow by state head quarters.

3. ARSI may use our services when and where is required

We offer ourselves to work voluntarily for ARSI and promise that we will do our best.

Note: Visitors please call CQ on 145.930 MHz.

73's Yours

D.C.Sharma VU2DCT

Incharge/Secretary

HAL Scouts Amateur Radio Club

Editor Replies

To, D.C.Sharma VU2DCT

Lucknow.

Dear Panditji,

Thank you for your letter of 19th March '99 and my apologies for not publishing it in the HRN. Your letter was lost in the big heap of correspondence that comes into the office here. While sorting some papers it was found. It is very encouraging that the Hams of Lucknow have taken an active part in the Youth Festival and tried to popularize the hobby.

With regards to your comments on the editorial and offer of volunteer help from the members of the UP Amateur Radio Society. It is a very noble gesture. However you need to nominate somebody to be elected to the Governing Council. The Elections are due this year and the nomination forms are printed in the HRN of Apr-June, which have already been posted.

It is imperative that the membership of the society has to be increased in order that we deal effectively with the Government and the WPC in all matters relating to the hobby. It has been stressed often in the columns of the HRN that UNITY is the need of the hour and we all should unite. Unfortunately the success has been very poor in the drive for membership. Let me remind you that the fees are to be paid by DD only and not by cheques as was being done by you for which the cheques had to be returned.

The membership forms had been sent to you by the Secretary, when asked for on the Airnet. Also in regard to the non-receipt of the HRN the postal department has to be blamed. All the members who have paid up are being sent the magazine regularly and if it goes astray the society cannot be blamed. Many complaints are being received from other parts of the country as well. Wherever possible we send duplicate copies but then the shortage of copies puts a restriction on this too.

The most important thing required by the society is to get ads for the magazine without which the magazine will not be able sustain itself. Secondly the magazine requires articles for publication. The magazine cannot go on copying articles from the other magazines forever. Some real good contribution from the members is required. It can be homebrew, happenings etc.

I once again thank you for your volunteering for

work of the ARSI. It is very much appreciated and will surely be asked for if needed. In the meantime please do make an effort to collect all the fees due from the members and send by DD only. The arrears are about Rs.75 thousand.

Best regards to you and the Hams of Lucknow.

Yours sincerely,

For Amateur Radio Society of India

SAAD ALI - VU2ST

Editor Ham Radio News.

OPERATING AWARDS
(ARRL Handbook)

RULES FOR CQ MAGAZINE'S DX AWARDS
Worked all Zones (WAZ)

The CQ WAZ Award will be issued to any licensed amateur station presenting proof of contact with the 40 zones of the world. This proof shall consist of proper QSL cards, which may be checked by any of the authorized CQ checkpoints or sent directly to the WAZ Award Manager. Many of the major DX clubs in the United States and Canada and most national Amateur Radio societies abroad are authorized CQ check points. If in doubt, consult the WAZ Award Manager or the *CQ* Magazine DX editor. Any legal type of emission may be used, providing communication was established after November 15, 1945.

The official CQ WAZ Zone Map and the printed zone list will be used to determine the zone in which a station is located. [A DXCC Countries List, which includes CQ Zones, appears in Chapter 17 of this book.] Confirmation must be accompanied by a list of claimed zones, using CQ form 1479, showing the call letters of the station contacted within each zone. The list should also clearly show the applicant's name, call letters and complete mailing address. The applicant should indicate the type of award for which he or she is applying, such as All SSB, All CW, Mixed, All RTTY. In remote locations and in foreign countries, a handwritten list may be submitted and will be accepted for processing, provided the above information is shown.

All contacts must be made with licensed, land-based, amateur stations operating in authorized amateur bands, 160-10 meters. All contacts submitted by the applicant must be made from within the same country. It is recommended that each QSL clearly show the stations' zone number. When the applicant submits cards for multiple call signs, evidence should be provided to show that he or she also held those call letters. Any altered or forged confirmations will result in permanent disqualification of the applicant.

A processing fee ($4 for subscribers- a recent *CQ*

mailing label must be included; $10 for nonsubscribers) and a self-addressed envelope with (sufficient postage or IRCs to return the QSL cards by the class of mail desired and indicated) must accompany each application. IRCs equal in redemption value to the processing fee are acceptable. Checks can be made out to the WAZ Award manager.

In addition to the conventional certificate for all bands and modes, specially endorsed and numbered certificates are available for phone (including AM), SSB and CQ operation. The phone certificate requires that all contacts be two-way phone, the SSB certificate requires that all contacts be two-way SSB and the CW certificate requires that all contacts be two-way CW.

If at the time of the original application, a note is made pertaining to the possibility of a subsequent application for an endorsement or special certificate, only the missing confirmations required for that endorsement need be submitted with the later application, providing a copy of the original authorization signed by the WAZ Manager is enclosed.

Decisions of the CQ DX Awards Advisory Committee on any matter petaining to the administration of this award will be final.

All applications should be sent to the WAZ Award Manager after the QSL cards have been checked by an authorized CQ checkpoint. Zone maps, printed rules and application forms are available from the WAZ Award Manager. Send a business-size (4x9-inch), self-addressed envelope with two units of First-Class postage, or a self-addressed envelope and 3 IRCs.

Single Band WAZ

Effective January 1, 1973, special WAZ Awards will be issued to licensed amateur stations presenting proof of contact with the 40 zones of the world on 80,40,20,15 and 10 meters. Contacts for a Single Band WAZ award must have been made after 0000 hours UTC Janauary 1, 1973. Single-band certificates will be awarded for both two-way phone, including SSB and two-way CW.

5 Band WAZ

Effective January 1, 1979, the CQ DX Department, in cooperation with the CQ DX Awards Advisory Committee, announced a most challenging DX award- 5 Band WAZ. Applicants who succeed in presenting proof of contact with the 40 zones of the world on the five HF bands- 80,40,20,15 and 10 meters (for a total of 200)- will receive a special certificate in recognition of this achevement.

These rules are in effect as of July 1, 1979, and supersede all other rules, Five Band WAZ will be offered for any combination of CW, SSB, Phone or RTTY contacts, mixed mode only. Separate awards will not be offered for the different modes. Contacts must have been made after 0000 UTC January 1, 1979. Proof of contact shall consist of proper QSL cards checked only by the WAZ

Award Manager. The first plateau will be a total of 150 zones on a combination of the five bands. Applicants should use a separate sheet for each frequency bands, using CQ Form 1479.

A regular WAZ or single Band WAZ is a prerequisite for a 5 Band WAZ certificate. All applications should show the applicant's WAZ number. After the 150 zone certificate is earned, each 10 additional zones requires the submission of QSL cards and a $1 fee. The final objective is 200 zones for a complete 5 Band WAZ. The applicant has a choice of paying a fee for a plaque and/or applying for an endorsement sticker commemorating this achievement.

All applications should be sent to the WAZ Award Manager. The 5 Band Award is governed by the same rules as the regular WAZ Award and uses the same zone boundaries.

WARC Bands WAZ

Effective January 1, 1991, single band WAZ Awards were issued to amateurs presenting proof of contact with the 40 zones of the world on any one of the WARC bands: 30,17, or 12 meters. (Each band constitutes a separate award and may be applied for separately). This award is available for Mixed mode, SSB, RTTY or CW. Contacts for each WARC WAZ Award must have been made after each station involved in the contact had permission from its licensing authority to operate on the band and mode.

RTTY WAZ

Special WAZ Awards are issued to Amateur Radio stations presenting proof of contact with the 40 world zones using RTTY. For the mixed band award, QSL cards must show a date of November 15, 1945 or later. The RTTY WAZ is also available with a single band endorsement for 80, 40, 20, 15 or 10 meters. QSL cards submitted for single band endorsements must show a date of January 1, 1973 or later.

WNZ: WNZ stands for "Worked Novice Zones" and is available only to holders of a US Novice or Technician license. Proof of contact with at leas 25 of the 40 CQ zones as described by the WAZ rules is required. All contacts must be made using the 80, 40, 15 and 10-meter Novice bands. In addition, all contacts must be made while holding a Novice or Technician license, although the application may be submitted at a later date. Contacts must be made prior to receiving authorization to operate with higher class privileges. The WNZ is available as a Mixed Mode, SSB or CW award. It may also be endorsed for single band. The WNZ award may be used to fulfill part of the application requirement for the WAZ Award when all 40 zones are confirmed.

The basic award can be obtained by submitting QSL cards for 25 zones. The processing fee is $5 for all applicants. All QSL cards must show a date of January 1, 1952 or later. Use CQ Form 1479 to apply for this award.

160 Meter WAZ

The WAZ Award for 160 meters requires that the applicant submit directly to the WAZ Manager QSL cards from at least 30 zones. All QSL cards must be dated January 1, 1975 or later and a $5 fee must accompnay all applications. The 160 WAZ is a mixed mode award only. The basic 160 WAZ Award may be secured by submitting QSLs from 30 zones. Stickers for 35, 36, 37, 38, 39, 40 zones can be obtained from the WAZ Manager upon submission of the QSL cards and$2 for each sticker.

Satellite WAZ

The Satellite WAZ Award is issued to Amateur Radio stations submitting proof of contact with all 40 CQ zones through any Amateur Radio satellite. The award is available for mixed mode only. QSL cards must show a date of January 1, 1989 or later.

The Prefix Award Program

WPX: The CQ WPX Award recognizes the accomplishments of confimed QSOs with many prefixes used by amateurs throughout the world. Separate distinctively marked certificates are available for two-way SSB, CW and mixed modes, as well as the VPX Award for shortwave listeners and the WPNX Award for Novices.

All applications for WPX certificates (and endorsements) must be submitted on the official application form, CQ 1051A. This form can be obtained by sending a self-addressed stamped, business-size (4x9-inch) envelope to the WPX Award Manager, Norm Koch, K6ZDL, PO Box 593, Clovis, NM 88101. All QSOs must be made from the same country. All call letters must be in strict alphabetical order and the entire call letters must be shown. All entries must be clearly legible. Certificates are issued for the following modes and number of prefixes.Cross-mode QSOs are not valid for the CW or 2YSSB certificates. Mixed (CW/phone only): 400 prefixes confirmed. CW: 300 prefixes confirmed. Separate applications are required for each mode. Cards need not be sent, but they must be in the possession of the applicant. Any and all cards may be requested by the WPX Award Manager or by the CQ DX Committee. The application fee for each certificate is $4 for subscribers (subscribers must include a recent CQ mailing label) and $10 for nonsubscriber, or the equivalent in IRCs. All applications and endorsements should be sent to the WPX Award Manager.

Prefix endorsements are issued for each 50 additional prefixes submitted. Band endorsements are available for working the following numbers of prefixes on the various bands: 1.8 MHz-50, 3.5 MHz-175, 7 MHz-250, 14 MHz-300, 21 MHz-300, 28 MHz-300. Continental endorsements are given for working the following numbers of prefixes in the respective continents: North America-160, South America-95, Europe-160, Africa-90, Asia-75, Oceania-60. Endorsement applications must be submitted on CQ Form 1051A. Use separate applications for each

mode and be sure to specify the mode of your endorsement application. For prefix endorsements, list only additional call letters confirmed since the last endorsement application. A self-addressed, stamped envelope or proper IRCs for surface or airmail return is required, and $1 or 5 IRCs for each endorsement sticker.

Prefixes: The two or three/numeral combinations which form the first part of any amateur call will be considered the prefix. Any difference in the numbering, lettering, or order of same shall constitute a separate prefix. The following would be considered different: W2, WA2, WB2, WN2, WV2, K2 and KN2. Any prefix will be considered legitimate if its use was licensed or permitted by the governing authority in that country after November 15, 1945. A suffix would designate portable operation in another country or call area and would count only if it is the normal prefix used in that area. For example, K4IIF/KP4 would count as KP4. However, KP4XX/7 would not count as KP7, since this is not a normal prefix. Suffixes such as /M, /MM, /AM, / A and /P are not counted as prefixes. An exception to this rule is granted for portable operation within the issued call area. Thus, contact with a special prefix such as WS2JRA/2 counts for WS2; however, WSJRA/3 would count for W3. All calls without numbers will be assigned an arbitrary 0 plus the first two letters to constitute a prefix. For example, RAEM counts as RA0, AIR as AI0, UPOL as UP0. All portable suffixes that contain no numerals will be assigned an arbitrary 0. For example, W4BPD/LX counts as LX0, and WA6QGW/PX counts as PX0.

WPNX

The WPNX Award can be earned by US Novices who work 100 different prefixes prior to upgrading. The application may be submitted after receiving the higher license, providing the actual contacts were made as a Novice. Prefixes worked for the WPNX Award may be used later for credit toward the WPX Award. The rules for the WPNX Award are the same as for the WPX Award except that only 100 prefixes must be confirmed. Applications are sent to the WPX Award Manager.

WPX Honor Roll

The WPX Honor Roll recognizes those operators and stations that maintain a high standing in confirmed, current prefixes. The rules therefore, reflect the belief that Honor Roll membership should be accessible to all active radio amateurs and not to be unduly advantageous to the "old-timers". With the exceptions listed below, all general rules for WPX apply toward Honor Roll credit. A minimum of 600 prefixes is required to be eligible for the Honor Roll.

Only current prefixes may be counted toward WPX Honor Roll standings, those prefixes to be listed and updated annually in CQ or to be available from the WPX Award Manager. Special-issue prefixes (such as OF, OS4A)

will be considered current for as long as they are assigned to a particular country and deducted as credit for Honor Roll standings after cessation of their use or assignment. Honor Roll applicants must submit their list of current prefixes (entire call required) separate from their regular WPX applications. Use regular Form 1051 and indicate "Honor Roll" at the top of the form. Forms may be obtained by sending a business-zize SASE or one IRC (foreign stations send extra postage or IRC if airmail desired) to the WPX Award Manager. A separate application must be made for each mode. Endorsements for the Honor Roll may be made for 10 or more prefixes. As SASE or IRC should be included.

WPX Award of Excellence

This is the ultimate award for the prefix DXer. The requirements are 1000 prefixes mixed mode, 600 prefixes SSB, 600 prefixes CW, all six continental endorsements, and the 5 band endorsements 80-10 meters. A special 160-meter endorsement bar is also available. The WPX Plaque fee is $60, and the 160-meter bar is $5.25.

The CQ DX Awards Program

The CQ CW DX Award and CQ SSB DX Award are issued to any amateur station submitting proof of contact with 100 or more countries on CW or SSB. The CQ DX RTTY Award is issued to any amateur station submitting proof of contact with 100 countries or RTTY. Applications should be submitted on the official CQ DX Award application (Form 1067B). All QSOs must be listed in alphabetical order by prefix, and all QSOs must be dated after November 15, 1945. QSL cards must be verified by one of the authorized checkpoints for the CQ DX Awards or must be included with the application. If the cards are sent directly to the CQ DX Awards Manager, Billy Williams, N4UF, PO Box 9673, Jacksonville, FL 32208, postage for return by First-Class mail must be included. If certified or registered mail return is desired, sufficient postage should be included. Country endorsements for 150, 200, 250, 275, 300, 310 and 320 countries will be issued.

Any altered or forged confirmations will result in permanent disqualification of the applicant. Fair play and good sportsmanship in operating are required for all amateurs working toward CQ DX Awards. Continued use of poor ethics will result in disqualification of the applicant. A fee of $4 for subscribers (subscribers must include a recent *CQ* mailing label with their application) or $10 for nonsubscribers, or the equivalent in IRCs, is required for each award to defray the cost of the certificate and handling. An SASE or 1 IRC is required for each endorsement.

The ARRL DXCC Countries List constitutes the basis for the CQ DX Award country status. Deleted countries will not be valid for the CQ DX Awards. Once a country has lost its status as a current country, it will automatically be deleted from our records. All contacts must be with licensed land-based amateur stations working in authorized amateur bands. Contacts with ships and aircraft cannot be counted. Decisions of the CQ DX Advisory Committee on any matter pertaining to the administration of these awards shall be final.

To promote multiband usage and special operating skills, special endorsements are available for a fee of $1 each:

* A 28-MHz endorsement for 100 or more countries confirmed on the 28-MHz band.
* A 3.5/7-MHz endorsement for 100 or more countries confirmed using any combination of the 3.5 and 7-MHz bands.
* A 1.8-MHz endorsement for 50 or more countries confirmed on the 1.8-MHz band.
* A QRP endorsement for 50 or more countries confirmed using 5-watts input or less.
* A Mobile endorsement for 50 or more countries confirmed while operating mobile. The call-area requirement is waived for this endorsement.
* An SSTV endorsement for 50 or more countries confirmed using two-way slow scan TV.
* An OSCAR endorsement for 50 countries confirmed via amateur satellite.

(After the basic award is issued, only a listing of confirmed QSOs is required for these seven special endorsements. However, specific QSLs may be requested by Award Manager N4UF.)

The CQ DX Honor Roll will list all stations with a total of 275 countries or more. Separate Honor Rolls will be maintained for SSB and CW. To remain on the Honor Roll, a station's country total must be updated annually.

USA-CA Rules and Program

The United States of America Counties Award, also sponsored by *CQ*, is issued for confirmed two-way radio contacts with specified numbers of US counties under rules and conditions below. | Note: A complete list of US counties appears in Chapter 17. |

The USA-CA is issued in seven (7) different classes, each a separate achievement as endorsed on the basic certificate by use of special seals for higher class. Also, special endorsements will be made for all one band or mode operations subject to the rules.

Class	Countries Required	States Required
USA-500	500	Any
USA-1000	1000	25
USA-1500	1500	45
USA-2000	2000	50
USA-2500	2500	50
USA-3000	3000	50

USA 3076-CA for ALL counties and Special Honors Plaque [$40]

USA-CA is available to all licensed amateurs everywhere in the world and is issued to them as individuals for all county contacts made, regardless of calls held, operating QTHs or dates. All contacts must be confirmed by QSL, and such QSLs must be in one's possession for identification by certification officials. Any QSL card found to be altered in any way disqualifies the applicant. QSOs via repeaters, satellites, moon bounce and phone patches are not valid for USA-CA. So-called "team" contacts, where in one person acknowledges a signal report and another returns a signal report, while both amateur call signs are logged, are not valid for USA-CA. Acceptable contact can be made with only one station at a time.

The National Zip Code & Directory of Post Offices will be helpful in some cases in determining identity of counties of contacts as ascertained by name of nearest municipality. Publication No.65, Stock no. 039-000-00264-7, is available at your local Post Office or from the Superintendent of Documents, US Government Printing Office, Washington, DC 20402, for $12, but will be shipped only to US or Canada.

Unless otherwise indicated on QSL cards, the QTH printed on cards will determine county identity. For mobile and portable operations, the postmark shall identify the county unless information stated on QSL cards makes other positive identity. In the case of cities, parks or reservations not within counties proper, applicants may claim any one of adjoining counties for credit (once).

The USA-CA program will be administered by a *CQ* staff member acting as USA-CA Custodian, and all applications and related correspondence should be sent directly to the custodian at his or her QTH. Decisions of the Custodian in administering these rules and their interception, including future amendments, are final.

The scope of USA-CA makes it mandatory that special Record Books be used for application. For this purpose, *CQ* has provided a 64-page 4 1/4- x 11-inch Record Book which contains application and certification forms and which provides record-log space meeting the conditions of any class award and/or endorsement requested. A completed USA-CA Record Book constitutes medium of basic applications and becomes the property of *CQ* for record purposes. On subsequent applications for either higher classes or for special endorsements, the applicant may use additional Record Books to list required data or may make up own alphabetical list confirming to requirements. Record Books are to be obtained directly from *CQ*, 76 North Broadway, Hicksville, NY 11801, for $1.25 each. It is recommended that two be obtained, one for application use and one for personal file copy.

Make Record Book entries necessary for county identity and enter other log data necessary to satisfy any

special endorsements (band-mode) requested. Have the certification form provided signed by two licensed amateurs (General class or higher) or an official of a national-level radio organization or affiliated club verifying the QSL cards for all contacts as listed have been seen. The USA-CA custodian reserves the right to request any specific cards to satisfy any doubt whatever. In such cases, the applicant should send sufficient postage for return of cards by registered mail. Send the original completed Record book (not a copy) and certification forms and handling fee. Fee for nonsubscribers to *CQ* is $10 US or 40 IRCs; for subscriber, the fee is $4 or 12 IRCs. (Subscribers, please include recent *CQ* mailing label.) Send applications to USA-CA Custodian, Norm Van Raay, WA3RTY, Star Route 40, Pleasant Mount, PA 18453.

For later applications for higher-class seals, send Record Book or self-prepared list per rules and $1.25 or 6 IRCs handling charge. For application for later special endorsements (band/mode) where certificates must be returned for endorsement, send certificate and $1.50 or 8 IRCs for handling charges.

Note: At the time any USA-CA award certificate is being processed, there are no charges other than the basic fee, regardless of number of endorsements or seals; likewise, one may skip lower classes of USA-CA and get higher classes without losing any lower awards credits or paying any fee for them. Also note: IRCs are not accepted from US stations.

[The Mobile Emergency and Countries Hunters Net meets on 14,336 kHz SSB everyday and on 3866 kHz evenings during the winter. The CW Country Hunters Net meets on 14,066.5 MHz daily.]

GERATOL NET

The ARRL offers many endorsements to the popular worked All States (WAS) award. One of them is the "75-meter 2-letter Extra Class" Award available to any extra Class amateur who has worked all states consisting of 1x2, 2x1 or 2x2 call signs on the Extra Class portion of 75 meters.

During the winter of 1977, a separate award-the "Unbelievable Operating Achievement Award" (otherwise known as the Geratol Net Award)- was established by N4BA, K5BG,W7RQ and W0GX. On March 10, 1978, an informal net went into operation to provide a meeting place and to assist other with the completion of both the ARRL WAS and the new award developed by N4BA and company.

Around this time, someone suggested that most of those working toward the unique 2-letter WAS award were senior citizens, the name "GERATOL Net" might be appropriate! That name stuck; the spelling has been changed to the acronym "GERATOL" (Greetings Extra Radio

Amateur-Tired of Operating Lately?). In many ways this describes the essence of the GERATOL Net. More than one "GERATOLLER" will tell you that the fellowship and challenge has revitalized their amateur opeations and allowed a welcome escape from the mundane "Roger 59" DX world.

The GERATOL Net is quite active during the good 75-meter propagation months, from October through April. As many as 48 states have checked into the net during the course of an evening, including Alaska and Hawaii. Using three net - control shifts, it convenes around 0100 UTC each evening, and routinely runs until after 0700. Meeting around 3767 kHz, the net still pursues the original purpose developed by its founders. No dues or membership fees are required. DX stations are welcomed to check in and work any W or VE, but W/VEs are not allowed to call DX stations (for obvious reasons).

To qualify for the GERATOL Award, you first must qualify for the ARRL 75-Meter 2-Letter WAS Award. Once you have secured the ARRL WAS Award, you are eligible to apply for your GERATOL Award. Include your ARRL WAS certificate serial number and date, your name as you want it to appear on the GERATOL certificate, and $3 to defray printing and mailing cost, and send to Bruce Winkelman, AA5CO, 3014 W 68th PL, Tulsa, OK 74132.

Once you have secured the basic GERATOL certificate, 12 interesting and challenging endorsements are available to add to it. The honor system is used, so no QSL Cards are required. A brief description of each follows:

1) WAS with 1x2 call signs, K prefixes only.

2) 48 states with 1x2 call signs, N prefixes only.

3) 48 states with 1x2 call signs, W prefixes only.

4) WAS with 1x2 call signs, with the suffix of each containing each operator's initials.

5) WAS with 1x2 call signs, with the suffixes containing the postal abbreviations of the states.

6) WAS with 1x2 call signs, with the suffixes containing double letters twice through the alphabet.

7) WAS with 2x1 call signs.

8) WAS with other stations that have already qualified for the ARRL 75-Meter 2-Letter WAS Award.

9) WAS with 2x1 call signs, with the suffixes containing each letter twice through the alphabet.

10) WAS with Extra Class 1x3 call signs.

11) WAS with 2x1 call signs, A prefixes only.

12) WAS with 2x1 call signs, K prefixes only.

13) WAS with YLs only. Contact must be made after 0500 UTC, February 13, 1990.

14) WAS with 2x1 call signs, N prefixes only.

Endorsements 15 through 25 require that contacts be made after 0500 UTC, February 13, 1990.

15) WAS with 2x1 call signs, W prefixes only.

16) 48 contiguous states with double letter prefixes. (E.g. AA4GN, NN8P)

17) WAS with 2x3 call signs.

18) WAS with state capitals (1 x 2, 2 x 1 and 2 x 2 Extra Class call signs).

19) WAS with QCWA members (Collect QCWA numbers)

20) WAS with 1x2 call signs (2x2 Extra Class in HI and AK) and exchange GERATOL numbers. Operators must have a GERATOL number to collect numbers.

21) WAS with 2x1 call signs and exchange GERATOL numbers. Operators must have a GERATOL number to collect number.

22) WAS five times over with 1x2, 2x1 and 2x2 Extra Class format call signs. This endorsement requires 250 total contacts, 5 in each state.

23) Century DX: Work all 50 states atleast once with no more than 3 contacts in any state (100 contacts required) Collect number and last letter on 2x1 call signs, last two letters on 1x2 and 2x2 call signs that represent a DX country prefix. For example, K9JA, the JA= Japan; WC5T, the 5T= Mauritania.

24) WAS with 2x2 call signs, K prefixes only.

25) 48 contiguous states mobile with any call-sign format.

For further information on endorsements, and on any GERATOL Net details, send your request with a business-size SASE to Richard Beran, W0YTZ, 300 Valley View Dr, Ord, NE 68862.

The "Directors Award" is available for working 100 GERATOL members and exchanging 100 GERATOL numbers. Additional recognition is available for each group of 100 contacts verified above the initial 100 contact requirement. The operator must have a GERATOL number to exchange numbers.

The GERATOL Net also is involved in a parallel operation, the Canadian 2/80 Award. Requirements for the award consist of working the following Canadian provinces and territories:

VO1	Newfoundland	VE3	Ontario
VO2	Labrador	VE4	Manitoba
VE1	New Brunswick	VE5	Saskatchewan
VE1	Nova Scotia	VE6	Alberta
VE1	Prince Edward Island	VE7	British Columbia
VE2	Quebec	VE8	North West Territories

Contacts may be made anywhere on 75/80 meters on any mode. All QSL cards must show a contact date of 0000 UTC November 1, 1972 or later. Stations worked must have 2-letter call-sign suffixes. Once you have all 12 QSL cards, submit them to Norm Smith, VE3EJQ, 2/80 Contest Coordinator, 1849 Cora Dr, RR #3, Cavan, ON L0A 1C0, Canada. Include $3 US for handling.

So take a short of GERATOL and join the group on 75 meters to experience a new operating challenge.

NOTICE OF THE ANNUAL GENERAL MEETING OF THE ARSI

The Annual General meeting of the Amateur Radio Society of India will be held on the 19th September 1999 at the Kalamandira , Mysore at 1045 hours IST.

The agenda will be as under:

1. Elections to the Governing Council (Casting of ballot if any)
2. To read and pass the minutes of the AGM held on the 8th December, 19
3. Presenting the report of the General Secretary.
4. To present and pass, if fit the balance sheet for the financial year 1998-1999.
   (Published in the HRN July/Sept 99)
5. Formation of the new Governing Council
6. To appoint auditors for the financial year 1999-2000 and fix the remuneration.
7. To appoint (a) Editor for the HRN (b) QSL Managers for the Buros (c) IARU Liaison Officer
8. To discuss any other point that may be raised with the permission of the chair.
9. Vote of thanks.

Mumbai
31st July, 1999

Adolf B.Shepherd, VU2AF
Hony. General Secretary

CANCELLED

Note: Date for the Annual General Meeting will be notified at a later date.

K.C.DESAI -B.Com., F.C.A.
M.K.DESAI-B.Com., F.C.A

AUDITOR'S REPORT

To,
The Members,
Amateur Radio Society of India.
BOMBAY

We have Audited the annexed Balance Sheet of **AMATEUR RADIO SOCIETY OF INDIA, BOMBAY** as at 31st MARCH 1999 and also the annexed Income & Expenditure Account for the year ended as on that date and with their books of accounts vouchers and have to report that the same have been found correct.

PLACE: MUMBAI
DATE:

CHATERED ACCOUNTANTS.

AMATEUR RADIO SOCIETY OF INDIA - MUMBAI
INCOME & EXPENDITURE A/C FOR THE YEAR ENDED 31ST MARCH'1999

PARTICULARS	AMOUNT		PARTICULARS	AMOUNT
To Salary	50,800.00		By Mem.Fees	66,105.00
To Subscription (IARU)	15,200.00		By Advertisement	54,925.00
To Printing (HRN)	64,150.00		By Donations	17,000.00
To Postage	7,517.50		By Import Reg.Fees	2,450.00
To Printing & Stationery	7,008.00			
To Xerox Charges	65.75		By Interest Received	
To Conveyance	4,402.50		a) Saving Bank	2,914.00
To Audit Fees	1,000.00		b) HDFC FDs	55,961.68
To Bank Charges	2,015.00		c) Bank FDs	24,062.63
To General Expenses	4,925.80			
To Service Charges	8,750.00			
To Depreciation	2,810.00			
To Net Income	54,773.76			
	223,418.31			223,418.31

AMATEUR RADIO SOCIETY OF INDIA
BALANCE SHEET AS ON 31ST MARCH,1999

LIABILITIES		AMOUNT		ASSETS	AMOUNT
CORPUS FUND				Fixed Assets	9,390.00
Opening Balance	286,150.00			Cash at Bank	6,774.60
Add : Life Membership	25,500.00	311,650.00		cash in Hand	7,881.85
				FIXED DEPOSITS	
INCOME & EXPD A/C				Union Bank of India	300,000.00
Bal as per last B/S	128,429.69			HDFC	450,000.00
Add : Income for the year	54,773.76	183,203.45			
				Bank Gurantee	4,589.00
Advances from Members		294,800.00		Interest Receivable	11,018.00
		789,653.45			789,653.45

"AS PER OUR ANNEXED REPORT
SD/- CHARTERED ACCOUNTANTS
(M.K.DESAI)

FOR AMATEUR RADIO SOCIETY OF INDIA
SD/- TREASURER
(MANSOOR KHAN)

SD/- GEN SEC
A.SHEPHERD

GOOD NEWS FOR ALL YAESU RADIO USERS

The society intends to import all optionals for all the Yaesu Radios for the members only. This will be purely on the availability of the optionals or spares. The cost and the mode of payments will be worked out only after the consolidated list is submitted to Yaesu Musen. If the cost of the optional/spares is Rs.1000/- or more then only will the WPC be approached for the duty concession. The others whose total is below Rs.1000/- will receive the benefit of the concession from Yaesu Musen but will have to pay the penal duty which is not much different from the concessional duty.

When placing the order, kindly send in Rs.100/- as a non-refundable booking fee by DD. The particulars required are as follows:
a) Details of optional/spare
b) Item identification No./Part No. as per cataglogue
c) Sub-assembly for which required
d) Main equipment for which it is required
e) Quantity required.

The time limit for the booking will only be three months. The last date will definitely be 31st October 1999. No orders will be accepted after the due date. After this date most probably the process will take about three months. So rush your orders immediately. If sufficient orders are not received the order will not be processed and the deposit refunded.

MYSORE HAMFEST

The preparations for the Hamfest India '99 seem to be in full swing. The three day annual event is scheduled for 17, 18 & 19 of September in Mysore. The following is the info found at http://www.hamfestindia.org

Day One: 17 Sept 1999
1500   Registration and Coffee
1730   General Convenor's address
1800   Lecture on introduction to HAM radio by:- VU2TS Ganesh
1900   Demo on HF VHF Packet radio (Above programmes open to public)
2000   Dinner for delegates

Day Two : 18 Sept 1999
0730   Registration opens
0800   Breakfast
0930   Inauguration of Hamfest India 99
1100   Tea/Snack break and Eyeball
1300   Lunch
1430   Excursion with lots of games, contests and group photo
1800   Departure from outing
1930   Dinner at Mysore

Day Three: 19 Sept 1999
0800   Breakfast
0900   Hamming with Linux
0945   Lecture on operating procedure of HF/VHF & Nets, VU2TS Ganesh
1030   Tea/Snack Break
1045   ARSI Annual General Meeting
1200   Hamfest India99 Valedictory
1300   Lunch & Sign Off

The brochures have already been mailed. For more info email: *info@hamfestindia.org*

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