Cell Phones Part 1: Cell Phone Solutions while Cruising

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Submitted by Sherry McCampbell, *s/v Soggy Paws*

With the advent of cell phones and smart phones and 3G and 4G data, the use of WIFI and "Internet cafés" is diminishing. We bought a WIFI antenna /router arrangement two years ago and have never actually finished installing it. I now wish we'd spent the money on a cell antenna instead.

So, there are two sides to this coin—one is the telephone side— what we actually use phones for. The other is the internet side or data.

Phones and Data in the U.S.

When we left the USA in 2007 to cruise around the world, I was on an AT&T plan with a cell phone number that I'd had for the prior ten years. Fortunately, our cruising budget was ample enough to put this plan on hold as we cruised (good for up to six months). As we planned to make annual trips back to the U.S., this gave us an easy way to have a cell phone on our return, without any hassle. And all our family and friends would still have the number I'd had for the past ten years. I reduced my data plan to the minimum, but was still paying about $50/month for the six months that the plan was active. AT&T had rollover, so my plan was fully stocked and ready for use when we'd arrive in the U.S. We're not doing this anymore, but that is a topic for part two of this series.

Pay as you go (PAYG) or "prepaid" phone plans add flexibility. We'd use my AT&T "unlimited minutes, unlimited texts" plan for most of our telephoning. Then we would get my husband a PAYG phone, to provide communications between the two of us when we were apart.

The PAYG carrier we used in 2017 in the U.S. was H2O Wireless, which piggy-backs on AT&T's network. But the players, coverage, and "best deals" change so much that it's worth doing the research each time you visit the U.S. With H2O Wireless, I can order the sim to be mailed, waiting at our first stop in the U.S., with any cell phone area code we desire. Activation takes about five minutes on the internet. Load money by credit card on the phone and go, or select a monthly plan that can be canceled at any time. If you want hand-holding for a bit more money, Walmart has a similar offering, called Straight Talk, as well as other pay-as-you-go plans.

Phones and Data in Foreign Countries

The absolute **cheapest** way to get phone and data service in a foreign country is to use your own unlocked phone, buy a sim card locally, and use the country's own cell service. A typical sim card in a foreign country costs $1 to $20. The higher cost ones usually come with some pre-loaded value, the lower cost ones typically do not.

To use this option, you must have a quad band GSM cell phone, smart, flip, or simple, that is "unlocked." CDMA phones from Verizon or Sprint will not work outside the US unless they are specifically "world phones" that have a GSM radio and a sim slot (like the iPhone).

I unlocked my first phone through AT&T after it was "paid off" on the account. We had a guy on a street corner unlock a phone in Guatemala. I have also used several online unlocking services. You can also now buy "unlocked cell phones" on Amazon and eBay before you leave the U.S. But you should research frequencies, especially if you are planning to use the phone for data. Note that LTE makes this more complicated as it adds 22 additional frequency bands.

Carrier-locked phones are likely to lead to a drawer full of phones you cannot use any longer.

Voice and SMS service, once you understand unlocking, and the need for a "quad band" phone, turns out to be pretty easy. That's because the world standardized on four frequency bands for voice use. If you have a "quad band" GSM phone, your phone is set to handle 3G/4G cell phone service, from a voice/data perspective, in any country in the world.

Data service, on the other hand, gets pretty tricky. With the quest for speed in the cell phone data world… first 2G, then 3G, now 4G and LTE, and in the future 5G, the standardization has fallen by the wayside. So if you buy a phone to use in your travels, you need to research where you are planning to travel, what the LTE phone standard is there, and make sure your phone can handle the higher speed data frequencies in that region (if speed matters to you).

Frequency compatibility is complicated by two factors:

1. The same phone, for example "Samsung Galaxy S3," was sold in about 10 different models with completely different frequency coverage. So you have to know your EXACT model.
2. The competitive race for more speed and more customers has the cell companies scrambling and changing offerings on a regular basis. So if you find a website with what looks like good info, it may be dated. A website that looks useful for is https://frequencycheck.com

The Downside to Local Sim Cards

The two major downsides to using local sim cards are:

1. Your phone number is always changing;
2. Managing your phone minutes and data plans can be sometimes quite daunting, as every carrier in every country has a different method. This can be especially difficult in a country that doesn't use English.

To help with the changing phone number issue, we added a "contact us" page on our website that we always keep updated with our local cell phone numbers, and tell our family and friends that if they ever need to contact us in a hurry, that's the place to go.

For managing the phone minutes and data, many carriers now have an app that can help. But not all cell phone carriers have an English app or utility that will help you recharge your phone and buy plans. (tourist countries, usually do; non-tourist countries, sometimes maybe). For us Indonesia was the most confusing. Their primary provider has very quirky plans, and very few people speak English (at least where we were cruising). It usually takes a local to explain the best / cheapest plan to you.

Some countries/carriers market "tourist sims" that are designed for fly-in tourists on a short vacation. These come pre-loaded with a data plan for a given period of time. These are worth exploring if you are only staying a short time.

Since we left the U.S. in 2007, we have visited roughly 30 countries in the Americas, Pacific Ocean, Australia and NZ, SE Asia, and Europe. The ONLY country where "buy a sim on arrival" didn't work was in Costa Rica in 2009, and this has been corrected since.

Coming Up in Future Articles:

Part 2 – Ditch the payments, but keep your US number (my move to Google Voice)

Part 3 – Paid "world roaming" options

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Cell Phones Part 2 - Ditch the Monthly Bill, Keep the Number

Published April 20, 2018
Submitted by Sherry McCampbell, *s/v Soggy Paws*

Many cruisers have trouble letting go of some of our roots. Long term telephone numbers is one example. For some of us, a phone number we have used for decades is part of our identity. There are a number of solutions—the easiest is to keep paying your cell provider even when you are out of the country and not using your US phone service. *(For context, see my article in the April Bulletin on using local sim cards when cruising in foreign countries.)*

It is possible to suspend your service while not using it, as I did for many years (ATT allows you to suspend for 6 months of the year). But recently things have changed.

Why You Can't Just Suspend Your Service

Starting in about 2014 many financial websites, in an attempt to increase security for their customers, started using what's called Two-Factor Authentication (2FA). With 2FA, when you log in to a website, the website sends to your authorized communication mechanism (usually your phone), a special one-time code. You then enter the one-time code to be fully signed on to the website. This keeps someone who has fraudulently acquired your username and password from getting logged in to your bank account. (Presumably the thief has not also stolen your phone).

Most US financial entities aren't set up to use a foreign cell phone number as an "authorized communication mechanism". Most, but not all, allow you to use an email address. But there are some problems/risks with only having an email address as your 2FA "authorized communication". So, starting in 2014 I decided that I could no longer put my AT&T phone service on hold. I had to keep it active year-round, in case I needed to receive a text message or phone call to verify my identity for website access and certain other financial transactions. I added a $5/mo feature that let me receive phone calls and text messages overseas. Now I was paying about $55/mo for 12 months instead of $50/mo for 6 months. That adds up!

The Skype Fail

My first attempt to solve this problem was to buy a Skype phone number. I bought a year plan for around $15 and got assigned a phone number, then discovered I could receive texts on it, but not send texts. This wouldn't work, because many services require you to authenticate your "authorized communication method" by responding to a text.

Google Voice – One Solution

In 2017 I heard about Google Voice (GV). It seemed too good to be true. A way to keep the number I'd been using for 20 years now, without paying for a monthly plan in the US that I only used 1-2 months a year. After experimenting with having Google Voice answer my voicemails (which worked very well), I finally

got the courage to port my AT&T mobile number to Google Voice. There is a website to do it, and in the process, my AT&T plan was automatically cancelled. There is a one-time cost of $20 to do the changeover, and no monthly cost. If I decide that I want to do something different, and want to move my number to another US carrier, it can be done just as simply.

The catch is that you have to have another US number that Google Voice can forward the calls to. I signed up for a Pay-As-You-Go plan with H20WirelessNow.com (there are several other similar alternatives, including one offered by Walmart). For $10, H2OWireless will express mail you a US sim card, and then you go online and pick your phone number—you can select your area code. When in the U.S, I use this sim with a $30/mo "unlimited" plan. When we leave the country, I switch the plan to "pay per minutes", which then drops the cost to $10 every 90 days…far cheaper than the $55/mo I was paying for my AT&T number/service. Note: This assumes that your cell phone is not locked to your old carrier.

Now, when someone texts my US number, I receive the text almost immediately via both the Google Voice app on my phone, and via Gmail. When someone calls my US number, it is automatically forwarded to the US phone number I have designated. Since the sim for my US number is in my wallet instead of my phone, the call goes directly to voicemail, and is captured by Google Voice. If the caller leaves a voice mail, Google Voice transcribes it and emails it to me, or I can pick up the actual voice mail using the Google Voice app (Android/ iDevice), or via a website browser.

The Quirks of Google Voice

There are a couple of downsides to Google Voice. (1) You must physically be in the lower 48 States to sign up for the service and get a GV number. You cannot port a number from outside the U.S. You have to have at least one local (US) phone to forward your GV number to, and that number must be active when you set the service up. (2) Google Voice cannot forward to an overseas number. (3) Google does not recommend Voice to be used for business purposes although fellow cruiser/SSCA Commodore Dave Skolnick has successfully done so for five years. (4) There is no real person to talk to for help. Google provides a website / forum, but there is no one to call to get problems resolved. GV does not forward to non-US numbers consistently although you can use GV through its web interface and a computer headset for calls anywhere. (5) There are sometimes unexplained outages and glitches in Google Voice.

Receiving Google Voice Calls

There are three ways to receive a call when someone calls your US GV number.

(1) Forward to another US number.

(2) Forward to Google Hangouts, and it will "ring" on your cell phone using the Google Hangouts app, no matter where in the world you are (usually), as long as you have any data/wifi connection. Google Hangouts is another Google app that uses data (not phone) to make and receive calls.

(3) Let Google take a voice mail, and it is recorded and/or emailed to you. You can read the email as a Gmail message, and you can listen to the recorded call in either Google Voice or Google Hangouts.

From the caller's perspective, the call is billed as if it is made from their phone (wherever/however that occurs) to a US number.

To get a Google Voice Account

While logged into your Google account, on a computer desktop browser (not a phone browser), go to http://www.google.com/voice and follow the prompts, then click the link to choose a number. Even if you plan to port your own number to Google Voice, you must first select a GV number during the sign up process.

To complete the process you have to verify at least one forwarding phone on the account per instructions. This phone must be a US number.

Users outside of the US can use Google Hangouts to make international calls at affordable rates.

Alternatives

If you need something that actually has "customer support" and is hopefully more reliable, there are numerous other, affordable options for small business telephony, including "cloud" hosted or locally-managed VoIP services.

Next month we'll finish our phone communications thoughts with an article on other global roaming options besides Google Voice.

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An Overview of Global Roaming Phone and Data Options

Published 5/20/2018
Submitted by Commodore Sherry McCampbell, *s/v Soggy Paws*

When extended-range cruisers talk about global roaming options, the most frequently mentioned nowadays are Google's Project Fi, the Iridium GO! and T-Mobile's Global Roaming. There are others, but these are the top three.

Project Fi is a flat-rate replacement for your U.S. cell plan that also offers high speed data, calls, and text in the U.S. and in over 170 countries. Google uses cell towers from 3 U.S. carriers (Sprint, T-Mobile, and U.S. Cellular) and WiFi, and claims to intelligently switch your phone seamlessly between them to achieve the best data speeds while limiting the amount of data used.

The plan is simple, with few gimmicks. You pay $20 per month for unlimited talk and texting, and a flat rate of $10 per gigabyte of data used. At the start of each month you estimate how much data you'll use (by the gigabyte) and pay for that amount — at the end of the month you'll receive either a refund for data you didn't use or pay a little extra on the next bill for data overages.

The only payment gimmick is called "Bill Protection", which offers a cap on payments for data, but not a cap on data. So, in theory, for an individual, you pay $20 for service, $60 for 6GB of data, but if you go over 6GB in a month, you don't pay more. (However, if the data used is greater than 15GB, then Fi may slow the data speed to 256kbps).

International data is a part of your standard data plan on Project Fi, so the data you use while traveling (in any of the supported countries) costs the same as in the U.S. Unlimited international texts are also included in the plan. If you're using cell coverage, calls to/from international destinations cost 20¢ per minute. If you're calling over WiFi, per-minute costs vary based on which country you're calling, and you're charged only for outbound calls.

In looking at the list of supported countries is extensive. You should check the list carefully for countries in the areas you plan to cruise.

One significant catch with Project Fi is that Google supports a very limited number of cell phone models on this plan—mostly those offered by Google. They do not currently support the iPhone. There are unique software and hardware requirements for Project Fi phones—to be able to switch back and forth between various carriers and open WiFi, automatically, without reprogramming, changing settings or switching SIMs. The least expensive phone offered that is approved by Google is the Android One Moto X4, at $399 USD. If you already own a Project Fi-compatible phone, you may use it on the network.

More info: https://fi.google.com

T-Mobile: The latest offering from T-Mobile, similar to Project Fi, is the T-Mobile One plan. For a single line, T-Mobile One costs $70 USD per month, with unlimited data in the US and unlimited 2G data and text internationally in 140 countries. (The cost is less per line if you have multiple lines). There are add-

ons to the One Plan that give you access to faster international data and more features. But if you plan to cruise outside the U.S. for extended periods, the most important qualifier is this:

"Not for extended international use; you must reside in the U.S. and primary usage must occur on our U.S. network. Device must register on our U.S. network before international use. Service may be terminated or restricted for excessive roaming or misuse."

Be forewarned that the 2G data rate on the basic International plan, is VERY slow if you are used to standard U.S. data rates. It will be barely usable to email, much less use Facebook and posting video to awe your friends.

For cruisers mostly cruising in the U.S., with a few months in the Bahamas or Caribbean every year, T-Mobile might be a viable option. But clearly for a long-range cruiser, T-Mobile is not the solution.

AT&T, the other major cell carrier in the U.S. also offers international plans in various forms. But all of their plans are also designed for the traveler on vacation, not for someone trying to use data on roaming for extended periods.

Iridium GO!: The Iridium GO! is a separate piece of hardware that uses the Iridium Satellite Network to provide a hot-spot for use by any WiFi-capable device. The Iridium network is the only truly global satellite network. (Even Inmarsat has a dead spot in the Indian Ocean, and doesn't work well in higher latitudes).

The basic GO! device sells for around $800 USD, and the "marine package" which includes the GO!, and Iridium SIM, and an external antenna setup (recommended by most cruisers) is $1150 USD. There is a $50 activation fee, and then you can either buy "minutes" or buy an unlimited monthly plan. The unlimited monthly plan costs $139/month and provides 150 voice minutes, "unlimited" data, and unlimited text messaging. This is the plan that many ocean-crossing cruisers are opting for. You can start and suspend your plan on a monthly basis, so if you're in port with a local SIM card for a couple of months, you don't need to keep paying the monthly fee.

Iridium provides apps for Android and iDevices to help manage the setup, and to send and receive email and text messages.

The downside of the "Go" as a cruising solution (besides the expense) is that the data rates are very slow. Think 1990's dial-up speeds. To quote circumnavigator Behan Gifford on *s/v Totem*,

"It's good to understand upfront three things that the GO! is not. First, it's not a satellite hotspot that brings beautiful internet to meet all of your mid-ocean browsing dreams. The GO! only supports applications specifically designed to work with it. Second, it's not fast enough for anything remotely resembling "normal" internet use. Even when there's a great connection, it's VERY slow. It's still pretty fantastic to get weather data, email, and update social media from the middle of nowhere. Last, it's not

a satellite phone that will just ring anytime Aunt Esther wants to call you. Placing a call through the app is straightforward, but you can only receive calls if the app is open and device connected to the GO."

Note that a Pactor 4 modem, speed-wise, will transmit data faster on a good connection than the Iridium or comparable satellite offerings.

More details,
From Iridium: https://www.iridium.com/products/iridium-go/

Typical pricing plans: Global Marine Networks SatPhoneStore Ft. Lauderdale

Totem's Excellent write-up after 2 years of use: SailingTotem.com

Other Options to Explore: GlobalStar has just come out with a GO!-like option called GlobalStar Sat-Fi. The GlobalStar network is a little bit faster than Iridium, but their coverage is mostly coastal North America. Examine closely the GlobalStar coverage map before you commit to a GlobalStar device.

Inmarsat has a similar offering, but it costs almost double the Iridium GO!, and there is still likely the issue of the dead spot in the Indian Ocean. Inmarsat has broadband satellites, so the data speeds will be faster, but the Inmarsat plans have historically been pricier.

Some cruisers are opting for the much lower-cost option of a Garmin InReach, which uses the Iridium network to send and receive text messages (no data). The device costs under $500 USD and a monthly-to-month unlimited texting plan costs $65.

New Offerings recently announced: Redport Glow (Iridium), Skyroam

Summary: There's not enough space in this short article to provide the new cruiser heading offshore with a definitive answer on how best to stay connected. But hopefully I've provided enough information to know the issues and the questions to ask when you are searching for the solution that is right for your cruising style and your budget. Anytime you see the word "unlimited" in a data plan, read the fine print!

SSCA frequently offers online Webinars that cover these topics. Be sure to watch for event announcements on the SSCA website and in the SSCA Facebook Group to take advantage of these Webinars to help in your decision-making.

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