World Radio Day: How Heroic Ham Operators Use Radio Waves to Carry Out Post-Disaster Rescue Ops

By Kunal Kambli

13 February, 2021

TWC India

A Ham radio operator.
(Aditya Waikul/TOI, BCCL, Pune)

Imagine this: you have just encountered an intense cyclone—a storm so strong that it has damaged buildings, uprooted trees, brought down electric poles and power lines, and destroyed everything in its path. The electricity is already down, and all your usual modes of communication—cell phones, landlines, the internet—have stopped functioning. What do you do in such a situation? How do you make those emergency calls for medical assistance? How do you seek immediate help after being completely cut-off from the rest of the world?

Be it natural disasters like cyclones and earthquakes, or man-made ones like bomb-blasts or terror attacks, the loss of communication in such times can often push a delicate situation from bad to worse; it can often be the difference between life and death.

But even in such blacked-out circumstances, a glimmer of sunshine can be found, and contact with the outside world can be established through a mode of communication that many wrongly believe to be obsolete: radio. On the occasion of the 2021 World Radio Day—an international United Nations observance held on February 13 every year—let us explore the underappreciated

yet ever-so-crucial role played by amateur radio and the supermen that operate it, in saving lives during calamities.

What is Ham radio?

Ham radio, also referred to as amateur radio, is not only a popular hobby around the world, but also a service that connects people from different cities, states, and even countries. It can be used by anyone and everyone to send messages through Morse Code on an old telegraph, establish voice communication on a hand-held radio, or transmit computerised messages and files via satellite.

Nobody knows the origin story of the abbreviation HAM for certain, but popular theories suggest it was created using the initials of Albert Hyman, Bob Almy, and Poogie Murray—operators of the first amateur wireless station at the Harvard Radio Club.

Like other wireless technologies, Ham radio uses the power of electromagnetic radiation to send voices, Morse code, and digital data around the world with the help of transmitters, receivers, and antennas. The use of a combined unit of transmitter and receiver, called a transceiver, facilitates two-way communication between broadcasters across the world.

Among all the electromagnetic radiation spectrums, Ham radio operates solely in the radio wave spectrum, which is known for its long wavelengths that can range anywhere from 0.04 inches to more than 99 kilometres.

Ham usage in disaster communication

Ham radio operators during a disaster management operation in Mumbai, Maharashtra. (Shantanu Das/BT, BCCL, Mumbai)

While a hobby on an individual level, Ham radio operation can transform into a national asset during times of need. In fact, amateur radio stations have time and again served as a reliable

second line of communication when existing public or government communication links have broken down.

“The government has its own wireless equipment and communication mediums, but when a disaster strikes, radio amateurs are the only people who can set up their equipment in minimum time and get going with the communication anywhere in the world. Such emergencies are where this hobby can be implemented for providing critical disaster communications,” said radio amateur and weather enthusiast Ankur Puranik, who developed an interest in Ham as a teenager back in 2003, and has helped the Maharashtra government on multiple occasions since.

Owing to its sheer effectiveness, coupled with the fact that Ham operators offer this noble service on a strictly voluntary basis, governments around the world wasted no time in adding Ham radio into their disaster management SOPs and emergency contacts lists.

During past calamities like floods, cyclones, earthquakes, and more, Ham operators in India have played a vital role in organising on-the-air emergency medical traffic, establishing emergency communication networks, coordinating and organising relief operations, and arranging medicines, food, and clothing for the affected people. Even now, Hams constantly remain in touch with their respective state government disaster management cells, ready to act at a moment’s notice when disasters strike.

When a calamity befalls a certain area, an assessment is made on how much the normal communication has been affected, whether there is a need for radio communication, for what purpose the communication is required, how many Ham operators are needed, and between what points the emergency communication needs to be established. Only once this assessment is made are the Ham operators brought in and deployed by the government.

Over the course of the operations, the Hams serve as points-of-contact at government offices across the state or country, and at the sites that have been ravaged by disasters. However, functioning at the latter can be a lot more challenging.

Elaborating on these on-field difficulties, Ankur added: “When we go out into the field, the government makes all sorts of living, eating, and travel arrangements for us. But even then, there are some persistent challenges that we encounter from time to time, one of them being extreme weather. As our communication is dependent on air waves, rough weather conditions can be a cause of major interference.

“Then there are also the post-disaster conditions—at times, we have no option but to conduct our operations amid flooded and devastated environments, in unhygienic places that are on the brink of epidemics, or even with injured victims and dead bodies lying around us.”

In spite of these horrific obstacles, Ham operators continue to risk their lives and volunteer their services to help their people, their countries, and humanity as a whole. And until more advanced technology—like satellite communication, for instance—is introduced and implemented widely in disaster communication, HAM operators will continue to be the not-so-silent guardians that relay their voices and communicate vital information in times of greatest need.