

Newsletter of the Amateur Radio Society of India - VU2ZH Indian Affiliate of the I.A.R.U April 2024 issue



The six-band Hex-beam at AT3N – portable station during ARSI Field Day & Hill Topping contest 2024

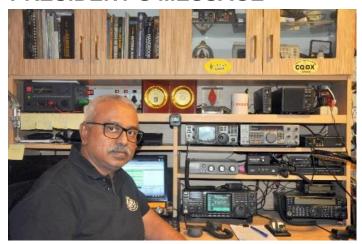


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PRESIDENT'S MESSAGE



Amateur Radio in India - A New Age

We see a positive change in the Amateur Radio activities in this decade.

It has never been so easy to own a new radio or an accessory, as a variety of brands are offered by local businesses which we can buy with local currency.

Every weekend we see someone activating a park, a summit or a beach. Radio Amateurs have been trying new antennas such as the phased vertical array or the EFHW and more, on these weekend expeditions.

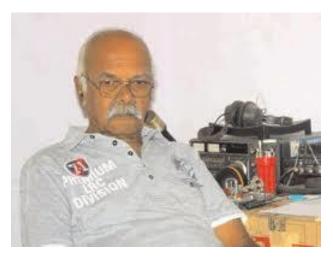
This year, there was a tremendous response to the ARSI National Field Day & Hill Topping Contest with close to eighty entries. There is buzzing activity on *WhatsApp* groups about building antennas or homebrewing radios or accessories. Though the numbers are not too high, there is a slow increase in VU participation in international contests. So, I see that we are taking the full advantage of this solar cycle and the new technologies and operating modes that have come by.

ARSI has a packed contest calendar for this year, with at least one contest every two months. So this gives us a chance to sharpen our CW and voice operating skills, to keep our radios and antenna in shape and to motivate ourselves to be on air. So let's see you all on the air soon!

73, de Ramesh Kumar VU2LU



From the Editor's Desk



Greetings to all!

This issue of HRN is something different. Yes – it is 30 pages – but with only 2 articles – both of members' teams participating in the ARSI Field Day and Hill Topping contest 2024. I hear there were close to 80 teams participating, but only two teams were kind enough to forward reports and photographs. So - you will find the reports with all the photographs published in this issue. Members who plan to participate in the next contest would find the reports very interesting and informative – especially the kind of planning, distribution of work, choice of location, and the operation involved to make the contest a success.

Congratulations to team AT3N who were placed first in Category-C of the contest and thanks for forwarding a detailed report of your field day activity.

Solar activity is revving up – with more sunspots and solar storms as we are nearing the peak of the solar cycle. However, solar Cycle 25 is forecast to be a fairly weak cycle, of the same strength as cycle 24. Solar maximum is expected in July 2025, with a peak of 115 sunspots.

As I am writing this, band conditions on the 30,20,17 and 15 meter bands seem to be good with nothing on the lower or higher bands. Night time conditions are good on the 40 meter band.

Let's hope the rest of the year will see some good band openings.

73 - de VU2TS - Ganesh



Amateur Radio Society of India

Contest Calendar - 2024



DATES	CONTEST NAME	BANDS	MODES
27 - 28 JAN 2024	ARSI NATIONAL FIELD DAY & HILL TOPPING CONTEST Focus on Field Operations	HF, VHF & UHF	CW Telephony, Digital, Mixed & QRP
6 - 7 APR 2024	ARSI 40M CQ VU SSB CONTEST Focus on 40m SSB Activity	40M	SSB
27 - 28 APR 2024	VU ROOKIE CONTEST Focus on Introducing Newbies to Contesting	HF - 40, 20, 15 & 10 M	CW, SSB, Digital & Mixed
29 - 30 JUN 2024	ARSI QRP-DAY CONTEST Focus on QRP Operations	HF	CW, SSB & Digital
24 - 25 AUG 2024	VU DX CONTEST Geographic Focus on India	HF - 40, 20, 15 & 10 M	CW, SSB & Mixed
7 - 8 DEC 2024	ARSI 40M CQ VU CW CONTEST Focus on 40M CW Activity	40M	cw

COMPLETE DETAILS REGARDING THE CONTEST WILL BE ANNOUNCED ON WWW.ARSI.INFO

AMATEUR RADIO SOCIETY OF INDIA

Member Society of the International Amateur Radio Union - Region 3 since 1958

The National Association for Radio Amateurs in India since 1954

Website: www.arsi.info Email: secretary@arsi.info Club Station: VU2ZH



THE ARSI NATIONAL FIELD DAY & HILL-TOPPING CONTEST 2024

A report from the team AT3N – MK80IM – Nelliyampathy Kerala.

Altitude above mean sea level 1,380 meters

THE INITIATING CALL FROM JACOB VU2ADV

Every exhilarating activity undertaken by this energetic team of Radio Amateurs typically commences with a phone call from OM Jacob, VU2ADV. In 2023, the decision to participate in the ARSI contest was instigated by Jacob's call to OM Girish, VU2KGB.

Girish is renowned for his inability to decline such challenges, a fact well known to Jacob. The third individual always ready to heed the call is OM Peter, VU2PJP, who is backed by his two adept technical progenies, Rakesh VU3RGP and Ajith VU2EMX.

Peter's unwavering support comes from Rejeesh VU3FWR, as well as SWLs Mahilal, Akhil, and Pradeep, ensuring no room for failure. OM Manoj, VU2DTH, eagerly tackles any radio challenge, particularly those posed by rugged terrains.

Nevertheless, the team is acutely aware that for HF contests, our seasoned Leader must take charge. As witnessed in 2023, a mere call from Girish was sufficient to rouse OM Manoj, VU2CPL, who promptly responded with an enthusiastic YES!













The team **AT3N** already had a successful contest participation in Category C (HF/VHF/ UHF) in February 2023 from Kulamavu in Idukki District, Kerala - in which the same team was declared by ARSI as the winning team. The learning from this event helped the team to plan in advance and start preparations for the 2024 event.

As usual, location was the first question. There was initially a plan to go to the same location in Idukki and accordingly, we had blocked rooms for the contest dates. However, during the evening discussions on the *WhatsApp group*, the following points came up:

- a) The same location would not impart new challenges and it could become more or less a *repeat* of the 2023 event.
- b) The Kananam resort at Kulamavu, though comfortable, was expensive.

Considering the above, Peter - VU2PJP suggested the Nelliyampathy Minnampara Estate with the following advantages:



- 1) Against the 800 m height of Kananam resort over MSL, the suggested Minnampara Estate in Nelliyampathy would be 1380 m above MSL. This could perhaps offer a better pattern of VHF/UHF openings.
- 2) Though there were challenges in the logistics, with some hard work these could be overcome. As a result, the overall expenditure could be brought down. This suggestion from Peter was acceptable to all. A good location for VHF was required to explore the chances of DX QSOs with A4 or 4S7 lands. Jacob VU2ADV contacted Sangeeth VU2TT and requested to coordinate with A4 stations to explore the possibilities of VHF DX QSOs. Girish VU2KGB prepared a design for a 2 x 5 element broadside stacked array and passed it on to Peter on 24th November to get it fabricated at Coimbatore.



The team continued regular conference calls at 21:00 IST daily to deliberate. Having chosen Nelliyampathy as the location, Manoj VU2CPL completed the required paperwork for the special callsign AT3N. This request was submitted on December 1, 2023. The approval from WPC was received on 13th December 2023.OM Siddhu VU2YYF, Shaji VU2WJ, Adersh VU3WEW were invited to the team to fulfil the HF operating needs.





The plan was to have three HF stations and two VHF and one UHF station. Sangeeth VU2TT also joined the team later. OM Abraham VU2OJ and Easwaran VU2ACT were unable to join the team due to exigencies. The old bungalow at the site had limited facilities and the team planned to get a Chef and food supplies during their drive up the hill.

SWL Mahilal (a retired Police Officer of the Telecommunication wing and an avid trekker) took up the responsibility of all the logistic arrangements and local permissions. He also located the *Chef Sujeesh* who turned out to be a good find and served delicious dishes to the whole team during the span of 5 days. Mahilal was also the expert who guided us through the wilderness to reach the location.





Most of the team members were planning to reach the site on 25th Jan'24 itself so that team could setup the antenna, stations and start operations without any hiccups.

Manoj VU2CPL started from Bangalore with the whole HF setup on 24th Jan and reached Palakkad. Siddhu had a last- minute emergency at his workplace and so had to drop his plans. On 25th Jan morning, Peter, Rakesh, Rajeesh, Mahilal and Akhil along with other SWLs started from Palakkad and Adersh and Shaji started from Kozhikode; the plan was to meet near Pothundi dam. The team members met near Pulayanpara and regrouped to four 4WD vehicles. After a gruelling climb through a very tough road, this team reached the site by 2 pm.

TEAM's LOGISTICS

During the 2023 contest, we used a 2 element multi band cubical quad for HF. Since we had a flat roof there, installation was possible. But for the present Minnampara estate building which has a sloping roof, we preferred the Hex Beam. A Spider-beam and MFJ brand FRP poles were used for installation of a 40m and a 15m verticals. Operations started using own callsigns for the test of the setup.

We realised that 40m vertical can be used on 15m also and hence the 15m vertical was retuned for 10m so that we can run 2 stations on higher bands on HF during the day time. 160m, 80m and 6m operations were ruled out since the contest doesn't give additional points for any operation on these bands which are having rare openings and thus not very productive from a contest point of view.

The DX QSO with a nearby 4S7 versus the far away W lands as fetching the same point, needs a relook by the contest organisers, next time. 50 MHz, being a rare band, should also be given at least higher points like they consider the UHF band to promote any activity on the magic band.



THE HEX BEAM, VERTICALS, AND THE DIPOLE

The Hex beam was a compact antenna to carry. It provided 6 bands without the need for a tuner. The Italian Expert amplifiers handled the Hex comfortably. Other vertical wire antennae were made over the fibreglass telescopic masts.

HF ANTENNA INSTALLATIONS

The team, after a light lunch, got to work and started installing the antennae and stations. By evening, the HF setup was completed. It was decided that the team would use only electronic logs for the contest. A mix of Windows and Mac computers made it a challenging task. But Shaji and Adersh along with Manoj completed the multi-OS logging setup through a local network. The temporary microwave link setup by Rakesh helped to get a basic Internet facility at the site and this helped the team to be in touch with the outside world which would have been difficult since only BSNL and Jio ISPs were occasionally available. Even though Peter was confident about the power quality and availability, we had carried a 5 kVA petrol generator for backup power. Shaji with his expertise helped the stations with a power back up arrangement. A fresh ground rod was installed near the station and tested.

Peter had arranged a three section x 10 foot tower for the hex beam installation. VHF array was prepared and kept ready for Girish to arrive and install.





A Yaesu G450 rotator was used for HF station and a similar rotator for the VHF/ UHF antennae.

VERTICAL ANTENNAE

Peter engaged a few vendors to get the VHF array fabricated as per VU2KGB's design. The hardware was made and delivered to Peter. But there were drilling mistakes due to the wrong interpretation of the drawings. So, we quickly switched to **Plan B.**

An almost similar stacked array built by VU2KGB, 30 years ago was available on the roof top of VU2ADV. This was brought down on 18th January 2024 and refurbished.



The electrical contacts were tested and re-established, the booms were cut in the middle to be joined at the contest premise. VU2TAH gave his home-brew power divider. The array was tested to get an SWR of 1.05:1 and the full set was packed and delivered to Peter on January 23, 2024. This stacked array was installed at the venue on 26th Jan and connected using a 22m long 16 mm diameter *Andrew Heliax* cable. On the contest frequency, it showed an SWR of 1.05:1. For UHF, the 10 element



Diamond Beam of VU2CPL which performed well last year was re-used this time also, along with the RG 213 cable.

ROTATOR FAILURE

After dinner, when we tested, it was noticed that the Yaesu rotator used for the HF Hex beam had stopped working!

We witnessed the strength of our team work during the replacement of the rotator on 27th Jan morning. Manoj, VU2DTH and Mahilal braved the heavy winds and cold weather to climb the HF tower. Rotator was confirmed to be dead and was removed after the hex beam was brought down. While the stand-by rotator was put back, we could see the expert hands of Peter repairing the damaged Yaesu rotator so that we have a standby in case of any further failures. The replacement work was finished just before the contest start time. The contest started at 0330 UTC on 27thJan. Two HF stations and one V/ UHF station started operations with one more VHF rig on standby.

VU2TT AND VU2TAH JOINED

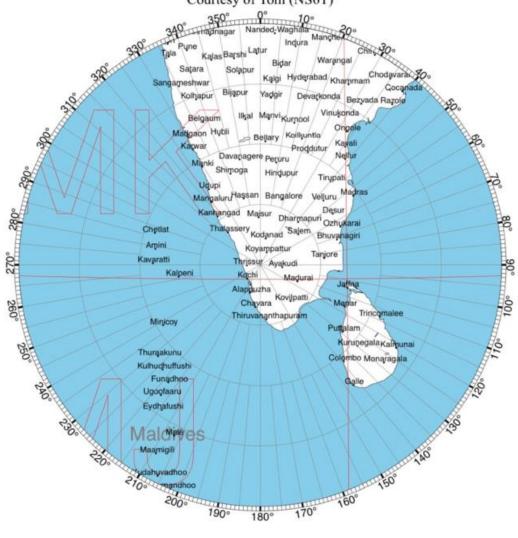
After seeing the videos of our *off-road climb*, Sangeeth who had earlier cancelled his trip, changed his mind and decided to join the team for one day - along with Tahir VU2TAH and another SWL Girish. They reached the location on 27th Jan afternoon and stayed for a day. Sangeeth operated on 15m CW during the afternoon, but QSO rates were disappointing despite reasonable band conditions. Later, QSOs kept pouring in and by the first night itself we were sure we will easily cross our target of 3000 QSOs.

We had kept a slot for 20m SSB for 27th Jan evening, but seeing the QSO rates on 15m and 10m, we decided not to upset the rhythm and skip the SSB operation for the time being. We operated on 40m SSB from 0730 IST to 0830 IST and logged 62 stations during this time. Shaji and Adersh had observed high noise levels on 40m vertical and went about installing an Inverted V for 40m and this proved to be helpful for local SSB QSOs.



AT3N Azimuthal Map

Center: 10°32'16"N 76°43'4"E Radius: 1000 km Courtesy of Tom (NS6T)



BEAM HEADINGS FROM THE CONTEST LOCATION



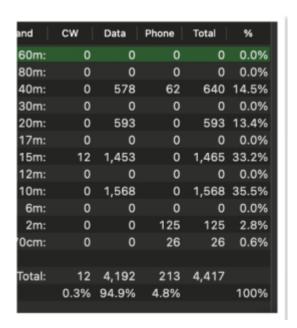
WE CROSSED OUR TARGET!

By the afternoon of 28th Jan we crossed the target of 3000 QSOs and so the goal was revised to achieving 100 DXCCs during the contest. Manoj VU2CPL consolidated the contacts on HF, VHF and UHF and announced the revised total QSO numbers. The team got together around the dining table and had a very useful review session. The learnings from the event were listed which shall be summarised towards the end of this report.

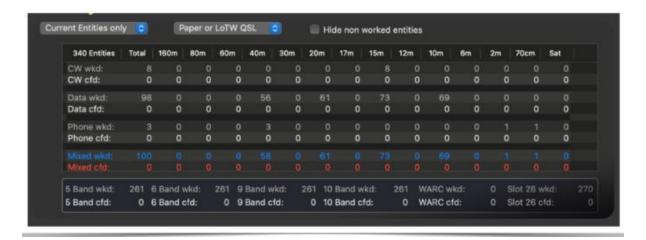
Rakesh and Akhil had set up a central console for managing the Internet and maintenance. Akhil also helped the VHF/ UHF operation at times. This team also supported in correcting the locations in the computer log.

All antennae were dismantled in the evening itself after a short photo session while the light was fading. All equipment were packed and loaded into the cars by 8 pm and the team had a review meeting at 9 pm after a quick shower.

By the evening of 28th Jan, 1800 IST, team finished with the following score.







Even with the limitations at the place of stay, all of us enjoyed the whole event, because of the excellent logistic arrangements made by Peter, Mahilal and Rejeesh. Soon after the contest, we made a quick line-up for a group photo. While we were happy about achieving the targets and more, we were not too happy to leave the beautiful location. After Rahul clicking the group photo, we hurried back to the stations to pack-up and to get ready for the review meeting.





WHAT WORKED, WHAT DIDN'T

The following observations were made during the re-cap:

- 1. Compared to the previous year, the team showed better cohesion during this event. All the team members were fully aligned towards achieving the goal.
- 2. It was a decision taken last year that in future, all the operators will adopt computerised logging. We achieved this goal and went one step further. All the laptops were networked together and the logs were captured on-line and consolidated.
- 3. There was no idle time for the HF stations. We could utilise the full contest period. Since we had sufficient number of skilled operators, proper scheduling was possible.
- 4. It was strongly felt that our preparations for the UHF set up was not enough. We could have used better antennae, better transmission line to avoid losses and the need for an amplifier was also felt.
- **5**. The VHF array performed pretty well. But if a coax switch was placed in the shack, it would have been easy to shift to Omni directional F22 antenna, occasionally. This is surely a take away for improvement next time.
- 6. During the planning stage, we talked about spreading the news in a big way about the AT3N participation. This action was not very effective and needs improvement in future.
- 7. When the microwave link bringing the Internet to the premise failed, the FT8 operations got affected because of the lack of time synchronisation. VU2CPL immediately deployed a home-brew GPS module and the problem was solved.
- 8. Though we made concentrated efforts to establish VHF contacts with Oman and Sri Lanka, these did not yield any results. Contact with A4 was felt possible, but needed better coordination and infrastructure at both the ends.



THE REAL PERFORMERS OF THE AT3N CONTEST

Adersh (VU3WEW) and Shaji (VU2WJ) truly shone this time around. Their unwavering dedication and expertise were indispensable in reaching the DXCC level within a remarkable 33 hours. Under the guidance of Manoj (VU2CPL), these exceptional operators performed admirably, surpassing our previous contest scores. The inclusion of Shaji and Adersh in our team proved instrumental in achieving these scores.

















THE TEAM MEMBERS WHO MADE IT POSSIBLE



VU2CPL



VU3WEW



VU2WJ



VU2TAH



VU2PJP



VU2KKG



VU3WTD



VU2DTH



VU3RGP



MAHILAL



PRADEEP



VU2TT



AKHIL



VU2KGB



VU3FWR



VU2ADV

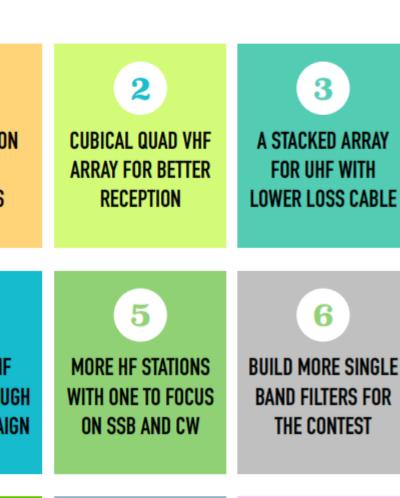
Please see the contest video on: https://youtu.be/Gl1s1tanaWM?si=UTkP1CyV510FTG7I

REPORT COMPILED BY VU2CPL, VU2KGB, VU2KKG



IMPROVEMENTS SUGGESTED FOR FUTURE EVENTS









ARSI National Field Day – January 2024

Experience sharing of VU2IIH Station

What an exhilarating 33+ hours of Amateur Radio experience we had during this year's field day contest! I must first start off by quoting an adage: *Good planning is already half success.* This is exactly what we did when we heard of the ARSI Field Day event that will come up in January 2024. Like every year, Indian Institute of Hams participates in the ARSI National Field Day & Hill Topping Contest. This was a much-awaited event for us, and it was time for us to get geared up. ARSI Field day as you all know, is an annual event held by ARSI for the amateur radio enthusiasts across India. We really embrace such events and concur that there are many objectives of hosting such events, few of them to list are to test the preparedness and improve emergency communication capabilities in times of crisis or natural disasters, radio and antenna related experimentation, learning, knowledge sharing, get-together, and fun - of course.

Our planning started a month before the event. We had shortlisted few locations for the Field Day based on several criteria and finalized one location. IIH always ensures that when such Field Days are planned, we also spread the knowhow of Ham Radio by doing Ham Radio promotion and awareness programs. What best can be a location than a school filled with enthusiastic teachers and inquisitive children. Thanks to Mr. S.K. Mahadev, Nodal Officer who was able to get permission from the concerned department, Government of Karnataka, and schedule with Hon'ble Minister Dr. HC Mahadevappa for inauguration. We finalized the following Karnataka Residential Educational Institutional Society (KREIS): Morarji Desai Residential School, Varakodu, Mysuru District, Karnataka. Grid Square bearing MK82jg and Distance of 150 kms from Bengaluru. ARSI Field Day Operating Category For the ARSI Field Day (FD) 2024 contest, we participated in the Category A (HF Bands: 160, 80, 40, 20, 15, 10 M) Participants List of Hams from IIH Bengaluru who participated in the ARSI FD are:



- 1. VU2FI OM Dr. Sathyapal
- 2. VU3LXI YL Lakshmi
- 3. VU3FCE YL Shilpa
- 4. VU3DUG YL Suganya
- 5. VU3CJM OM Manju
- 6. VU3UBN OM Nandu
- 7. VU3FTW OM Sathish
- 8. VU3OIM OM Venkat

Pre-Planning: We started with our planning for the list of end-to-end inventory items, a month ago. We meticulously planned the roles and responsibility amongst us. The list of inventory includes:

HF Antennas: EFHW and Inverted-V – Radios: Yaesu FT-891 and ICOM 7300 –

Antenna Masts: Indigenously crafted named as INSTAMAST –

HF Antenna Tuners –

HF SWR meter -

RG213 RF cables (4 sets) –

VHF and UHF Handy's - Laptop (with Monitor, Keyboard & Mouse) -

PSUs & Battery (LiFePo4) -

Petrol Gen-set for power backup –

Field Day & IIH banners -

Logbook,

UPVC pipes, necessary toolsets etc.

The INSTAMAST was tested by VU3UBN, VU3OIM, VU3DUG and VU3FTW, by laying a EFHW HF antenna with FT891 Radio, a week before FD at the layout park near the QTH of VU3UBN OM Nandu. A week before the ARSI FD, VU2FI had circulated the travel plan for the Field Day.

Travel Day, Briefings, and Preparation The D-Day arrived! With tons of excitement filled as our fuel, we started from Bengaluru around 7.45 am after sumptuous breakfast and reached the gates of our new experience centre **(Morarji Desai Residential School)** around 11.30am. The opening of the gates by the school guard with a welcome smile, lit our lamp of excitement in store for the next 3 days.



Upon our arrival to the school, the principal of the campus Shri. D Ningappa welcomed us. We had a briefing at the principal's chamber with list of tasks and actions which were needed to be executed for the field day.



After the briefing, we all went on a recce, to identify the right location to place the HF and VHF/UHF antennas. The building terrace was identified as the place to host 2 EFHW HF antennas (one aligned North-South direction and another aligned East-West direction) and 1 VHF/UHF X50 dual band antenna. We also identified a place away from the school terrace to host an Inverted-V HF antenna, to avoid RF interference from the EFHW antennas. Many schoolboys were excited and offered their incessant help throughout the entire process of hosting the antennas. Field Day Preparation The group got split into batches, with each batch handling the installation of each of the antennas respectively. The HF and VHF/UHF end-to-end setup was completed and tested within 4 hours successfully. We then planned our day wise tasks and shift wise operating the radio for 33 hours of contest. All of us divided equally the work with 6hour shift to operate the station to establish the contacts over HF Voice and FT8. Join us in a pictorial narration of the memorable moments of the Field day:





VU3CJM, VU3FTW, VU3UBN, VU3FCE, VU3LXI and VU2FI assembling the X50 VHF/UHF antenna for the installation.



 $\mbox{VU3UBN}$ and $\mbox{VU3OIM}$ going atop the water tank above the terrace and installing the X50 VHF/UHF antenna.



VU3LXI, VU3DUG, VU2FI, VU3FCE, VU3CJM, VU3UBN and VU3FTW along with school students and teacher doing the installation of Inverted-V HF antenna using the indigenously assembled INSTAMAST.



Inauguration of the Field Day station on the first day of the contest 27th January 2024.



School children eagerly waiting to receive and welcome the Hon'ble Minister of Social Welfare Department Shri. H C Mahadevappa.



School children receiving the Hon'ble Minister of Shri. H C Mahadevappa



Group photo of the team along with Nodal Officer Mahadev Sir and inmates of the school without which the whole FD event at the school wouldn't have been possible. The FD station hosted several banners for Ham Radio promotions.





Hon'ble Minister inaugurating the ARSI Field Day station.



VU2FI explaining to Hon'ble Minister about HF Radios and its operations



Hon'ble Minister operating and communicating through UHF Radio with few Hams in Bengaluru





Hon'ble Minister honoured with IIH CALLBOOK INDIA 2023



Hon'ble Minister addressing students and teachers about Amateur Radio



VU3LXI & VU3DUG in action on HF FT8 and HF Voice respectively



Field Day Highlights

- •The Government High School under the Ministry of Social Welfare Department was chosen as the ARSI FD location
- Hon'ble Minister Shri H C Mahadevappa inaugurated the event
- 2 EFHW HF, 1 Inverted-V HF & 1 VHF/UHF antennas all worked excellent
- Ham Radio promotion banners conveying the awareness of this unique hobby
- School teachers and students were enlightened with Amateur Radio as a scientific hobby
- Info sessions and practical hands-on sessions for school students
 Memory kindling Morse Code session to school students
- Hospitality and humility shown by the school authorities and children
- Loads of fun and practical learnings

Learning Experiences

We had a garland of scintillating experience assisted by golden learnings:

- Choosing optimal locations for Field Day operations
- Right positioning of antenna masts to erect HF antennas.
- Direction and alignment of HF antennas for optimal signal RX & TX
- Tuning of the HF antenna elements for the best performance rather than relying on HF Radio Tuners
- Importance of having redundant setup in place (RF Cables & Antennas)
- Countering RFI and EMI and their mitigations

Hope you had a good glimpse of our ARSI Field Day operations!

On behalf of Indian Institute of Hams (VU2IIH), 73, de VU3OIM

Assistant Director, Indian Institute of Hams, Bengaluru, India



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