



Grassroots Emergency Communications Operations

Sticky Notes

GECO Newsletter
Vol. 5 No. 3, Oct 2020



www.neighborhoodlink.com/GECO

Email: gecoradio@gmail.com

Ready to Serve and Sustain Our Community

ARSB Trains Scouts for License Exam

HAMs in Bangladesh face a variety of challenges. Our contacts in the Amateur Radio Society of Bangladesh (ARSB) say two of the biggest challenges for new HAMs are money and burdensome government regulations. They are tackling the regulations by launching a major effort to develop a national HAM EmComm plan. They formed four committees:

- 1) Emergency Amateur Radio Communication System and Services.
- 2) Publicity and Publication.
- 3) Research and Training.
- 4) Development, Policy and Coordination with Government / Non-Government Organizations.

In Sep 2020, ARSB and the Bangladesh Scouts Gazipur District Rover held an all-day training session to prepare scouts for an amateur radio license exam. They conducted the session in the Mathematics Department, Alam Government College, Bhawal Badre.

Among the ARSB organizers are (left to right in photo): Deepta S21HK, Tahsin S2K1IT, Syed S21ED, Md. Sawsar S21KV, Zubayer S21BK. Our apologies in advance to other S21-HAMs participating in the event who we have missed.

As we all know, staging any HAM event is a team effort requiring many helping hands.



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Our thanks to Deepta S21HK for sending us photos of this event. We will keep in touch and get update reports on their progress.

The ARSB has been re-energized by several events.

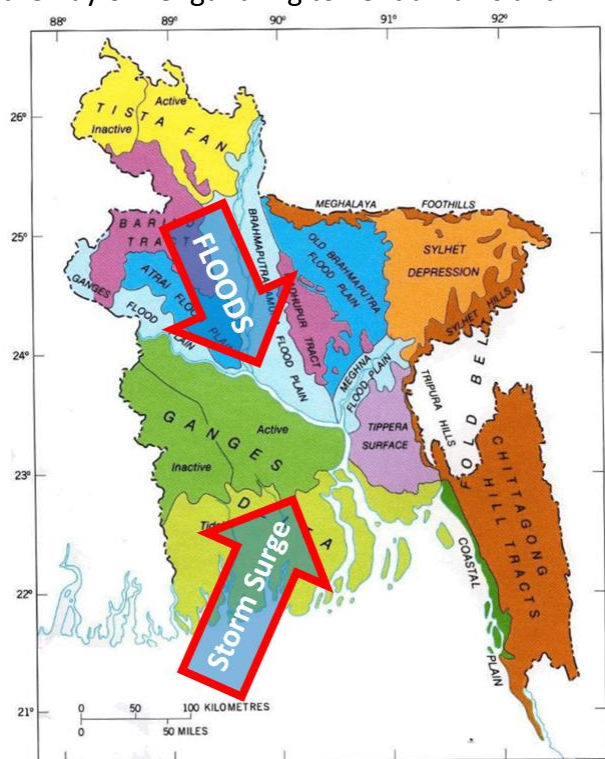


Tropical cyclones and the monsoons are annual disasters pummeling low-lying Bangladesh. The map on the right shows the country's topography. Three major river flood plains in the north flow toward the coasts to the south. Heavy monsoon rains cause these rivers to overflow annually. Tropical cyclones from the Indian Ocean tracking northeast over the Bay of Bengal bring torrential rains and high winds create storm surges inundating the coast. During a typical flood season, about 18% of the country is flooded. In extreme seasons, as much as 78% of the country can be underwater.

In the beginning, the country was very poor. But it now ranks 39 out of 211 countries in the world. According the UN studies, Bangladesh may graduate from the ranks of the Least Developed Countries (LCD) by 2024. Its annual economic rate is 8% (higher than the average for Asian countries (according to the Asian Development Bank). In contrast, the growth rate for the US was -3.7% in 2020 and estimated to be about 2.5% in 2023.

But no matter how much the Bangladesh economy grows, the cost of the annual devastation is a heavy burden for any country. Stepping up the HAM EmComm net is a valuable asset for the country. The dedication of Bangladesh HAMs made a big difference in recent years as acknowledged by the government. S21-land HAMs upheld the long-standing tradition of amateur radio operators all over the world by volunteering their radio equipment and skills to help in times of need.

GECO has pledged to support ARSB efforts as much as we can. Already, we have shared information resources on EmComm organization and planning. We will continue information exchanges and assist them with education resources whenever needed. 🌱

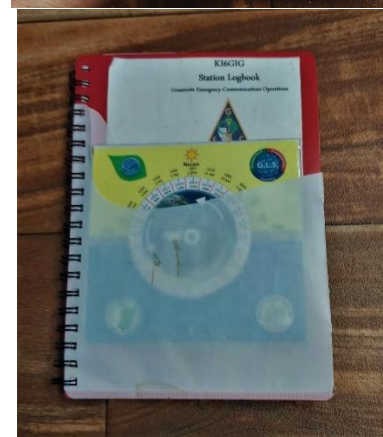
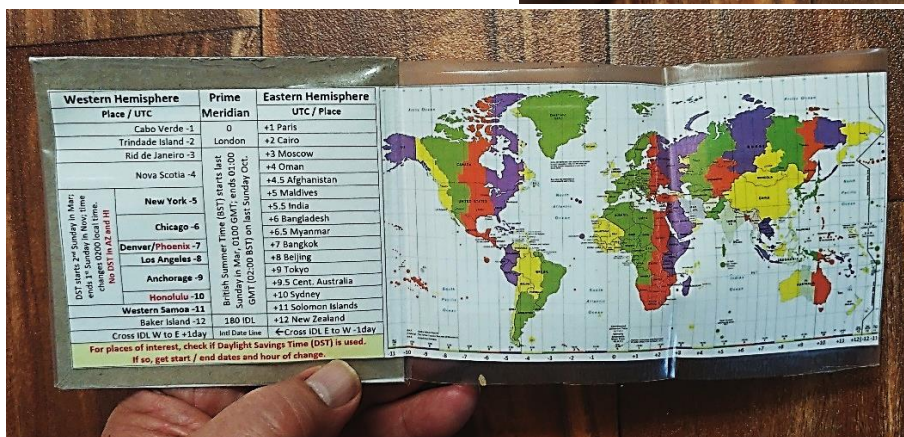


Bangladesh's annual double whammy: Monsoon rains cause floods from the North; Tropical cyclones bring rain and storm surge from the South.

Geography for HAMs: Make a Time Wheel

Time conversion is another example of how Geography connects with the world of HAM radio. There are many online and phone apps to do time calculations. The GECO approach is no cost / low cost, no tech / low tech. Our EmComm approach is to hope for the best; prepare for the worst. In an emergency, one of the “worst” scenarios is to run out of power. In the field, we want to conserve battery power. So, we made a DIY manual [Time Wheel](#) from a free applied geography lesson. This makes a great hands-on lesson for HAMs with students at home due to the COVID-19 regulations.

The Time Wheel is a simple cut out and assemble. We put the UTC Reference Table and UTC Time Zone Map on the back of the Time Wheel. It was compact and fit in the pocket of our field logbook. If we need to do any time conversions in the field, we are ready. We sized the device to fit our field logbook.



The back of the Time Wheel opens the UTC Time Reference Table and UTC Time Zone Map.

The Time Wheel is compact and fits with our 5x7 field logbook

The Time Wheel is a flat, 2-dimensional model of the world. The example shown is for the Northern Hemisphere. The Earth Dial shows a view of the Earth looking down on the North Pole. The arrows show the direction of the Earth’s rotation.

The Time Wheel shows you how time is measured and how a new day starts on Earth. As you turn the Earth Dial, you can see how different places change time hour by hour. If you get confused about how a new day begins on Earth, the Time Wheel lets you see the change take place. 🌍

Background on the Story of Time Measurement and Longitude

The story of time measurement and determining longitude is a fascinating tale of connecting the dots. At first some of the dots don’t seem related at all. This is why I find geography to be such a great field of study. It uses all life, physical, and social sciences to study our world. This is also the tale of a citizen scientist, an amateur, with no university training. He was a carpenter, a tradesman, a very curious, persistent, and dedicated amateur scientist who solve a problem than great minds such as Newton were unable to solve. Please take time to view this interesting video free on YouTube.

“Longitude” <https://www.youtube.com/watch?v=LHvt48S9l4w> Break out the popcorn and enjoy. 🌍

Progress on UN Sendai Framework DRR Effort

In the May 2020 issue of “Sticky Notes,” we announced our grassroots effort to use HAM radio to spread the word about free applied geography lessons in support of the UN Sendai Framework for Disaster Risk Reduction.

Last month we began an email campaign announcing the availability of the lessons to HAMs worldwide. It was a multi-purpose quest:

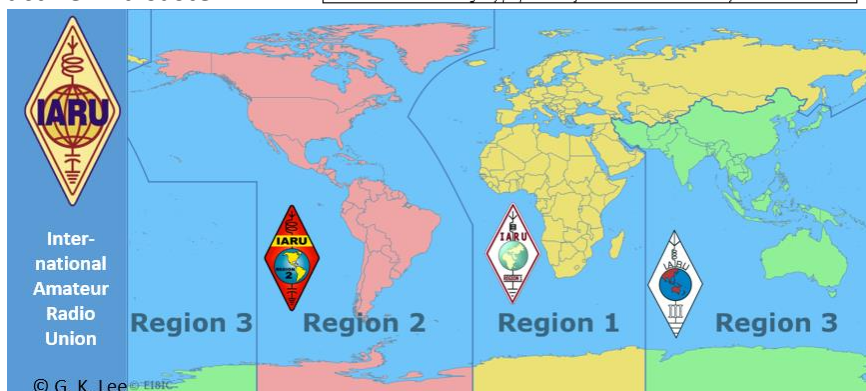
- 1) Make HAMs aware of the Sendai Framework.
- 2) Urging them to share the information with local teachers and community leaders.
- 3) Suggesting how they could help implement the use of the lessons at the local level to help their country comply with the Sendai Framework to make progress toward the UN goals. In this way, HAMs can make national leaders see HAMs being active in disaster preparedness.

We sent announcements to QRZ.com, Southgate Amateur Radio News, ARRL, and Amateur Radio Newline. We then sent emails to IARU national amateur radio societies. We selected countries identified by the UN as highly vulnerable. Several email addresses were invalid. So far, we got positive feedback from three HAMs:

- Rudy VR2USP, President Hong Kong Amateur Radio Transmitting Society (HARTS)
- Basil V44KWB, Emergency and Disaster Communications Coordinator, St. Kitts, Nevis, Anguilla Amateur Radio Society (SKNAARS).
- Mao TN5MM, President, Union des Radioamateurs du Congo (URAC).

Through our overseas club ties, we shared the information with the members of the West Bengal Radio Club (WBRC) and the Amateur Radio Society of Bangladesh. We’ve also shared the information via our personal HAM contacts worldwide.

It is hard to gauge the reach of our efforts. We take the attitude we did when teaching a class. It matters most that we provide opportunities for HAMs to learn. If only a few HAMs avail themselves to the information, it is important that they got it. We respect the HAMs freedom to choose. At least we know we shared our ideas and knowledge freely and tried to make a difference. 🌱



VR2USP
Rudy, President
HARTS



V44KWB
Basil Woods

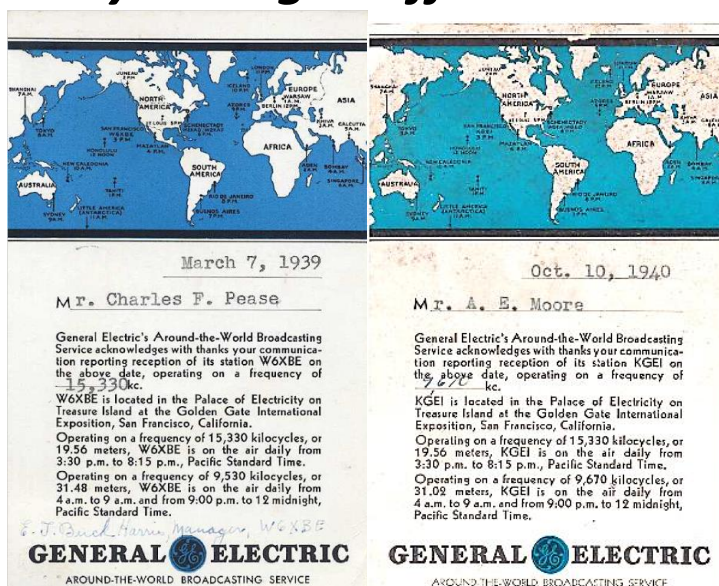


TN5MM
Mao Monguimet

QSL Cards & Secondary Callsign Suffixes

We were surprised to find out that early [shortwave broadcasters used QSL](#) cards. People at home listening to distant stations would write to the stations asking to confirm hearing that distant station. This was a way for broadcasters to know the range of their signal. The station would send back QSL cards (named for the Morse code shorthand for "I acknowledge receipt.").

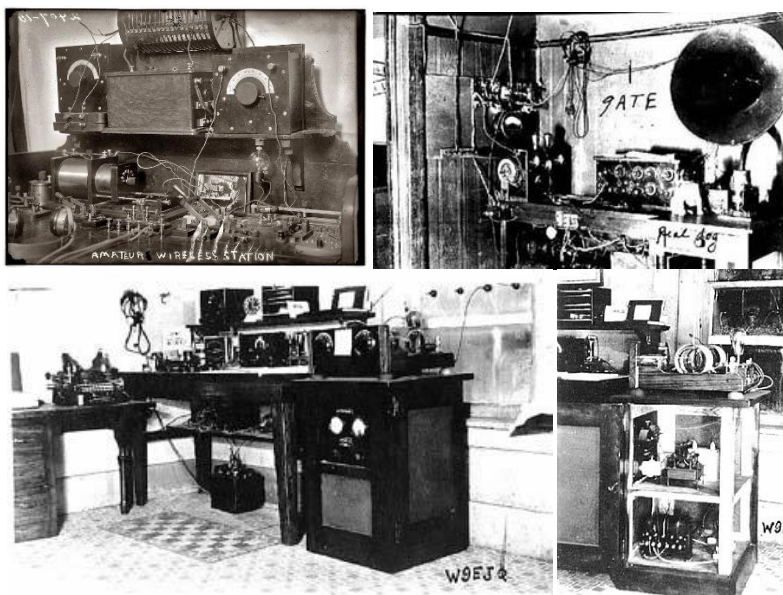
On the right is an example of a W6XBE (later KGEI), a shortwave station in San Francisco. Mr. Pease was in Mumford, NY and Mr. Moore in Queensland, Australia. Pre-war listeners were mainly American Expats in Asia. During WWII, KGEI served US troops in the Pacific.



I am not sure when the first HAM QSL card was sent, but when I got my license in Fall 2006, I got the impression things were rather lax. The serious contesters and award seekers needed them to validate their efforts. But electronic QSL cards/services and electronic logbooks were emerging. They have since gained wider acceptance. Mathew KØLWC has a [video](#) tracing the history of amateur radio QSL cards. It is interesting to hear what he found, so I won't spoil it for you. He uses electronic logbooks to confirm contacts, but also laments the loss of the uniqueness of the traditional mailed QSL cards. A possible compromise is making digital QSL cards, especially adding your own photos.

In the early days of HAM radio, most HAM stations were large and not easily moved. These photos of early HAM stations show the size of things back then. HAMs put their callsigns on QSL cards to document/confirm contact with other stations. To make things exciting and interesting, contests and awards gave recognition to active HAMs. Early HAM equipment was big and bulky. HAMs operated from fixed locations. We found these vintage 1920's era photos of HAM stations.

We found a QSL card for one of the 1920's stations in the photos, W9EJQ. (See photo of the card on the next page.) The amount of technical information shows these HAMs were keen on sharing information. In those days, experimentation was in the air. These early HAMs were the "open source" model of the day.



Top L: "Amateur Wireless Station" with headset circa 1920. George Grantham Bain Collection. Top R: Apr 1924 photo of 9ATE, Shickley, NE. Bottom L: The modern 1929 HAM station of W9EJQ, Goldfield, IA. Bottom R: #4 Nov 1928 previous transmitter of W9EJQ

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G.E.C.O. – Grassroots Emergency Communications Operations

KI6GIG
Kilo India Six Golf India Golf

Alhambra, CA DM04w elev. 521 ft. amsl
UTC -8 CQ 3 ITU 6 ki6gig@arrl.net

Mobile Emergency Communications Operations
Mobile Emergency Weather Station

KM6EON-R Antennas

http://www.neighborhoodlink.com/GECO
http://www.neighborhoodlink.com/RTC-TH_Tech/pages

Confirming contact w/	UTC Date / Time				MHz	Mode	Note	Thanks for the QSO
	Year	Month	Date	Hr				
VK4GCO (John)	2017	Jan	19	01:00	445.060	KM6EON-R EchoLink 717383	Mobile 445.060 MHz neg. offset PL 136.2	

An early QSL card (above L) gives much more technical details of the equipment than the cards I make for myself (above R).

To see some early HAM QSL cards, check out these links:

- <http://oldqslcards.com/>
- See more [older QSL cards](#)

Experimentation has always been inherent in HAM radio. Some HAMs ventured outdoors away from their stations. They built radios and antennas for portable use. I am not sure when the practice of secondary callsign suffixes began. Undoubtedly, HAMs were trying to tell the other station accurately and easily “I am not operating from my station.” They simply began to add the /P suffix after their callsign. This 1924 photo (on the right) shows an early portable operator on skis.

The ARRL [QST Jan 2000](#) magazine article talked about the 100 year history of HAM radio. There was no mention about portable operating. I couldn’t find much information about the first use of HAM radios on boats or airplanes. But the article mentioned the first HAM radio space QSO in 1983 by Owen W5LFL-(now SK) from the space shuttle Columbia on STS-9.

I got started in HAM radio late in 2006. Shortly after, I retired and moved to Thailand. I tried to set up a station in Thailand, but it was a struggle with the language, regulations, and lack of English-speaking HAMs to help with the many cultural hurdles, limited equipment availability, etc. I relied on EchoLink and began my foray into making my own QSL cards.

The first secondary callsign suffixes I encountered were via EchoLink: -L for link nodes, -R for repeaters. The earliest use of a secondary callsign suffix on my QSL cards was the one shown on the right. I sent it to Mark N7YLA (my Elmer). If I recall correctly, he admitted he was confused about secondary suffixes. I used it on this QSL card (along with the graphics) to make it clear I was operating away from my home station. After all, they say a picture is worth a thousand words.

As time passes, technology and rules changed, some confusion and discrepancies arose. In the early 1980’s the FCC policies / regulations for amateurs changed. [Note: It seems not all HAMs are fully aware of the changes including me. I got my license in 2006, and I am learning about these now!]



KI6GIG/P
Kilo India Six Golf India Golf
http://www.neighborhoodlink.com/GECO

Have EchoLink, will travel.

Greg KI6GIG

Portable EchoLink
User #384040 ki6gig@arrl.net
Grid: EL98g UTC -5 CQ 5 ITU 8
Lat: 28.397085 / 28° 23' 49" N
Long: -81.4549488 / 81° 27' 17" W

GECO provides emergency preparedness and emergency communications education and training

Confirming contact w/	UTC Date / Time				MHz	Mode	Note	Thanks for the QSO
	Year	Month	Date	Hr				
Mark (N7YLA)	2019	Feb	4	01:17	----	VOIP EchoLink	KI6GIG Control Operator	

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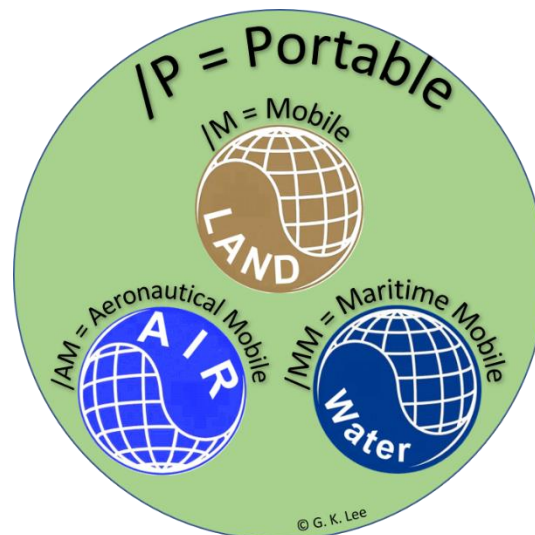
I'm not sure of the order, but among the changes were:

- Amateurs no longer required to keep a logbook (unless specifically ordered to do so by FCC).
- Secondary suffixes on callsigns for portable operating no longer required. [Note: If you live overseas, you need to check your national amateur regulations concerning this.]
- HAMS moving from one zone to another are not required to get a new callsign [Note: I am not certain about when this change happened.]

The spirit of experimentation played its part in moving HAM radios to cars, planes, and boats. Secondary suffixes added to a HAMs callsign indicated portable operations away from home. On Earth, there are only three basic places to set up a radio: Land, Water, or Air. The common suffixes I found were /P for portable, /M for mobile, /MM for maritime mobile, and /AM for aeronautical mobile.

The diagram on the rights shows the ambiguity of how all the suffixes represent operating away from home. Three seem to be mutually exclusive. All are stating you are operating away from home. So, what is the difference between /P and all the others?

This seems to indicate the evolution of secondary callsign prefixes was incremental and haphazard. The suffixes came to be as HAMs experimented and operated from different places. As they did so, they wanted to accurately convey their portable operating circumstances to stations they contacted. And as technology changed, some HAMs experimented and tried operating in different places. These are some of the HAMs I found via Internet searches.



Not all suffixes are mutually exclusive.



/P = Portable: Most folks have a good idea what this looks like. It's a typical Field Day situation. The photo on the left shows Dennis, KI6NQG operating a 2m VHF radio linked to the N7YLA EchoLink simplex link node. Dennis is operating off-grid.

Technically, HAMs operating /M, /MM, and /AM are away from their homes. Undoubtedly there may be some HAMs living in motor homes or houseboats. Looking more closely at the details, some questions arise.

/M = Mobile: Some HAMs installed radios and antennas on vehicles and operated while moving. These included cars and trucks, motorcycles, bicycles, and carrying it on a pack frame while walking. HAMs like to experiment. It wouldn't surprise me if someone hasn't tried it on a unicycle, roller skates/roller blade, skateboard, or just about anything on wheels. They are limited only by their imaginations.

When operating in motion, they are /M. If they park and continue operating, are they now /P.? Let's say you stop,



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Photo courtesy of NØLX

and set up an external antenna. The radio is still in the car. Are you now operating /P? Another

Combination is a motorhome. While driving and operating, it's clearly /M. Parked and operating, maybe /P? If a HAM is retired and is living and traveling in the motorhome, then when parked, it this "home?"

/MM = Maritime Mobile: HAMs operating from boats seems straightforward. If a HAM lives

onboard, they are at home when docked. Underway, they are /MM. Seems simple enough. But "maritime" literally means "of, relating to, or adjacent to the sea." What is it called when the boat is on a lake or river far inland? There are adventurous fun-loving HAMs. It doesn't take much imagination to see radios being used on jet skis and other watercraft.

/AM = Aeronautical Mobil: HAMs can operate from aircraft. But it depends

on the country, and type of aircraft. In some cases, you may need approval from radio and aviation

authorities. Brian WB6RQN completed an ambitious /AM HAM project. His attention to detail and meticulous planning are good examples for all HAMs.



Photo by Josh Flowers CC-BY 2.0



Photo courtesy of NØLX



Photo courtesy of Jonathan KA6USA



Photo courtesy of G4AKC



Photo by N7YLA



Photo courtesy of NØLX



Photo courtesy of Gary VK8BN



Photo courtesy of NØLX



Other HAMs took to the air using different types of aircraft. In 1993, Dieter DK4XW/AM, was the first HAM/AM in a light plane in the SAARLAND. Dieter was also able to operate /AM from a [commercial aircraft](#). Russ NK6R/AM operated from a hang glider. He reported getting a 300 mi range using 2M FM, 100mW with a standard 1/2 wave AEA vertical at an altitude of 14,000 ft. AMSL. See, all those things they say about getting your antenna as high as possible are true! Mark AF6IM/AM operating airborne mobile by being the aircraft (in a sense) via parachute. There are numerous other options for /AM operating: paragliding, powered paragliders, ultra- /micro-light aircraft, hot air balloons, etc. We tried to get photos of HAMs using those types of /AM methods. But these are what we found by press time.



Photo by DK4XW



Photo courtesy of Russ NK6R



Photo courtesy of Mark AF6IM



In the US, I couldn't find a formal standard for using the various secondary callsign suffixes. As you can see, the four common suffixes are not always so simple to use. I suppose that in the context of the QSO is one place to clarify exactly how you are operating when away from "home." When you consider the vast array of ways to operate portable, these common suffixes fall short of accurately characterizing your situation.

Rather than create a new set of suffixes, I opted to rely on the adage "a picture is worth a thousand words." When you consider the comments of Mathew KØLWC, I feel comfortable with making my own QSL cards. It combines my hobbies of photography and HAM radio. I like to think recipients of the cards get a pleasant eye-catching surprise. It's hard to know exactly what words out of the thousand they will get out of the photo on the card. 🌱

[**Note:** Our heartfelt thanks to the HAMs who gave us permission to use their photos for this article.]

Some Essential References for HAMs

Whether you are newly licensed or have had your ticket for many years, we suggest you get the most recent versions of these documents. The following references may not be fully applicable to our overseas friends. Go through these for possibly good ideas you can adapt to your situation to improve HAM radio locally.

First and foremost, for US HAMs is the [FCC Part 97](#) regulations. You encountered this while studying for and taking your HAM license exam. Most of us got our license and starting operating. Over time, we get into habits. Regulations change, and we may or may not keep up with those changes from when we passed our exam. I am just as guilty of this as anyone. And yes, I know, it can be tedious reading.

Many radio societies and clubs have a document related ethical conduct and operating procedures. It is available in several other languages. I keep a copy of this one as the "gold standard" and starting point (<https://www.iaru-r1.org/on-the-air/code-of-conduct/versions/>).

This item is an interesting collection of ideas to help new HAMs get off to a good start. I would suggest looking it over. It's the US perspective via ARRL. HAM overseas should check with their amateur radio association and experienced HAMs. <http://www.arrl.org/files/file/Get%20Licensed/Quickstart%20Guide%20EBOOK.pdf> 🌱

