

An Extreme Field Day at Kargil, N. India

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9V1KV / VU2AZK

SARTS Meeting,
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Introduction

Sreshta Vejju

- 3rd Year Electronics Student
- Been a ham since 2 years
- Active on HF & VHF
- Keen interest in Sat Com & Electronics Projects
- Love Traveling & Motorcycling

Kishore Vejju

- Been a ham since 1994
- Entrepreneur in Engg Svcs
- Active on HF, VHF, UHF
- Keen interest in VHF Dxing, Antennas, Electronics & IoT projects
- Love Traveling, Field Days & Motorcycling

How it started

- The trigger was the MoD, DoT invitation for hams to operate from Kargil.
- We (Sreshta VU2NHK and Kishore VU2AZK) applied within a couple of days of this announcement and requested the dates: Jan13-17, 2024.
- It was approved within a few days and we started planning and preparing

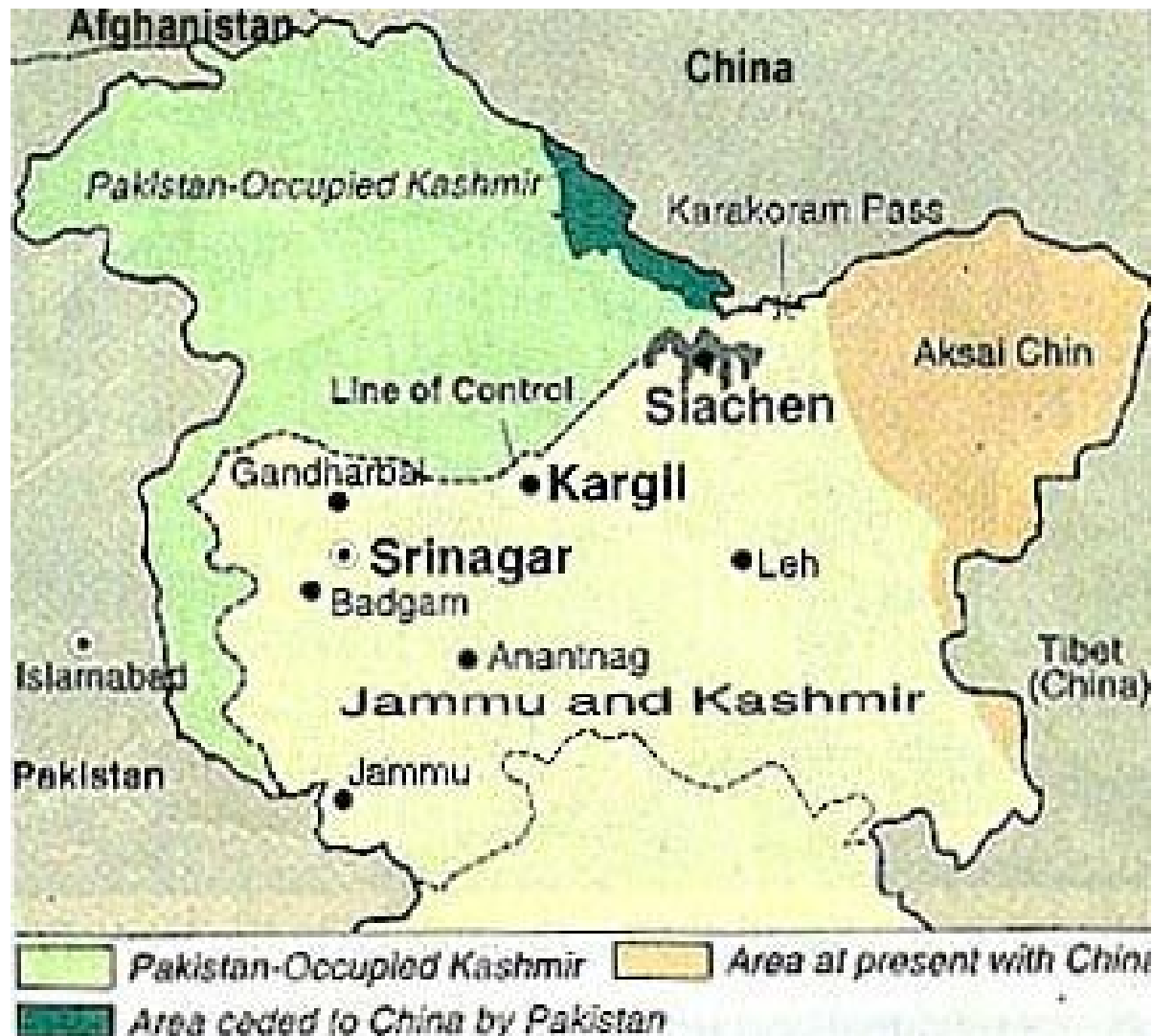




Preparations

- Carry all medicines that you may potentially require. Do not forget Diamox – helps alleviate Acute Mountain Sickness
- Take your Doctor's advise on traveling to these altitudes and climate
- Amateur Radio Equipment, cables, connectors, tool kit, soldering iron, extension boxes, Multimeter, NanoVNA etc.
- Torches, matchbox and candles
- Adequate Winter...errr Polar Clothing including Cap covering the neck and full face mask.
- Talk to the Indian Army Liaison Officer assigned to you

The Location



The Ham Op Center

- The location is called Point 13620....about 30KM from Kargil town and 210KM North of Srinagar, capital of the state of Jammu & Kashmir, in the Zaskar Ranges of Himalayas
- The shack's GPS altitude was 13,700'.
- At this High Altitude location, the winter daytime temp ranges from -16 to -26C
- Steady wind of 20-40KMPH during the day and picks up after sun down
- Local wildlife includes Snow leopards, Siberian Ibex and Brown bears
- The Coniferous tree line ends around 9000'. Rhododendron and brush above that





Equipment carried

- ICOM 7300
- MFJ 30A PS
- ICOM AH-4 External Ant Tuner
- Tool Kit
- RG-58, RG-213 25 meters each
- CAT 6 25meters
- Multiple PL259 connectors, couplers
- Multiple types of SS fasteners
- Multimeter
- Soldering Kit
- NanoVNA
- Insulation tape, Heat gun, Heat Shrink tube
- Baofeng GT-5Rs
- Raspberry Pi, keyboard, Mouse (For Digital Modes)



**This itself was
about 30Kg**



Operations - 1

- Trained Officers and staff on building a 4 band Fan Dipole
- Built the Fan Dipole in their Workshop on 1st day of Acclimatization
- Worked with local staff to prepare a Earthing Pit very close to location (Digging in -25C on a frozen ground was a feat in itself !!!)
- Pneumatic Telescoping Mast (extendible to 30', having 12 guy hooks) was used. Interesting story regarding this....
- 12V 150AH Flat Plate Batt was provided, but after 20 mins of operation at 50W, the 7300 would shut down during transmit.....Batt Voltage had fallen very quickly in the cold !!!!
- Then, the local staff brought in a twisted pair 4Sqmm wire into the location. Connected the MFJ PS and could happily transmit at 80W
- Absolutely impossible to operate a keyboard for FT8/FT4 in the cold.

Operations - 2



Operations - 3





Operations-4

- Slightly more than 280deg of Horizon view. Direct North is blocked
- EU, Central Asian stations were booming in
- Stations from Tajikistan, Kazakhstan and Central Asian Republics were 59+30
- Operating hours were irregular. Have to follow the directions of the Liasoning Officer
- Entire India was covered. Contacted a station in Arunachal Pradesh (a rare QSO)
- Our Signal was 59+5 till Cochin, way down South, on most days
- Made about 250+ QSOs, a lot of EU stations
- Last QSO was at 1800hrs. It would be very cold by then and Officers would ask you to pack up
- A large number of Officers, JCOs and staff would stop by the location to see what we were doing
- They talked to other Indian Operators as well (I was Control Op)



VHF Ant / Fox Hunting Workshop

- Conducted a workshop for about 40 Officers and Staff on building cheap and light weight VHF antennas
- Most were familiar with Basic Antenna theory
- Talked about basic Fox Hunting techniques
- Challenge was very tall mountains on all sides and metal structures where reflections were rampant



Some learnings

- Operating in cold weather is completely different than operating from your shack at home at lower altitudes
- Simple things like a ballpoint pens and gel pens won't work.
- RG58 coax will behave like LMR400 mechanically, you can't even make a loop of 9-10" as it gets very stiff. CAT6 cable just cracks.
- Warm up equipment gradually. Start transmitting at 5-10W, slowly increase to 80-100W. How a cold IC, capacitor, or diode works in those temps can't be predicted. Relays can freeze
- Batteries don't last long, mobile screens don't respond.
- Even turning a screwdriver with gloves is a challenge.
- Kero-heaters will not give more relief than 2-3 deg. Carry warm clothing, and a full face ski mask

Message to all Indian Hams from Field Day Station



*"THIS AMATEUR RADIO
FIELD DAY STATION
COMMEMORATES THE
CULTURAL DIVERSITY OF
KARGIL AND SALUTES
THE BRAVERY OF THE
PEOPLE OF KARGIL IN
DEFENDING THE
NATION."*

JAI HIND



Suggestions for an enjoyable Field Day

- Safety should be at the top of the list.
- Plan for bad weather, rain and lightning. Draw out a set of SOPs for the Field Day.
- Recce the site well in advance to plan your Lightning Rod location, Grounding location, tent, antenna placements and orientation. Especially so, if you are on rocky terrain.
- Operating Band plan for all FD stations
- Keep a good supply of food and water at all times.
- At high altitudes and in severe cold, you don't feel thirsty, but you have to constantly keep hydrating.
- Keep a portable LCD display and an Rpi handy to give presentations to visitors.
- Medical kit with all essential items
- A proper log book / software

Typical antennas used at other Field Days



- A 5 band Fan Dipole homebrewed as an experiment

Typical antennas used



A Hexbeam with Rotator

Typical antennas used



An End Fed Half Wave (EFHW) antenna. Note the Field Day setup on rocky locations – where you cannot dig into the ground

Operations



Typically, we use 2-3 HF stations, 1-2 VHF/UHF stations

Operators need to be fed....



Some rest for the Operators



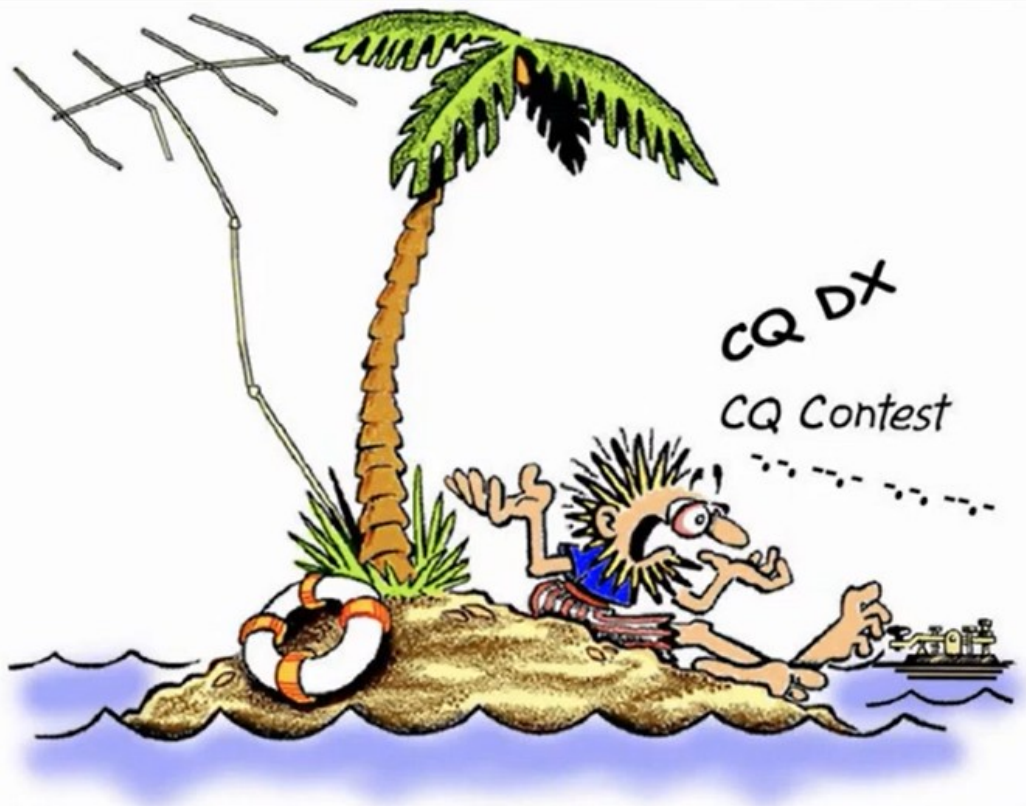
Generally, the bands are quiet between 0200-0400hrs India time

Takeaways from a Field Day Op

1. Periodic rehearsal for Emergency Ops
2. Live demonstrations to
 - a. Potential Hams – they get to see live, what it is all about
 - b. New Hams – I believe if they do not get on the air within 2-3 wks of getting their license, they are likely to lose interest completely
 - c. Existing hams to try new antennas / bands.
 - d. Govt officials / Policy makers
3. Understand propagation condx at different locations / times of the day
4. Very importantly, having a good time outdoors with family and like-minded hams



Thats it folks.....Thanks!!



“You’re only given a little spark of madness. You mustn’t lose it”

- Robin Williams