



HAM Radio

Why in News

Recently **HAM (amateur) radio operators** have volunteered to help a special task force that has been constituted in Bengaluru to ensure that citizens placed under home quarantine follow the protocol for it.

Key Points

- Amateur radio, also called ham radio, is a **noncommercial two-way radio communications**. They use **many frequency bands** across the radio spectrum.
- HAM radio is a real-time communication network. This is much like wireless communication which is **quick and transparent**.
- Amateur Radio operators set up and operate organized communication networks locally for governmental and emergency officials, as well as non-commercial communication for private citizens **affected by the disaster**.
- Amateur Radio operators are most likely to be active after disasters that damage regular lines of communications due to power outages and destruction of telephone, cellular and other infrastructure-dependent systems.

Indian Scenario

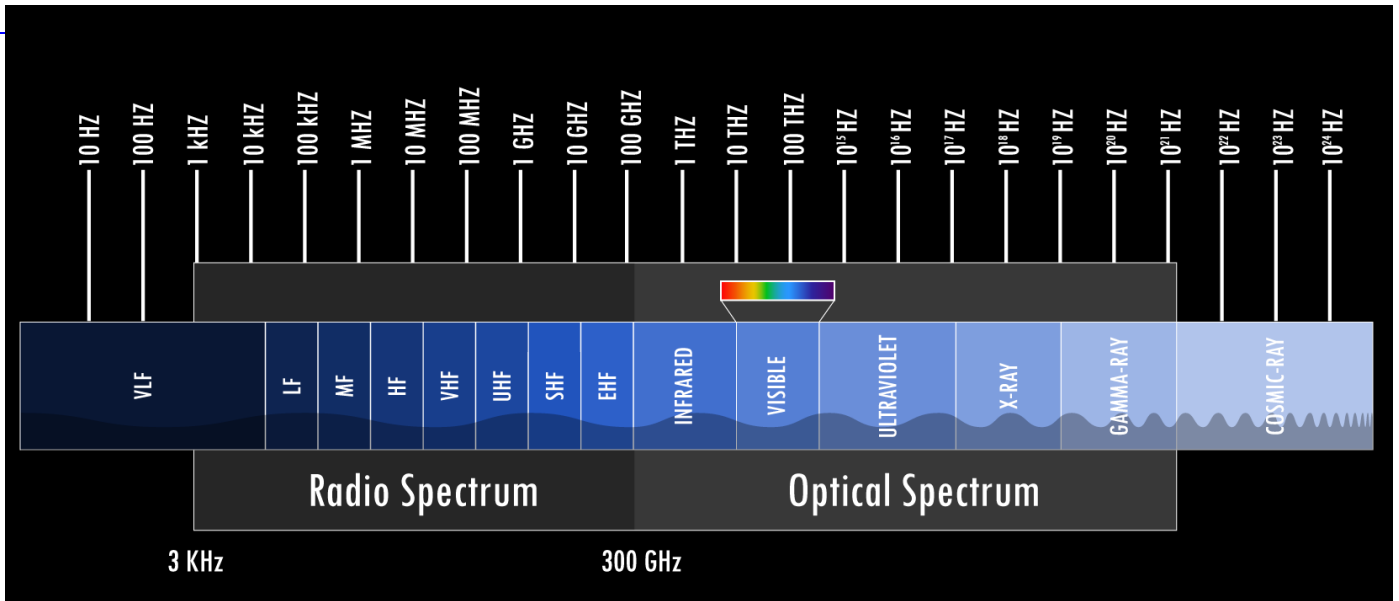
- According to the **Indian Wireless Telegraphs (Amateur Service) Amendment Rules, 1984**, 'Amateur service' means a service of self training intercommunications and technical investigation carried on by Amateurs that is, by persons duly authorized under these rules interested in radio technique **solely with a personal aim and without pecuniary interest**.
- It is a **non-commercial** radio communication service.
- Amateur radio operators are commonly known as hams. The term **"Ham radio"** is used to describe the hobby of Amateur radio and not the equipment.
 - Similarly the term **"Ham"** is used to describe a **radio amateur enthusiast** and not the equipment.
- Any **citizen of India** who is **above 12 years of age** can become a ham by qualifying in the **Amateurs Station Operators' examination (ASO)** and obtaining a valid Amateur wireless telegraph station license.

Radio Waves

- Radio waves have the longest wavelengths in the **electromagnetic spectrum**.
- These were discovered by **Heinrich Hertz** in the late **1880s**.
- These are produced by the accelerated motion of charges in conducting wires. They are used in radio and television communication systems.
- They are generally in the frequency range from **500 kHz to about 1000 MHz**.
- The AM (Amplitude Modulated) band is from 530 kHz to 1710 kHz. The **FM (Frequency Modulated)** radio band extends from 88 MHz to 108 MHz.
- **Higher frequencies** up to 54 MHz are used **for short wave bands**. TV waves range from 54 MHz to 890 MHz.
- **Cellular phones** use radio waves to transmit voice communication in the **Ultra High Frequency (UHF)** band.

- Radio-wave communications signals travel through the air in a straight line, reflect off of clouds or layers of the ionosphere, or are relayed by satellites in space.

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