Amateur RADIO Society News

Newsletter of the Amateur Radio Society of India - VU2ZH
Indian Affiliate of the I.A.R.U
January 2025 issue

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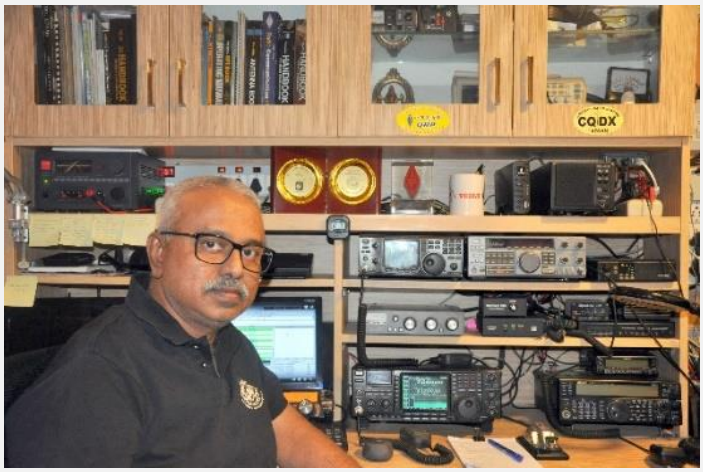
The cover photo – while wishing everyone a happy new year - depicts a "Morse Key" that is used to punch out messages in Morse Code. In the early days of wireless communications, this was the only way of sending and receiving messages over long distances. With the advent of modern modes of communications, the Morse Code is more or less forgotten in the commercial world. Some new comers may not recognize the morse-key! Radio Amateurs were the only ones using morse code for making worldwide contacts, but currently even that number is dwindling. Hallloa! CW is a wonderful mode – continued use needs your support!!
Ed/-

PRESIDENT'S MESSAGE



Looking ahead to another Great Year!

Wishing everyone a Happy New Year!

This year we are celebrating 100 years of the founding of the International Amateur Radio Union. IARU is an international confederation of national organisations that allows a forum for common matters of concern to amateur radio operators worldwide, and collectively represents matters to the International Telecommunication Union (ITU).

IARU today has 172 national member societies, which includes ARSI.

In 1954, the ARSI was formed with its HQ in New Delhi, and A N Banerjee, VU2CZ as the General Secretary. ARSI was accepted as a member of IARU-R3 in July 1958.

I am happy to see new ideas developed and took flight last year. We have successfully completed six contests in the year 2024. We started the monthly webinars which are going great. We're exploring initiatives to enhance member experiences, broaden community outreach, and ensure continued success.

We have already announced the ARSI contest calendar for 2025. So let us make the best out of Solar Cycle 25 which started in early 2020 and reaches its peak in mid 2025.

Thank you for your support to ARSI. Together, let us make 2025 a year to remember!

73, de Ramesh Kumar VU2LU

FROM THE EDITOR'S DESK

A very happy new year to all!

Another year has passed.

In case you are wondering why this issue contains least number of pages, it is because the editor has not been receiving any contributions from members though it is seen from the WhattsApp messages, photos and videos floating around that there is quite a lot of activity going on,HI

Request: This Newsletter is not possible without you! I would like to receive information about amateur radio related activities from Members and Member Societies and clubs to be used as a feeding material and be able to produce this publication. As you have noticed, due to the lack of participation and circulation of information, this valuable resource is slowly grinding to a halt. Please contact the "Editor" if you can assist.

Sending me a copy via e-mail with a couple of attached photographs is so easy. Please do make it a point to post reports on your activities, send photographs and of course, technical articles for publication in the HRN.

Ham Radio Newsletter needs your support!!

73 Ganesh VU2TS

Mobile / Portable station VU2UCR – Hari, Bengaluru

Mobile/portable station VU2UCR – Hari, Bengaluru who is going places with his mobile setup. Ready for deployment to any emergency / disaster management.

QO-100 Satellite communication
YAESU FT-891 HF station
Portable 2 el Yagi on 18' mast
ATLAS motorized screw-driver antenna on bull-bar
YAESU FTM-200 DR VHF/UHF with 5/8 vertical

THE RATTLEGRAM

In the case of a natural disaster like a flood, storm, hurricane, wildfire, etc, mobile phone cell towers can be destroyed. In that scenario, your mobile phone without cell coverage reverts to being a fancy camera with a calculator. Rattlegram allows the user to send short text messages over the radio until full communication is restored.

The Rattlegram can also be used as a simple tool in an scenario where you just want to pass on some basic information like for example - a phone number - to someone.
In conclusion... The purpose of our experiment was to introduce participants of the net to the Rattlegram app and to gain experience of seeing it in use. As with the conclusion of many experiments, it raised for me more questions.

How well will it perform under weak signal conditions on FM or SSB? How far down into the noise will the signal go and still work?

Will it work on the HF bands with multipath? Will it work on a circuit with multiple hops? It's a tool that I'm sure some resourceful operators will find a use for.

Further information... There are plenty of videos on YouTube about Rattlegram or under its older name Ribbit.

Just Google "Rattlegram" for a lot of information and videos on the subject, giving a good overview.

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19th International Amateur Radio Union Region 3 Conference 2024

The IARU Region 3 Conference is held every 3 years. This year, the 19th International Amateur Radio Union Conference was held from 4 November 2024 to 8 November 2024 in Bangkok, Thailand.

The Radio Amateur Society of Thailand under The Royal Patronage of His Majesty The King of Thailand served as a host. The opening of the conference was addressed by: AM. Thanapant Raicharoen, E24PAM, NBTC Commissioner, Government of Thailand, Mr. Mario Maniewicz, Director, Radio Communication Bureau, International Telecommunications Union. Mr. Masanori Kondo, Secretary General, Asia-Pacific Telecommunity. Mr.Timothy Ellam, VE6SH, President, International Amateur Radio Union. A welcome speech was also

given by Mr. Wahyudi Hasbi, YB1PRY, and Mr. Ken Yamamoto, JA1CJP, IARU R3 Chairs. 29 member societies of our region had the opportunity to participate sending one delegate to the triennial conference along with observers.

The purpose of the IARU Region 3 is: -To promote, represent and advance in whatsoever manner IARU Region 3 thinks fit, the interests of Radio Amateurs in all countries of Region 3 of the International Telecommunications Union (and without limiting the generality of the foregoing). 19th International Amateur Radio Union Region 3 Conference 2024 By IARU Region 3 -By the furtherance of the objectives of the International Amateur Radio Union and having regard to the special interest of radio amateurs in Asia and Oceania which interests are to protect and enhance radio amateur privileges in all of the countries in the Region.

-To encourage an awareness of the value of radio amateurs by the administrations of all the countries in the Region.

-To educate and encourage potential radio amateurs in all of the countries of the Region.

-To represent radio amateurs both nationally and internationally.

-To protect and retain amateur radio frequency allocation as frequencies allocated for the sole use of radio amateurs.

HAMFEST INDIA 2024 was held in Kolkata between 14th and 15th December 2024, an event which saw more than 400 delegates get together.

ISRO LAUNCHES AMATEUR SATELLITE BGS ARPIT

BGS ARPIT was developed by the SJC Institute of Technology in Chickballapur, Karnataka, and launched by ISRO in December 2024. BGS ARPIT is a space-based educational outreach program that supports the growth of startups and fosters innovation among students. It is a satellite payload that transmits audio, text, and images BGS ARPIT enables students and researchers to experiment with space-based communication systems. ARPIT stands for *AMATEUR RADIO PAYLOAD FOR INFORMATION TRANSMISSION.*

BGS ARPIT uses FM modulation and the VHF band to transmit data from satellites to Earth. It is integrated into the POEM-4 (PS4 Orbital Experimental Module) platform of the PSLV-C60 rocket.

This Payload was jointly developed by SJCIT college of Engineering , Upagraha Amateur Radio club at ISRO and AMSAT INDIA. The payload is bolted to the last stage of the PSLV rocket called PS4 orbital Experimental module platform (POEM 4)

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According to reports in the media, ARPIT is one of the 24 payloads on board PSLV and has the potential to revolutionize the way we interact with space. Eventually, it will enable citizens to connect via satellites and engage in communications using "chat", audio, video, and share photographs..

Below is the sequence for BGSARPIT Payload

Audio Message for 45 seconds on 145.870 Mhz

NFM 1 minute silence during which payload will switch to APRS- 145.825 Mhz,

Users can Digipeat Telemetry 1 - "Greetings from BGSARPIT Payload"

Telemetry 2 - Health Parameters over AX.25, 1200 baud indicationg Voltage, Current, and the Temperature of the Payload.

SSTV Images (10) transmission starts on 145.870 Mhz , First Image PD120, Seccond on Robot 72 and alternating. This sequence is programmed to continue for 15 minutes whenever BGSARPIT payload is turned ON by ISRO.

DLARC Digital Library on Line

Digital Library of Amateur Radio and Communications is a free online library devoted to ham radio, shortwave listening, college radio, and early communications. DLARC is funded by a significant grant from *Amateur Radio Digital Communications* - a private foundation, to create a digital library that documents, preserves, and provides open access to the history of this community.

DLARC contains more than 140,000 items of radio history — newsletters, magazines, conference archives, books, audio and video. The mission is to provide Universal Access to All Knowledge.

https://archive.org/about/

Is an EFHW Antenna Truly Multiband?
By John VA3KOT

A fierce debate rages on one of the online forums I read. Is an End-Fed Half-Wave (EFHW) truly a multiband antenna? By "multiband" I mean resonant on even harmonics without a tuner. The most vocal posters in that forum keenly disparage these popular antennas despite their popularity.

Resonant on every band, earn DXCC in a single day!

It is possible to blow away a lot of money buying a commercial version of the EFHW for which vendors sometimes paint glamorous images of their product's features and capabilities. That is one of the reasons the curmudgeonly forum folk like to open fire with their high caliber keyboard ammunition. They take shots at the popular broadband 49:1 impedance transformer, but reserve their most powerful ordnance for any claim of "multiband" performance.

Thousands of hams must be wrong

Strangely, many hams have used an EFHW with great success. It is a particularly popular antenna among SOTA and POTA activators. It only requires a single support structure; Canada has 300 billion environmentally friendly arboreal support structures available. An EFHW can be fed close to the ground because the feedpoint

is a high voltage, low current point. A very short coax feedline can be used, or no feedline at all in fact. Some QRP operators don't use any kind of counterpoise although a wire stub 0.05 wavelengths long is recommended – especially where no coax feedline is used.

"Ham Radio Outside the Box" decided to investigate whether an EFHW antenna is truly a tunerless multiband antenna. We were surprised by the results. The full test report with charts is available here:

https://hamradiooutsidethebox.ca/2025/01/08/is-an-efhw-antenna-truly-multiband/?utm_source=amateur-radio-weekly&utm_medium=email&utm_campaign=newsletter

You must've heard that CQ Magazine is no more. Looks like there's been some major confusion swirling around! CQ Magazine is still in business. They recently experienced some delays in their print subscriptions, but they are working to get things back on track. So the news of the demise of CQ magazine is greatly exaggerated.

MFJ has closed its shutters. After over five decades of service, MFJ Enterprises, a leading manufacturer of ham radio accessories, in the U.S. has announced the cessation of production. The founder, Martin F. Jue, who turns 80 this year, made the difficult decision partly due to the significant impact the COVID pandemic had on the business.
However, it's important to note that MFJ will continue to sell existing inventory and provide support for their products. This means you can still get your hands on some of their iconic ham radio gear!

160 years of ITU

The International Telecommunication Union (ITU) celebrates its 160th anniversary in 2025. Throughout the year, we will continue mobilizing governments and industry to connect the unconnected, fast-track sustainable digital development, and empower people to use digital technologies to drive meaningful change.

Check out our 160th anniversary website

Celebrate with us **Play our Happy New Year video**

Predicting earthquakes hours in advance - by radio

A novel earthquake prediction system will use "ionosondes" – ionospheric measuring stations – in different locations in the state of California USA. The FCC licensed this experiment as WY9XKB, in ten high-frequency HF bands.

Ionoterra US Survey LLC said, "In theoretical scientific research conducted by our CTO Prof. Nathan Blunstein for three decades, he proved that earthquakes can be predicted by a set of certain phenomena in the ionosphere measured algorithmically hours before the earthquake using several ionosondes arranged in a certain configuration.

"In an initial limited proof of concept we conducted back in 2019, we showed that we can predict earthquakes hours in advance. Last year we obtained a patent for our technology in the US and in Japan.

"We have proposed Los Angeles as the location of our research because Los Angeles is prone to earthquakes with 82 reported earthquakes of 3 and above magnitude during 2023. Our proposed research, which will be conducted together with the Civil and Environmental Engineering department at UCLA, is developing the ability to predict earthquakes hours in advance, and will provide the opportunity to react and prepare in a timely manner in order to evacuate the population (buildings, schools, etc.), cut off gas and electricity, warn and stop trains, airports, bridges and tunnels [and] initiate emergency protocols at nuclear facilities."

The invention is based on the discovery that the ionosphere becomes more inhomogeneous above the epicenter in the 12 to 16 hours before the earthquake. The inhomogeneities are believed to be produced by acoustic-gravity waves associated with the buildup of strain in the Earth's crust.

You want to watch the video:

https://youtu.be/uRun46OWjDM

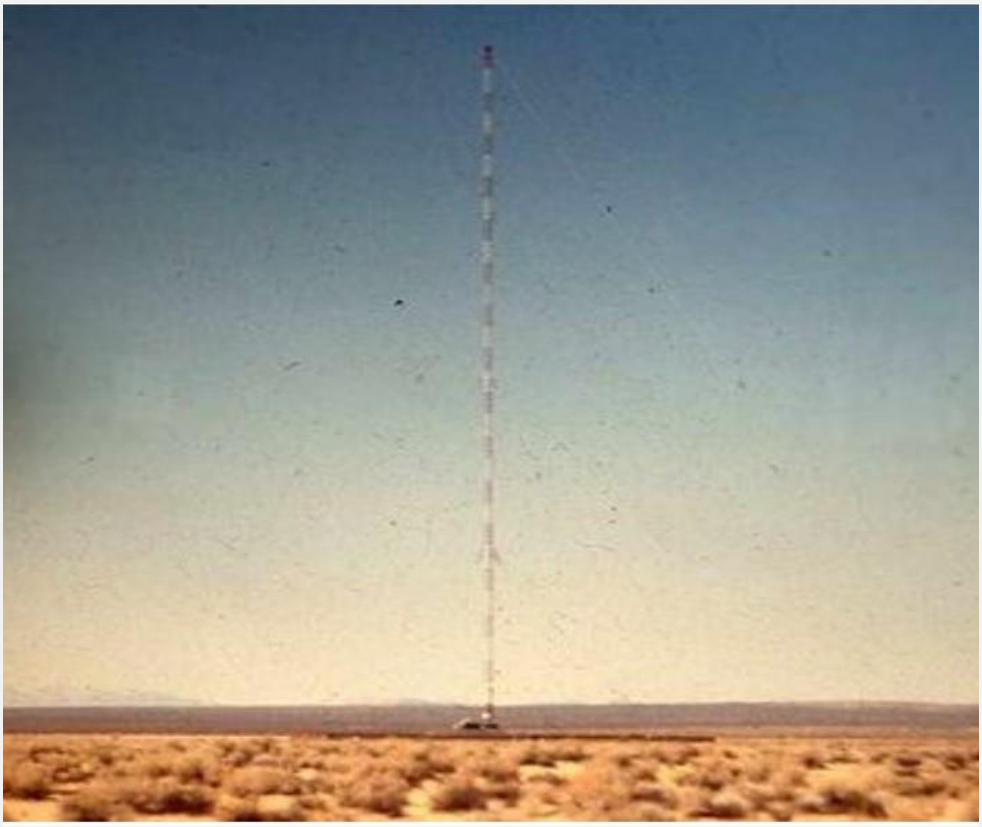
Vertical Antenna 1,226 feet tall

Created by Paul Signorelli, WØRW on 2024-12-10

Ref: https://skyscraperpage.com/diagrams/?compare=63081

Vertical Antenna ALMOST as Tall as the Empire State Building! The US Air Force 487L program, *(Also known as the Survivable Low Frequency Communications System),* built two Low Frequency ground stations in 1965, one at Hawes (near Barstow), California and one at Silver Creek, Nebraska.

Hawes was an old, abandoned airfield used in WW2. This is in the middle of the Mojave Desert and has nice warm weather in the summer.



The vertical antenna was made up of about one million pounds of stainless steel and was 1226 feet high. That is about the same height as the Empire State Building, New York - which is 1250 feet in height.

It would be great if I could hook it up for 160 meters!! Ed/

HAVE YOU HEARD OF THE "GOOD WATCH"?

This is from *KK4VCZ -Travis Goodspeed of Knoxville, Tennessee USA*

The GoodWatch is my replacement circuit board for Casio's modern calculator watches, adding support for 70cm and 33cm amateur bands while retaining three years of battery life and most of the watch's features. It uses the CC430F6147 chip from Texas Instruments, and the watchband forms an untuned random wire antenna. Source code and CAD files are available on the GoodWatch github repo and documentation is available in the GoodWatch wiki

Of interest to hams is the POCSAG Receiver applet, which receives 2FSK 1200baud packages from the DAPNET project.

There is also a Frequency Counter, which helps to quickly identify the frequency of a nearby transmitter without extra equipment. Shown in this photograph, I used my GoodWatch to find the frequency of a walkie talkie that I imported from China, then confirmed its guess by tuning my Kenwood TH-D74 to the correct channel, which was just 50kHz off from the guess.

CW modulation from the radio transmitter was a piece of cake, and the watch will beep the time in Morse if you hold the + key.

Internally, the radio is programmed in C around the RF430 chip's CC1100 core. Phase shift keying and LoRa modulations are not possible with this radio, but any 2FSK or even 4FSK modulation should be possible to implement with a bit of clever work and the right test equipment. A nice guide for writing OOK Transmitters is available to get you started.

NCDXF/IARU International Beacon Project

Each beacon transmits once on each band once every three minutes, 24 hours a day.

A transmission consists of the callsign of the beacon sent at 22 words per minute followed by four one-second dashes.

The callsign and the first dash are sent at 100 watts. The remaining dashes are sent at 10 watts, 1 watt and 100 milliwatts.

At the end of each 10 second transmission, the beacon steps to the next higher band and the next beacon in the sequence begins transmitting.

Full details and list of frequencies:

https://www.ncdxf.org/beacon/index.html?utm_source=amateur-radio-weekly&utm_medium=email&utm_campaign=newsletter

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