

**Check this out... what others say about Licencing Procedures in India**

**INDIA AND THE FAR EAST**

An Indian licence might prove a harder nut to crack. VK2BV writes on his site "Dont even think about it - it takes Indian nationals 12 months from passing exams to actually getting a licence, what with the security checks and bureaucracy. On the other hand, try to contact a club there and you will be taken back 50 years to the days of home-built valve rigs and equipment. They still need to prove solid CW experience before getting an SSB HF licence. But they are extremely hospitable people."

I looked for some Indian sites and came upon the interesting pages of Sandeem, VU2MSY, in Assam, who includes the Indian licence regs and mentions the five different classes of licence and lists the various radio societies. Read his page on suggested licence changes. You will be surprised. it seems at present there is no mobile operation allowed, no digital modes, no 80, 40,30 and 6m, no CW HF easements, and so on. I cannot verify these facts, I am just quoting his site.

Fiji, on the other hand, continues VK2BV, is less daunting. "I did all that - sent a copy licence - and, upon check-in at the resort, I had my 3D2RS licence! Not only that, a day later a man from the Ministry called us at the resort to check that I got it! Very efficient and caring. I was extremely impressed."

Abstract from an article "Operating abroad" published in RadCom Vol 80 No.9 September 2004 By Jeremy Boot, G4NJH

FOR SALE		
Material	*Members	Non-Members
Study Manual	Rs. 100/-	Rs. 110/-
Morse code practice book	Rs. 40/-	Rs. 50/-
Morse Key	Rs. 125/-	Rs. 135/-
Exam application form	Rs. 20/-	Rs. 25/-
Morse code Practice		
Oscillator	Rs. 175/-	Rs. 200/-

\*\* Postage charges extra ...  
\* Members: N.I.A.R Membership  
Note : The amount may send Material Charges along with the postage charges (Registered Post) by Demand Draft in favour of "Director, National Institute of Amateur Radio" payable at Hyderabad.

**Latest WPC Address for Correspondence**  
Asst. Wireless Adviser  
Government of India  
Ministry of Communications & Information Technology  
Department of Telecommunications  
WPC Wing, Amateur Section  
521, Sanchar Bhawan  
20 Ashoka Road  
New Delhi 110001  
Phone no is : 011-2303 6181  
Fax No. is 011-2371 6111.

**NIAR is following up the matter of pending licences with WPC. SWLs awaiting the licences are requested to send their ASOC examination details to NIAR for the followup.**



Left is KI6FF David founder of www.wswss.org, Center KG6HMN Gabriel & right is W6XD Art Goddar Southwestern Division Vice Director for ARRL

**Mr.Gabriel R Provencio - KG6HMN**  
*Mr. Gabriel R Provencio, KG6HMN is very active and popular ham from Pomona, California, U.S.A and works in all Modes and very active on Echolink.*  
We thank Mr.Gabriel, KG6HMN for taking part in many demonstrations conducted by National Institute of AmateurRadio, VU2NRO

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URL: www.niar.org Telefax: 040-23310287, Tel : 040 - 55167388  
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This edition is compiled by S. Ram Mohan, VU2MYH & Jose Jacob, VU2JOS Printed and Published by the Editor on behalf of NIAR and Printed at Sri Vani Print & Pack, 7-1-282/C/44 & 55, Balkampet, Hyderabad - 18. Ph. 23815691.



# HAM NEWS

Vol 15 Issue 6

INDIA'S LEADING JOURNAL ON AMATEUR RADIO

September 2004



Mrs. D.Bharathi Prasad with students undergoing Ham Radio training at Delhi Public School, R.K.Puram, New Delhi .

Excerpts from  
**Employment News:- (14-20 August, 2004)**  
Column: Science & Tech  
**Rajiv Gandhi: His Contribution to world Peace & Harmony**  
Rajiv Gandhi was a keen Ham Radio enthusiast. Being a Ham himself, he was devoted to the promotion of Ham Radio. He had allocated resources for the spread and training in ham Radio operations through selected institutions. His interest in ham radio popularized amateur radio activities in India.



Lieutenant General Davinder Kumar, VSM Bar, Signal Officer-in-Chief in the center. Mr. S.Suri, VU2MY, Chairman & Director & Mrs.Bharathi Prasad, VU2RBI, Chief Co-ordinator, NIAR are also seen.

Mr.S.Suri, VU2MY & Mrs.Bharathi Prasad,VU2RBI called on Lieutenant General Davinder Kumar, VSM Bar, Signal Officer-in-Chief at Army Headquarters, New Delhi in the third week of August, 2004. Mr. Suri thanked the officers of Indian Army for their continuous support and encouragement in popularising the activity among various divisions of Indian Armed forces and particularly through RIDGE Amateur Radio Club. He also explained about the ongoing project on Establishing Amateur Radio Centers sponsored by Dept of Information Technology, Govt of India and latest developments in Amateur Radio.

Published in "HT Lucknow Live" Suppliment of the Hindustan Times Lucknow on 19th August, 2004

## Radioactivity: Ham network in city soon

**Rajesh Kumar Singh**

THERE's NEWS for radio fans, Soon, Lucknow is going to have its own network of ham radio operators.

Ham radio operators use two-way radio stations from their homes to make friends in their town, country and around the world. They communication with each other using voice, computers and Morse Code. Hams use satellites and exchange pictures of each other using the television!

The same setup and network of ham radios could be used as second line of communication if god forbid, some disaster like floods or earthquake wreck havoc in the city and neighbouring areas.

The representative of National Institute of Amateur Radio (NIAR) said Lucknow is one of the ten cities in the country selected for establishment of HAM radio station. The premises of the UP Academy of Administration and Management (UPPAM) have been selected for the establishment

of HAM Radio center. Training would be imparted to the individuals to create pool of amateur radio operators in the state.

The special secretary, Housing & Urban Planning Department, Sanjay Bhoosreddy told *HT Lucknow Live* that during natural calamities communication lines are disrupted and response time is crucial for rescue operations. In such instances, ham networks provide secondary channel of communication. During the

earthquake in Gujarat and cyclone in Orissa, ham radio operators played a crucial role in maintaining communication with the rest of the country.

Bhoosreddy said a network of ham stations should be set up all over Uttar Pradesh as several areas in the state are prone to natural calamities. The ham radio station could be used for disaster management during emergencies. NIAR representatives have been directed to submit a proposal for the network, he said.

## NIAR - PROJECT ACTIVITIES



Students of Govt. Polytechnic College, Masab Tank Hyderabad participating in the Awareness Program conducted by NIAR.

Amateur Radio Awareness program was conducted at Govt. Polytechnic College, Masabtank, Hyderabad on 7th August, 2004. Mr.S.Suri VU2MY, Founder, Chairman & Director, NIAR gave a Presentation cum live demonstration, Ham a Global Friend - A film by NIAR was shown with a live demonstration of Echolink communication by Mr.S.B.Ram VU2LIC, Addl. Director, NIAR. Students interacted with GB3DX-Repeater (Mr.Peter G4KQU). Mr.Jose VU2JOS, Mr.P.Ramakrishna Rao, Mr.R.Sarath Babu VU3RSB, Mr.K.Prasanth S.W.L. also co-ordinated the program.

Training programme was started in two batches on 9th August 2004 at Govt. Polytechnic College, Masab Tank. 108 students registered for free training programme.

St.Mary's College of Engineering & Technology's Dept of Computer Science organised "AGOGOS 2K4" at Deshmukh, Nalgonda. Shri S.Suri, VU2MY, Founder, Chairman & Director was chief guest to the validity function on 12th August, 2004 and addressed hundreds of students from various colleges in Andhra Pradesh.

Students of IIIrd year ECE Students with staff members of Sasuri Institute of Engineering & Information Technology, Vijayamangalam, Erode Tamilnadu visited NIAR Hq as part of their Industrial tour on 16th August, 2004. Ham A Gloabl Friend - A film was shown followed by Echolink Demonstration, HF / VHF / Digital modes of Communication. Mr.S.B.Ram, VU2LIC gave a lecture cum presentation, Mr.Jose, VU2JOS, Mr.P.Ramakrishna Rao, Mr.R.Sarath Babu, VU3RSB & Ms.Jayamma, VU2JMA also co-ordinated and interacted with them.

Ham Radio Awareness Program cum live demonstration by Mr.S.B.Ram, VU2LIC was given at the Training Program for Resource Persons to develop volunteers for Disaster Mitigation from 16th - 19th August, 2004 Catalyzed & Supported by Rashtriya Viyan Evam Prodyogiki Sanchar Parishad (RVSP) Department of Science & Technology (DST), Govt of India, New Delhi and organised by Andhra Pradesh State Council of Science & Technology (APCOST). Mr.R.Sarath Babu, VU3RSB & Mr.T.Srinivas co-ordinated the program.



Students of Kendriya Vidyalaya, New Delhi participating in the Awareness Programme. Mrs. D.Bharathi Prasad VU2RBI conducted the activity which included live demonstration and lecture on Amateur Radio.

### FREE TRAINING- 4th-8th October 2004

National Institute of Amateur Radio is organising a free training program to radio amateurs interested in learning latest Digital and Visual amateur radio communication technologies at Hyderabad.

Interested Hams may contact Admn. Officer, NIAR and register their names to the above said training. Hams may also register their names over Phone/Fax/Email to NIAR.

Accommodation: Dormitory accomodation can be provided to Hams registered for training upon written request on First Come First Serve basis.

## Indian Institute of Hams Activities Report

**INDEPENDENCE DAY CELEBRATIONS AT IIH:** 15<sup>th</sup> August 2004 - Independence Day was Celebrated at the institute premises, Sree Kanteerava Outdoor Stadium, Bangalore. Chief Guest Mr Rajesh Ramanath, Famous Music Director, Kannada Film Industry hoisted the National Flag. Mr Madhu Bangarappa, VU2SLW, Director & Trustee-IIH presided over the function. Mr Shankar, VU3VSD welcomed the gathering. Mr Soma, VU2RO gave a brief talk on Independence Day. Mr Rajesh Ramanath who is also a engineering graduate from electronics and telecommunication emphasized on technical developments by hams and said that students should get Ham licence and take up this hobby seriously for technical developments and new innovations. Mr Rajesh assured that he will also join the Ham family and it is his long desire. Mr Madhu Bangrappa said he is again back on the HF and VHF band after a long time and assured of all support to IIH. Mr Ismail, VU2QNY speaking on the occasion said Mr Rajesh Ramanath entertains people by composing music but Hams communicate to another by using morse code which is also a music. Sathyapal, VU2FI before delivering vote of thanks said intensive programmes on Ham demonstration and lectures need to be conducted to create more awareness amongst the people specially in educational institutions. Sweets & High tea was served to all 74 Hams and SWLs who attended this Programme.

**ASOC EXAMINATION:** 44 Candidates will be taking up ASOC examination on 4<sup>th</sup> September 2004, Centre: IIH, Sree Kanteerava Outdoor Stadium, Bangalore.

**NEW IIH WEBSITE LAUNCHED :** [www.indianhams.com](http://www.indianhams.com)

**HAM DEMONSTRATION:** HAM demo was arranged at IIH on 28<sup>th</sup> August 2004. Mr Atanu Dasgupta, VU2ATN working as Addl. General Manager (Telecom), M/S: Power Grid Corporation of India Limited. Government of India Enterprises, Bangalore gave interesting talk on history of Ham and role of ham radio in todays scenario. *Thanks to NIAR for sparing H.F. rig for demonstrations.*

**IIH ECHO LINK STATION:** IIH has setup a echo link station, right now, it is on a dial up net work. It will be QRV between 2200 hrs - 2230 hrs daily and on Sundays between 0800 hrs to 0900 hrs. *Thanks to NIAR for sparing VHF 2 mtr Base and interface.*

**CALLBOOK & CD - "Directory of Amateur Radio Operators in India"** - IIH for the second time will be publishing CALLBOOK and CD shortly. Hams are requested to send the details : Call sign, Licence no, Name, address, Morning and Home QTH phone nos and Email ID to INDIAN INSTITUTE OF HAMS, POST BOX NO. 1927, BANGALORE-560 019 or email to : [indianham@yahoo.com](mailto:indianham@yahoo.com)

To print required number of copies, IIH appeals to all the Hams to reserve their copy by sending demand draft favouring INDIAN INSTITUTE OF HAMS, BANGALORE for Rs. 250.00 (Callbook Rs.150/- + CD Rs. 50/- + Postage Rs.50).

Demand draft to be posted to : Mr S.Sathyapal, Director, Indian Institute of Hams, No.42, III Main, Maruthi Housing Layout, Vasanthapura, Bangalore-560 061. Phone: 98441-73564.

## VU2RG Awards announced by NIAR

VU2RG Awards will be presented to any National / International, individual Radio Amateurs / Amateur Radio Organisations for their excellence in Social Work /Emergency Services/Awareness/ Training /Homebrew/Forums etc.

The work carried on between 20th August, 2004 to 31<sup>st</sup> July, 2005 will be considered for these awards. The award applications must be submitted with proper proof / documentation and must reach by August 15, 2005. A Committee will scrutinize the entries and announce the Awards. These awards will be given at an appropriate function on Shri Rajiv Gandhi's 61st Birthday on 20th August, 2005.

Given Below is an entry form that can be used as model for award application.

With best wishes,  
Jose Jacob, VU2JOS  
Convener, Awards Committee, NIAR

### Entry Form for VU2RG Awards

1. Name of individual / organisation:  
Brief description of Club / Institute activities  
Club / Institute registration particulars if any
2. Callsign :
3. Address :  
Email :  
Tel.Nos. :
4. Please furnish details of various activities from August 20, 2004 to July 31, 2005.
  - a. Contacts in different modes/bands
  - b. Demonstrations / Exhibitions / Awareness Programs / Presentations etc.
  - c. Amateur Radio Classes / Examinations
  - d. Field Days
  - e. Details of Publications / newsletters / study material etc. broughtout
  - f. Technical developments in Homebrewing / innovations/latest techniques etc.
  - g. Fox Hunt
  - h. Conventions / club meetings
  - i. Contests
  - j. Relief activities
  - k. DX-peditions
  - l. QSL Bureaus
  - m. Organising / Conducting nets
  - n. Awards received
  - o. Any other activities

Sufficient proof / documentation must be sent along with the above details. The entries must reach NIAR by August 15, 2005 and must be sent to:

The Convener  
VU2RG Awards Committee  
c/o National Institute of Amateur Radio  
Raj Bhavan Road, Somajiguda  
Hyderabad 500082, India

### Extracts from Report on Disaster Communication Mock Exercise carried out by Ham Radio Operators in Delhi

Immediately after receiving the information from the Delhi Disaster Management Authority (Govt. of NCT of Delhi) about an Earthquake (mock) hitting the North East District of Delhi, four teams of ham radio operators (volunteers) from various corners of Delhi (Rohini, Janakpuri, Vasant Kunj and Mayur Vihar) rushed to the different critical locations for establishing emergency wireless communication links. Assuming that all other conventional modes of communications were either clogged or completely disrupted, four (4) ham radio stations were established. The stations were established at the Office of the Delhi Disaster Management Authority, Divisional Commissioner's office, Police HQ, Office of the Deputy Commissioner of Police (DCP)-North East district and the Deputy Commissioner (North East District)'s office.

Shri R. Narayanaswami, Principal Secretary (Home) came to the mock disaster site to take an account of the situation. While visiting the ham radio station at the DC's office, Shri R. Narayanaswami expressed his feeling that ham radio operators can play a very important role in disaster communication. He wished that the concerned authorities should have the names & addresses of all the active ham radio operators in Delhi, so that they can be contacted in the event of a real disaster.

Shri S.K. Jha, ADM from the Divisional Commissioner's Office also visited the ham radio facility at DC's office and expressed his satisfaction at the functioning of the radio amateur's wireless emergency communication system in the mock disaster exercise on August 04, 2004.

The hams who have participated in the exercise are: Sandeep Baruah (VU2MUE), Sunil U.K. (VU2UKR), Sreekumar T.K. (VU2OB), Rajesh Bakshi (VU3FUN), Shri Rahul Srivastava (VU3WJM, QTH: Lucknow), Shri Karan Bakshi (VU3GTF), Shri Rajiv Kumar (VU2VTH), Shri Raman C.K. (VU3DJQ), Shri T.M. Jaison, (VU2JIO), Ashok Kumar Sapra (VU3AKW), B.P. Arun (VU3BPA) and Shri Kapil Tripathi (VU3POF)

### Bangladesh Amateur Radio League Executive Committee

An election of the office bearers of Bangladesh Amateur Radio League (BARL) was held on 6<sup>th</sup> August 2004 in the conference room of Press Institute of Bangladesh, Dhaka.

The names of the candidates who were elected are given below

Mr.Sharif Ahmed, S21AS  
**President**

Mr.Abdur Rashid, S21AR  
**Vice President**

Mr.Anwar Islam, S21L  
**Vice President**

Mr.Manjurul Haque, S21AM  
**General Secretary**

Mr.Belayet Hossain Robin, S21RB  
**Assistant General Secretary**

Mr.D M Hemayet, S21DM  
**Treasurer**

#### Members

Mr.Liaquat Ali Mollah, S21V

Mr.M Ashraf Khan, S21HA

Mr.Imran Ahmed Pollen, S21P

Mr.Saiful Huda, S21SH

### Bangladesh - Echolink Station

Bangladesh Amateur Radio League connected their Dhaka repeater to Echolink through Mr.Belayet Hossain Robin, S21RB,'s Echolink Link Station and the details as follows:-

Node Call Sign	: S21RB - L
Echolink Node Numer	: 68569
Internet Connectivity	: 64 KBPS (24/7)
VHF Equipment	: Alinco DJ-196
Echolink Interface	: NIAR Interface prototype
Computer	: Pentium II PC 128MB Ram

## HAM TV FUN AND INEXPENSIVE!

### What is Amateur Television?

Amateur Television is fun and can be inexpensive. But like any part of the ham radio hobby, you can spend about as much as you care to. There is always that other piece of equipment that will make the TV Station Ham Shack really neat. So you can start small and grow as the \$\$\$ permit.



ATV from a hang glider

Amateur Television is REAL LIVE TV! Just like the television that you watch on your TV at home, you can make your own broadcasts to other hams, to show off your ham shack, your latest project that you have built, your beautiful wife (handsome husband), your puppy doing tricks, or just about anything, within the ham radio rules and regulations that you might want to broadcast. One of the special items that we can do as hams is to rebroadcast the NASA channel that is available on "C" band satellite receivers as a free program, and also now available on some of the smaller dish services as well.



W8ZCF working DX with ATV

Since ATV is allowed only on frequencies above 420 MHz, you can not make the pictures "skip" around the world, so your transmissions will be pretty much line of sight. However, during a band opening, you can work other ATV'ers that are hundreds of miles away. DX ATV can be lots of fun, but have the VCR ready to record those long distance contacts! Then you can take them to the next radio club meeting to show others how it works. 500-mile contacts are not that uncommon, and more than 1000 miles has been done several times. ATV has even been sent back and forth to a space shuttle, on mission STS 37! I'm willing to bet there will be more shuttle missions in the future with ATV and maybe on the International Space Station. Personally, I can't wait.

Portable and mobile operation are easy, just do not watch ATV while you are driving! Ham TV operators have found how easy and fun it is to operate in a variety of ways including hot air balloons, helium balloons, kites, cars, trucks, trains, planes, gliders, back packs, canoes, boats, ships, mountain tops, and ATV Repeaters. Seeing DX from a 1-watt transmitter at 110,000 feet up in the air will allow stations to see live video from a camera hung under a helium balloon for up to 500 miles in any direction. Many Hams are using



R/C control plane with ATV camera

ATV for valuable public service assistance. Disaster scene information can be sent back to public safety officials, parades, athletic events, boating contests, and marathons.

If R/C control also has your interest, why not put your Ham TV in your R/C plane, helicopter, or boat and fly from the pilot's seat. Add real adventure to your earth bound self as your vehicle takes you to places that you cannot go yourself.

If you like to build things yourself, ATV is one place where you can have fun as there are lots of articles in Amateur Television Quarterly (ATVQ) to help you along. Projects range from small to large, so take your pick and get started. We sell many past issues of ATVQ due to the quality of the articles that have been published. As this is written, ATVQ



View of landing area from R/C airplane

copies are still available from 1994 to present. ATVQ is also available on CD-ROM in Acrobat PDF format, so even the older issues can still be acquired. We keep an index of all articles from day one on our web site, <http://www.hampubs.com>, so if you are looking for a special subject you can search for it very easily. We do not provide this in paper form as it is around 80 pages of information.



Using the Basic Stamp with ATV

So ATV is a lot of fun. All you need is your Ham License and the desire to have fun. The following pages will give you a little more insight on how to get started.

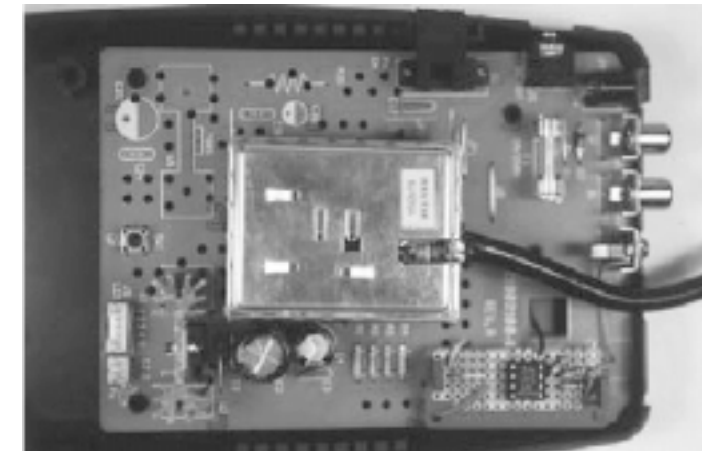
#### What is Slow Scan TV and how is it different?

Many people that I talk to think that Slow Scan TV (SSTV)

is the same as Fast Scan TV (ATV), but they are very different. SSTV is a method of sending still pictures that are converted to sound through your microphone connection on your transmitter. Since it is just an audio frequency, it can be broadcast on the HF bands and pictures can be sent all around the world. Fast Scan TV is a very wide bandwidth,

which allows you to see people/things live with motion, and is only allowed on 420 MHz and above.

#### What do you need to get started in ATV?



Inside of a WaveComm transmitter for inexpensive ATV on 2.4 GHz

Since ATV is used on frequencies from 420 MHz and higher, all Amateur Radio operators can participate, regardless of the class of license. By convention and agreement, ATV is operated on set frequencies.

The popular frequencies are 439.25, 434.00, 426.25, 421.25, 910.25, 1253.25, 1265.00, and 1289.25 MHz. In the last few years, there is also increased activity on 2.4 GHz (due to the low price of WaveComm transmitter / receivers) and also on 10 GHz. By far the most popular is 439.25 MHz and in the southeast US and Florida 434.00MHz.

ATVQ publishes news of station and repeater operation which includes frequency information. As an example, in southern California, there are 7 ATV repeaters linked together to provide coverage from San Diego, to Los Angeles, to Las Vegas (NV), to Santa Barbara. There are plans to reach San Francisco and Phoenix, AZ. ATV is also on 913.25 MHz and 919.25 MHz. Hams share the 900 MHz band with 6 different radio services, including automatic vehicle location systems, and low power part 15 TV transmitters for home use. These new consumer TV transmitters can provide low cost ham TV exciters/receivers for the band as well as a potential audience.



#### Homemade camera remote position control

One of the most popular bands for ATV is the 420 MHz band. One of the reasons is that the higher frequencies will not give as good a distance. Another is that most people have a receiver in their home already! Cable channels 57 through 60 are on different frequencies than channels 57 through 60 that are broadcast over the air. Therefore if you have a cable ready TV, and connect it to an outside antenna, you can receive ATV as follows:

Channel 57 = 421.25 MHz  
 Channel 58 = 427.25 MHz  
 Channel 59 = 434.00 MHz  
 Channel 60 = 439.25 MHz

It will help to know the polarization that is being used in your area, as you can easily lose 15 db by having the antenna set to the wrong polarization. Most of the 420 MHz ATV is done with horizontal polarization except in the southwest US and Florida where they use mostly vertical.

#### Where do you get information about ATV?

Your best source of information about ATV is Amateur Television Quarterly, as the publication is devoted entirely to ATV, SSTV, and projects. ATVQ contains an assortment of articles and features covering technical topics in both the beginner and advanced flavor, build it projects, station



ID screen of San Francisco ATV Repeater

operations, and repeater news. ATVQ is the ONLY publication devoted to ATV in the US.

There are some European publications that are also very good

such as CQ-TV, VHF Communications, and Der TV Amateur (in German only). The first two can be subscribed to through Harlan Technologies for your convenience or through their web site.



ATV in Munich, Germany

Ham TV can do more than any other mode of operation. It offers all the fun, thrills, excitement, learning opportunities and public service that ham radio offers, plus the added advantage of visual communication.

#### What frequencies are used for Ham TV?

Ham TV, live television that you can watch at home, is mostly on the 420-450 MHz band (70 cm), but there is also activity in the 902-928 MHz band (33 cm), and in the 1240-1300 MHz band (23 cm), in the 2.4 GHz band (13 cm), and also on 10 GHz. 70 CM ACTIVITY Video Carrier Audio Carrier Use Cable TV Channel 439.25 MHz 443.75 MHz Simplex and repeater inputs 60- 439.25 MHz also a few repeater outputs

434.00 MHz 438.50 MHz Simplex and repeater input 59- 433.75 MHz

426.25 MHz 430.75 MHz Repeater output & some inputs 58- 427.25 MHz 421.25 MHz 425.75 MHz Repeater output 57- 421.25 MHz

Since the Cable TV channels are so close in frequency to our ATV frequencies, you can take your cable ready TV, leave it set for Cable, but connect it to an outside antenna instead. If someone is broadcasting ATV in your area, and you have a sensitive input on your TV with a good antenna, you just might see video! Generally, TV sets are not as sensitive as an ATV receiver, but it is one way to get on cheap.

#### What does 144.34 MHz have to do with ATV?

In many areas of the country, ATV'ers use two meters, 144.34 MHz simplex, as the talk frequency. When I go through a city where you know there is ATV activity, I know most of them are monitoring 144.34 MHz and I will give a call. They are usually just waiting for someone to send pictures to!