

Tricks of our trades

I wrote down this collection of tricks and advices as if I could send it back to the clueless younger me who was preparing Karaka for sea in the polluted harbor of Hong Kong, years ago. This is all the stuff I now wish I had known earlier, but that I had to figure out little by little. I hope it will help and inspire new comers to the sailing community.

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Anodes

Dissimilar metal, if present in a saline solution such as sea water, will create an electrical current between them. The electric power generated is very small but the effects on the two metals is dramatic. One will slowly dissolve while the other one will gain matter. It is called galvanic corrosion, or electrolysis. It is something we need to be careful about on boats, especially metal boats. What happens is that some of the electrons of the weaker metal are passed on to the stronger metal. To counteract this phenomenon a piece of a weaker metal than the material the hull is made of is attached to the hull. This weaker metal will dissolve instead of the hull. Those sacrificial pieces of metal are called anodes. On a steel boat they are usually made of zinc.

The standard method for attaching those anodes to the hull is to bolt them on, but since a perfect electrical contact is primordial, it is actually much better to weld them on.

Bamboo holders

Bamboo is great. You can do all kind of things with bamboo. It is durable, quite good looking, easy to work with and easy to find. Make things out of dry bamboo or it will split with time, varnish or paint it or it will mold. The thing the most needed on a boat is storage, a place to put things so they don't fly around and make a mess. Bamboo holders are easy to make and can be used for many things, winch handles holders for example. You can also make multi-stories holders for cutlery or tooth brushes for example. For people who feel creative, those holders can be carved and decorated any way you feel.

Barbecue

A barbecue is very nice to have on board. Ours is used often for grilling fish or meat, and we have regular pizza nights as well, since it can close down to make an oven. The heat from the metallic lid is enough to create a convection effect which bakes a pizza perfectly in less than five minutes. It is also possible to smoke fish and meat but it requires a bit more time and efforts. Marine barbecues from the shop are quite neat, usually made of shiny stainless steel, and they look prim on the stern of any yacht. The only thing is that they cost a lot of money to buy, so unless you by chance manage to pick one, then you might need to make your own.

You can make your own barbecue yourself and it doesn't take much material or money, just a bit of sweat and some skills. Here is the recipe.

Take a 25Lbs propane bottle (empty of course) made of steel, and remove the valve. Fill it with water to the brim and let it sit for a few days, so that the most of the left over gas goes away. When you consider it safe, empty the water and split the bottle in half through its length. You can use a grinder(it won't explode) or an hacksaw if you don't have access to power tools. The first barbecue we made we cut open with an hacksaw and it didn't take more than four hours for two people. It will help if you cut a few holes in the bottom part, so as to increase the air intake for the fire when you close the lid, but I guess that is optional as I have seen some BBQ without.

Once the bottle is split in half, scrub its inside well with soap to remove the gas perfume deposit as it stinks. Then you need access to a welding machine to weld a mount on it, use your common sense and imagination to see what would fit your boat. It could be mounted on the rail, or sitting on four legs and a piece of wood, whatever. I think it is best if the barbecue over hangs outside the boat, for safety reasons.

The last step is to make some kind of hinges to link the two halves. I first used door hinges on mine but they melted and rusted, so I instead designed a simple hinge out of a couple plates of stainless steel and some rods. See pictures.

The first time you use your brand new barbecue, you will need to make a fierce fire and let it burn for a while, so as to remove the low quality paint the gas company used. Once the paint has peeled off, and the barbecue has cooled off, scrape the rest of the paint, sand, and repaint the outside only with high temperature paint. Don't hesitate to lay it thick or your barbecue will be rusty and won't

look very good.

Batteries

The deep cycle batteries with the best quality to price ratio are the 6 volts golf kart batteries. The brand Trojan is the most widely available with their model T105. To make a 12 volt system out of 6 volts batteries is a simple process of wiring them together properly.

Biltong

If you don't have a fridge to keep the fish meat you catch, you might consider a simple recipe to make fish jerky or more specifically fish biltong, which is the south african version of it. This recipe was passed to me by a south african so I guess you can call it biltong. Well made it is remarkably tasty and doesn't need to have that awefull fishy smell you get when you buy dried fish in the local markets. It is a particularly good way to prepare those truly huge monsters that are too tough to eat in a normal way as the biltong will be tough and chewy anyway. The recipe works well with red meat such as beef or venison as well.

You need some oily fish filets, pelagic such as tuna, bonito, mackerel, wahoo, barracuda, jack, yellow tail, etc are the best. Dorados, groupers and most reef fish don't dry so well for some reasons.

You also need a bowl of vinegar, any kind will do (don't use up all your balsamic for it because the flavor will be lost) and another bowl of spices of your choice. The traditional recipe is black pepper and coriander seeds, but really anything will do and you can be creative with the flavors. You can also do without the spices but the biltong will not be as good.

The basic idea is to take all the moisture from the meat without it spoiling during the process. It is best to use clean filets without bones or skin. Cut the meat in strips about 2 cm wide, 1 cm thick, and as long as you want although around 10 cm is the best for a quick individual snack.

Drop the strips of meat into the vinegar for about 30 seconds, so as to let the vinegar acids cook the outer layer of meat. It should turn a bit white. The next step is to roll the meat in the spices so as to cover it with it. Once you have your meat covered with spice, take a sail repair needle and some heavy twine and make a string of meat, going twice through with the needle preferably through a thick part of your fish strips. I find it best not to make the strings too long, a couple feet at the most, because if your knot comes lose like that you loose less overboard. Attach the string somewhere outside, the ideal being out of the sun but exposed to the wind. The wind dries the fish, while the sun makes it sweat. Depending on the weather, it might take a couple days to be cured, but in some areas it takes longer and yet in some others it will never dry. In really humid and windless climate you might have to take the whole lot inside the boat at night. Never leave it under the rain either. For really humid climates an alternative recipe is to cook the strips of meat just like if you wanted to have it for diner, make a nice sauce and fry it or bake it, and then hang it in the wind just the same. The cooked fish will dry and it is pretty nice as well.

Once dry it will keep for a couple months although it usually gets eaten faster than that especially if let to hang outside where everybody can pick at it all day long.

If the fish smells real bad and becomes goeey instead of dry, throw it away, use it as bait or feed it to the cat.

Bleeding fish

Some of the fish you catch taste much better if you bleed them. All tunas and most sharks will be greatly improved by bleeding. To bleed a fish, put him still alive head first into a bucket and either cut its throat, the narrow bridge between the belly and the under side of the mouth, or sever the arteries on both side by making a deep slit just behind the side fins, in its armpit in a sense. In both case thick and dark blood should gush and the fish should die within minutes.

Boat maintenance book

There is always something to fix on a sail boat and most of the systems are complex and

intimidating to the neophyte.

An excellent source of information about how to instal and troubleshoot boat systems is the famous book by Nigel Calder called "The boat owner's mechanical and electrical manual". I have consulted several other books about the same subjects and this one beats them all hands down. If you have a boat, you should own a copy of the latest edition.

Buckets

On board a boat, you need to have buckets. There are many use to them, from doing dishes and laundry, having a shower, bleed a fish, serve as an emergency toilet, make a musical instrument at a party, a seat for an extra guest or a bail if you are sinking. Those buckets will take a lot of abuse and you will lose many of them. If you buy the buckets they sell you in the hardware stores you'll realize they are expensive and inadequate. The best bucket available is the 5 gallons plastic bucket used for engine oil. Choose the ones with a metallic handle for extra strength when you buy your oil. You can clean the residue of oil with dish soap. To soften the edges and avoid marking your topside when you draw a bucket of water, you can seize a ring of rope around the rim.

An alternative to obtain them is that in most countries you can buy those buckets second hand for real cheap if you ask at the food markets. They come with an air tight lid and they make great containers for food storage if you buy flour, rice or oatmeal in bulk.

Cat logistics

Having a cat on board is very nice but a few points of logistic need to be considered.

Cat are usually very clean animals but they need a cat box, a nice cozy and clean place to have a crap. The perfect cat box on a boat is the radome. Discard the useless electronic inside the circular box of the radar and cut open a door in the cover. Fill the bottom part with sand from the beach or better even, some pebbles from a construction site, and let kitty have a ball.

Another option I think would work well is an old TV.

To clean the box, just dump the contents overboard, rinse a couple times and refill. It is waterproof but you will need to make sure nobody step or sit on it as it is quite fragile.

To store extra cat litter, a bucket with a lid is ideal. If the litter get soaked and you don't have clean replacement, use shredded news paper, or even a bare box in a pinch.

Dry cat food under the form of pellets keeps forever and is easy to store. The only catch is that a cat will not it dry food that has become soggy, so the bag of food need to be sealed to preserve freshness. For that reason it is best to buy the food in small bags instead of in bulk. As an alternative, cats love dried fish.

A cat that never leaves the boat does not need to be neutered or even vaccinated so you can pick up a kitten anywhere and not bother with vets and papers. Even with a legally registered cat, it is still illegal to import pets into most country without going through some incredible amount of red tape and paperwork, and it usually involves some time in a cage as quarantine. Luckily for cats on sailboats, they don't need to go through all that to see the world. In most country they will ask if you have a pet when you arrive, but if you assure the quarantine officers that the animal never leaves the ship, it won't be a problem and they leave it at that. Even the strictest and most stubborn of quarantine officers can be swayed if the cat is cute enough. Cats are perfectly happy staying on board all the time anyway. When tied to a dock, it is best to attach the cat with a leach to make sure it doesn't escape and run ashore, as it could be expensive for you and disastrous for the cat if it is caught ashore illegally. In the official paperwork, the penalty is called "destruction of the animal".

It is a good idea to ensure that your cat is scared to death of the water and that it understands that the edge of the boat is a dangerous place. Most of the cause of death for ship cats is reported to be falling overboard.

Coconuts

Coconuts are wonderful. They are found on most shores in the tropics and except for some specific areas like the San Blas island in Panama, they are free for the taking.

Young coconuts are for drinking only as the flesh has not developed yet. All the nutrients are in the juice. You can recognize young coconuts by the fact they are still on the tree or else by their color and texture. They have a smooth and firm and light green. To open one, you need a machete and something hard to put the coconut on. Hold it by the top, which is the side where it was attached to the tree. The other side of the coconut (the bottom) is three faced, forming a point. Chop the edges off on all three side with clean sharp cuts. If you did it right, you will see some of the inner shell showing through the fiber. On young coconut it is soft and you can poke a hole through it and drink the excellent juice in it. Sometime it is fuzzy like champagne. With slightly more mature coconuts, once you are done drinking it, you can hack it in half and eat the gooey flesh inside, using a spoon or a sliver of the outer shell.

Mature coconuts are the ones found on the ground after they have fallen from the tree. They are usually dark brown or gray in appearance with a tough wrinkled outer shell. Before trying to open one you need to make sure it is not cracked by shaking it. If you can hear water sloshing inside it is good, if not discard it. If water drips off it when you pick it up, it is not good either.

To open a mature coconut, hold it in your weak hand, the top (side that used to be attached to the tree) away from you. The nut is at the bottom, toward you. The top has three lumps meeting at the stump, and three hollows. Hit the middle of each hollow with a sharp blow of the machete (be careful with you hand under it). Your machete will penetrate the fiber and come to rest against the hard inner shell. While your machete is imbedded in the fiber of the top of the coconut, grab the blade and twist it sideways, so as to pry the fiber away from the inner shell. You might need to go a few times round to be successful. Once the fiber is somehow loose near the top, grab one of the pieces and pull it off the inner nut. It will come off with a ripping sound. Once you have the three sides of fiber removed, you can open the hard nut by taping the back side of the blade of your machete around the bottom of the coconut (the side opposite the three holes) until a crack develops and a round piece comes off. That way you can drink the juice.

Another way to open it is to tap the machete all around the circumference of the nut until it cracks neatly in two equal parts. You need to do this over a glass if you want to save the juice. The flesh of the mature coconut is thick and firm, with a very white color.

You can make coco milk by grating the white flesh of the coconut with a special grater or with a cheese grater, and then put the gratings in a pan with the juice and mix it. Then grab a hand full of the grated flesh and press is as hard as you can until a white goo come out. That is your coco milk and it is excellent in many kind of recipe. You can use the left over dry fiber in cakes or breads, if you have got all the milk out though, this should just be bland cardboard tasting fiber. However, if the grated coconut is used before squeezing the milk, it will add flavor to any meal especially Thai curries or fish dishes, the recipes are countless.

The shell of the coconut is very hard and can be carved into bowls, ashtrays, cups or even jewelry.

Courtesy flags

When you visit a country the law requires that you fly a small flag of the visited country in your rigging. This small flag is called a courtesy flag. Marine stores sell flags for the surrounding countries for about 10 or 15 dollars each. There is a big business in them.

Thing is, you don't need them.

First of all, in the vast majority of countries, nobody will ask where is your flag or bother whether you have one or not. The only people who might say something are the various officials who might come to visit your boat. Normal people in the street are not even aware you need one.

If some petty official asks you why you are not flying a courtesy flag, this will happen either on arrival or on departure.

If it is on arrival, the best answer is that you haven't been able to purchase one in the country you came from. Promise you will get one as soon as possible.

If it is on departure, most likely you will have been in the country for a while, and then you can say that your flag got ripped in the wind and that you had to take it down. You can then say that you are currently sewing it back together, but make sure not to say that if the troublesome official is on

board as he might ask to see it.

In case some annoying patriot gives you hassle, it is fairly easy to make a temporary flag out of cardboard and markers or paint. When it fades or falls apart after a few days you can come back to the excuse that it fell apart. You won't even have to lie this time.

Of course, in extreme cases you might have to buy one or to sew one yourself but it doesn't happen often. Use your judgment.

Crew moral

To keep your crew in high spirits during long and arduous crossings, a simple use of psychology does wonders. The rule is that the crew is happier if the performances are better than expected, and alternatively, feels miserable if the performances are worst than expected. That means that the performances comes second, the crew's happiness depends primarily on expectations.

To ensure good moods on board during passages, you need to lower expectations before departure.

To do that you need to be honest to start with and emphasize how rough it may get, how slow a sail boat usually is, the chances of contrary winds and bad weather, the lack of sleep and proper meals, etc. It is also good to announce an estimated time of arrival much later than your likely ETA. A good motivated crew should not be deterred by all this (and it is also a good way to make sure the crew truly is motivated). If things go wrong and the passage takes longer than expected nobody will be surprised while if all goes well every body will be pleasantly surprised.

So the key to a happy crew is to make sure you are honest to yourself and your crew and don't paint an idyllic picture of the crossings to come.

In the same order of idea, when you are almost there, avoid telling the crew things like "three more days to go guys" as things might go wrong, the wind might turn, and if it take four more days to go, the last day you will face a lot of discontent. Better to talk about miles to go than days to go.

Fines

Sometimes, because you didn't know, because you didn't care, or because you didn't think it mattered, you will break some minor immigration or custom law. Some official will reprimand you and then charge you with a fine. Those fine can be small, or they can be incredibly heavy.

In the case of a heavy fine, you need to do everything you can to avoid paying it.

During the argument, you need to be paying close attention to the mood of the officer. You need to get him to laugh if you can, that will soften him. If you see a picture of his kids and wife, get him to talk about them. If he has a bible opened on his desk, ask him how his church is doing (even if you are a hard core atheist). You need him to like you or he won't even listen to you. Be very nice and respectful, speak in his language.

If you feel him closing up or being defensive, you need to stop immediately to argue with him and either talk about something that will soften him or bite the bullet and pay the fine. If you don't he might raise it or find other offenses to charge you with.

Here are a few hints about how to lower a fine.

-Denial doesn't work. It is better to please the official by agreeing with him that you committed the offense, if such is the case. That will surprise him and it will make him think your are a decent person.

-Claim ignorance. Nobody should ignore the law but... there are many countries and there are many laws. It is impossible to know them all especially when the law contravened is not international, not obvious and more important, harmless. Express surprise and try to find examples of countries in which your offense is legal and tell an anecdote about it to emphasize how benign it is. Invent if need be.

-Minimize the impact of the offense, show that you did little wrong, that you didn't harm anybody. It is a good idea to compare your offense to a much worst one, such as "it is not like if I robbed a bank or killed my brother". Take care to avoid any reference to drugs or bombs though, people get edgy when those are mentioned.

-Ask to see the official paper on which you can read the exact legal amount for the fine (it is also a

way to make sure he is not trying to swindle you). Argue that the law is there to serve the people and that as such the fine should be according to the wrong done to the people, not according to some set amount arbitrarily decided by a random law maker who had no idea about the circumstances in which the offense was committed. Insist to your tormentor that only he is in a position to judge the severity of the offense. That is a way to boost a petty official's ego by putting him in a position to decide something with authority.

-Ask the official what is the purpose of the fine. He most likely won't have a coherent answer. Explain to him that beside paying back any harm done, a fine is not a punishment for an offense, but that the role of the fine is to ensure the law is respected, it is a deterrent. The purpose of your fine is to teach you a lesson so you don't contravene that law again. The catch is that since you committed the offense out of ignorance, you obviously won't do it again now that you know. You don't need a fine to convince you to respect that law, you just need to know about it. As such, it is evident that your fine doesn't need to be heavy.

-Ask the question about where the money from your fine will go. He probably won't have a clear answer to that one either and that's actually a good way to ensure he is not trying to get a bribe. If he is then once he admitted it you have a very strong bargaining position. In any case, tell him the money will go to the government. Tell him that you hope the government of his proud country doesn't need your committing offenses and paying fines to support its economy. Insist that since the government doesn't need or even expect the money from your fine but that you, on the other hand, really need it to support your ailing mother, sick child, broken engine, whatever, it would only be fair that the fine should be minimal.

-Once all that have been laid down as a background, you have him in a corner without him having the first clue about it. Pretend you are now ready to pay the fine, but referring to all the previous arguments, argue that since fine there has to be (since it is the law to pay a fine when an offense is committed and that you are the kind of person who respect the law), the fine should be as small as possible. He will not have a strong position to refute that and might even ask you how much you think you should pay, so go right ahead and propose a fine of one dollar. If anything it will make him laugh and you can bargain from there.

-If he tells you one dollar is nothing, it might be a good idea to tell him how I got a 53ft sailboat for that amount of money. He will express disbelief but that will divert him and it is a good way to start talking about something else to soften him, then start over. By that time he if he is still talking to you then that means he is amused and that you are doing good.

You have to play it by hear and this might not work every time but I once reduced a fine from 9600 US dollars down to 60 US dollars using those arguments in Tobago.

Fresh water and anti-fouling

Marine anti-fouling is designed to work in salt water. Boats who sail on lakes and rivers have a different kind of anti-fouling. If you take your salt water anti-fouled boat to fresh water for more than a few weeks, your anti-fouling will come off. First all the growth will die, and that is great, but then the water will make its way under the paint by osmosis and will accumulate in bubbles under the paint. With time those bubbles will spread and eventually burst, and your bottom paint will be ruined. Beware.

Grib files

At sea you need to pay attention to the weather, it goes without saying.

The best forecast available for free is what is called a Grib file. You need to download the program (for free) on the website (www.grib.us) and then connect to the internet with the program. It lets you chose the area you are going to download data for and then gives you a forecast for every three hours for seven days with wind arrows overlaid a rough map, barometric pressure lines and rain previsions. It is extremely accurate up to three days, less so afterward.

It is also possible to get the file while at sea via a satellite phone (expensive) or through the SSB radio (less expensive but complex).

Guitar storage

Playing music is very nice, but most boats are too small to make room for a guitar. Sailors who ship one anyway will find that when the boat rolls and pitches, the guitar gets trashed around. A solution is to make a mount for it. We have several instruments on board and we have two guitars and a violin mounted in various places. (see pictures)

The violin is mounted on a bulkhead, in its case. I made Z shaped pieces of aluminum and screwed them on the wall in such a way that we can put the violin case in them but they will still hold the case however rolly the boat gets. One of the guitar is mounted the same way but up and down on a door. The last guitar is mounted the same way again but on the roof of the saloon. For that one I had to make one of the Z bars to swivel. The inside of the Z bars are fitted with felt to avoid marking the finish of the guitars.

I also used the same system to mount my BMX bike in the engine room.

I was lazy and made the Z bars out of aluminum but it would look much better if they where made of varnished wood.

Guns

We have no guns on board. I used to have a .22 LR riffle but the customs seized it in Mayotte when they searched the boat. It would have been no use for defense anyway.

I don't think a gun would be much use for defense unless it is something scary and powerful like an AK47 or a shotgun, and the risk of ending up in jail in a third world country if you carry this kind of weapon on your yacht is definitely not worth it. Even with one of those, the rare case where you would use it would be a desperate one and I'd rather take my chance and do my best to avoid the situation altogether than to rely on a gun to get me out of it. I have no intention to get into open warfare with anybody over material goods and I would rather not kill another person. I don't believe I have the skill or the will power to use a gun efficiently anyway. Starting to shoot, or even just showing the gun, is a commitment and after that negotiations are out of the question, somebody will get hurt. Showing a gun implies you are ready to use it. It might discourage some attackers but it might also force them to use their own weapon. Thieves don't attack you to kill you but to take your stuff. In the worst case scenario I would give my stuff away. My life has more value than my stuff.

For cases of night burglars and pushy fishermen, some scary looking machetes, a couple spearguns and a few fit crew members would be enough of an opposition to deter attackers. Avoiding the risk in the first place is the best anyway.

On a yacht, any illegal weapon needs to be concealed from the authorities not only during border crossing but most of the time as well in case of police control. Outside of the US, very few countries will allow possession of fire arms to civilians. Fines and jail sentences are applied, especially to visiting foreigners. Officials will come and board to search your ship at random time, and there is little one can do about it. It is rare but one time is enough. Getting a license is a solution but it costs and it is usually impossible to get one in a foreign country if you are not a resident. With a license, you still have to declare your gun at custom on arrival in the country, and the normal procedure if you do that is for them to lock your gun in a safe at the police station until you depart, which apart from being an extra hassle will not help much in case you need the gun while in the country. A concealed weapon is no use in case of a surprise boarding from thieves, as getting it out of its hiding place while threatened by armed robbers would be tricky and dangerous. The very idea of a surprise attack is to catch you unprepared.

Showing your weapon around or warning locals that you are armed is likely to prevent you from attacks but will also show the locals that you don't trust them, which is likely to insult them. Insulting the locals is never a good idea. It will also very likely attract the authorities...

Getting hold of a decent gun is harder than it seems too and they are expensive. They don't like humidity and salty air and deteriorate quickly.

So altogether, I don't think having a gun on a yacht is a good idea.

Heat exchanger cleaning

Marine engines are cooled not by air but by salt water being put in contact with the coolant in the engine. The salt water is then evacuated and it carries away the heat. The contact is made through a heat exchanger, which is a big pipe with many smaller pipes inside. Inside the small pipe circulates the cold salt water and around them the warm engine coolant.

With time, the salt water leave a deposit of salt and calcareous matter, and the small pipes become clogged. As less water can go through and the wall separating the cold from the warm water is thicker, the engine overheats. If the engine overheats too much, it can cause all sorts of very serious trouble. So if your engine chronically overheats but you can't seem to find the cause, it is very likely your heat exchanger is clogged. To clean it you need to open both ends, scrub everything you have access to, and then push something through every single of the small pipes. What works best is the cleaning tool for a 22LR rifle. You need to be careful what you use to clean those small pipes because if you poke a hole through their walls your heat exchanger is ruined.

An alternative to cleaning the heat exchanger by opening it is to soak it with some kind of acidic solution, like vinegar for example. Yet another option is to take your boat up a fresh water river or a lake for a few weeks, and motor around. The fresh water will clean your heat exchanger for you.

I see a white boat and I want it painted black

Most boats are painted white. Why, I don't know. To all look the same presumably. My boat used to be painted as white as everyone else but since I have painted her black I have found several good advantages to it.

She looks like a pirate ship.

Everybody notices us, we stand out in a crowd. (it also helps when you come back home drunk so you don't get on the wrong boat)

Dirt and rust streaks won't show.

We can use cheap and strong car tires for fenders without worrying about making black streaks on the topsides.

Bad paint jobs won't show (shadows, lumps and drips are black too)

You can buy paint in bulk from fishing boats and cargo ships.

And finally, it is a myth that it gets warmer inside a boat painted black. I've lived in the tropics for years in the same boat painted first white and then black, and I haven't noticed a difference.

Jib hanks

Some boat have rolling jib as their head sails, but without entering the polemic, I prefer hanked on sails. Hanks are some kind of clips that are fixed on the sail and that you attach to the fore stay. They hold the sail close the the cable when it is up, but allow for the sail to slide up and down when it is hoisted and dropped. Hanks are usually made of bronze and are quite durable. Their only weak point is the way they are attached to the sail. Most hanks have a stupid little appendage that is bent in after being passed through the grommet on the sail. Once thus mounted, usually when they are new, they then are considered permanent. The problem arise when there is a repair to be made to the sail and the hanks need to be removed, as it is near impossible to remove them without breaking them. Each hank cost between 6 and 10 dollars and there are usually over 15 of them on a normal jib. It goes quickly up to a lot of money to replace them. A way to salvage those broken hanks is to drill two small holes, one near the broken part and one on the head of the hank (see picture) and to sew the hank on the sail with a needle and some strong twine. It is best to make a figure eight between the two holes and to finish by a lashing, a series of hitches.

Jimmy Cornell

Jimmy Cornell is a sailor who has been three times around the world last time I counted and who is famous for having put together two of the most useful databases available for the cruising community.

The first one is a book called "World Cruising Routes" in which he explains the world's weather

patterns and gives information for most of the passages a sailor might want to undertake, including way points, expected weather, winds, currents and storms. It is invaluable when planning a voyage. It is a good idea to have a copy on board if you intend to sail to far off destinations.

The complementary volume is called "World Cruising Destination" and is not usually worth getting a print copy of. It gives details of countries and ports with info about clearance, facilities and such. As a cruising guide book, it is necessarily out of date as soon as it is printed, so that the Cornell family started an excellent website called www.noonsite.com where all the info they post is available for free on line. It is constantly updated by input from people who are actually sailing out there and that makes it the best source of information about the countries you intend to visit by boat to be found anywhere.

Marine toilets

Marine toilets can be a source of endless worry for the boat owner, but it doesn't need to be. The standard marine toilet is a complex and fickle piece of engineering that more often than not gets clogged and requires to be taken apart to be cleaned (a lovely job). You can't put paper into them, they often break down, they are complex to operate for the guests who have never used them before, and they can create a siphon that could sink your boat if not operated properly. In a word, they are a mess.

Luckily there is an alternative. There is a company called Lavac who designed a type of marine toilet that are simple to use, strong and reliable. Just what you want.

They work by a system of vacuum. You close the lid and apply pressure on it with your hand or your knee, effectively making it air proof. Then you pump about 20 times a standard diaphragm bilge pump mounted after the bowl, on the outtake pipe. At first it pumps the waste out, then it pumps the air inside the bowl and creates a vacuum, this vacuum siphons in some clean water, and as you keep pumping, the water circulate through the whole system, flushing it. Simple and efficient.

Lavac toilets are expensive but well worth it, but if you want to save money and can't manage to purchase one, you can make your own for cheap by adapting a normal marine toilet. You need to make a proper seal to the lid, some sticky foam would do. When rigging the pipes you need to make sure both the intake and the outtake have an anti-siphon loops going higher than the water line even when the boat is heeling. On the intake pipe, at the highest point, you need to make an anti siphon mechanism. Poke or punch a hole through your pipe and plug it with the little plastic cap at the butt of a ball pen. Poke a tiny hole with a needle through the ball pen cap and that's it. When you pump a little air will get through the tiny hole but not enough to break the siphon, but when you stop pumping, this little amount of air will be enough to stop the water from over filling the bowl. To adjust the amount of water left in the bowl after flushing, you need to experiment with different size of tiny holes in the ball pen cap. Sometime after a few years of use the tiny hole might get clogged with salt (only salt, it is on the clean side of things) and in that case the bowl will overflow as the siphon can go on unbroken. To fix this just make sure the hole is open.

Multitool

On board a boat, there is always something broken. You constantly have to mend and fix things. Most of those things are small and can be fixed easily and quickly. The best tool for those jobs is a multitool knife of the "Leatherman" kind. I have a "Wave" and I think it is the best. Leatherman tools have a life warranty for free so that when yours starts to miss a few tools and won't lock anymore, you can send it for a refit and it will come back as new.

To make sure you always know where your knife is, you need either to have it attached to your belt, which is inconvenient when you are going around naked or in swim shorts, or you need to find a place to mount it inside the boat. I have mounted the pouch of mine to the wall near the companionway stairs, a central place on the boat. Everybody can use it and it is always available as everybody puts it back inside its pouch immediately after use.

Navigation

Fortunately, with the advent of the GPS system, nobody has to use a sextant anymore. Celestial navigation is complex, inaccurate and slow, and thus should be considered unsafe and obsolete. Despite this, celestial navigation still has a lot of romantic appeal to people who have never tried it or who have never had to rely on an accurate fix to ensure their safety. It is still a perfectly valid back up system, but it has been relegated to just that, a back up. The GPS system is reliable, easy to use, fast and accurate beyond belief. Not using a GPS while sailing makes everybody on board take unnecessary risks. It is also much more work.

The GPS system automatically updates your position every second with an accuracy of roughly 10 meters. The best navigator using celestial navigation will be hard pressed to get a position within a few miles in less than 20 minutes. It makes a difference when sailing between coral atolls or entering a bay while running in front of a storm for example.

All it takes to prevent you from calculating your position using a sextant is to misplace your pencil so you can't write down your calculations. You also need an accurate time piece, and if your watch is off by merely a few seconds, your fix will be miles off.

The argument that you can not rely on the GPS because it is an electronic device is flawed since you can get as many as you want for cheap for back ups, including battery powered ones, for the price of a sextant. Furthermore, the problem is not solved by using a sextant. GPS units nowadays are no more likely to fail than a mechanical sextant is. You can drop a sextant or spill your coffee over your almanac and that would ruin them too.

You can nowadays get little computers who store the almanac and perform all the calculations for you if you give it the sight reductions from the sextant. It cut down the math and the book consulting but if you are going to rely on a little electronic device, why not use a GPS instead?

Some people argue that the GPS system is sometime down for maintenance, or that the satellites are old and will fall down any day. There is little truth in that but even if it was the case it is still better than a system that does not work at all when the sky is overcast and when you can't see the sun or the stars.

Celestial navigation is a fine art, but the modern sailor should use the most appropriate tools to keep himself, his crew and his ship safe. I'm not against celestial navigation per se, I guess it can be rewarding and challenging to use it now and then, but I don't think it should be tooted as an essential navigation skill as most navigation books do. I think it is misleading. I also think the authors of navigation books are for the most part older sailors who are expert in celestial navigation and who have spent all their lives basking in the glory of being expert in their art. They are now faced with the fact that their expertise is obsolete and it must hurt. I see their feeble attempt at impressing the mind of would be sailors with the need of learning celestial navigation as an attempt to salvage their own self importance. If celestial navigation is now useless because any random landlubber can find his precise location at the push of a button, then there is no need for extensive and expensive navigation courses, navigation experts or their arcane knowledge. I'm sad for those old salts left behind by technology but I recommend to all sailors to store their sextant away and make sure they know how to use their GPS.

Navigation computer system

Having a laptop for navigation is a smart move. Ship chandlers and marine stores try to sell chart plotters units to everybody and the only reason I can see for that is that they cost a lot of money. A laptop does the same job and more, and is much cheaper. You can usually find old laptops, up to ten years old, that are thrown away by people who upgraded. You can get them for less than 50 dollars or even for free if you ask around. There are a lot of them. You don't need something fancy anyway.

On your navigation laptop, you will need to instal some programs. The best is to ask around the anchorage. Everybody has some version or another of Maxsea or Cmap and you can copy them (it is illegal of course, they are what you call pirate versions). Otherwise there is an excellent freeware version to download on www.navigatrix.org. Those programs have charts covering the entire world

with great degrees of accuracy and you can exchange charts with other boats when you get somewhere that is not covered by your database. The whole world takes about 2 GB of storage. To get that amount of charts for a chart plotter would cost nearly 10 000 dollars.

Once you have your program working, you need a cable to connect the laptop to the GPS. Usually it needs to be a USB to serial cable, and some settings need to be set for it to work. It is pretty straight forward and all GPS are designed to allow it, just read the manual.

It is usually a good idea to keep the navigation laptop dedicated to navigation and not to use it for internet or anything else, so as not to burden it and risk having it fail or get infected by a virus. Mine is bolted to the nav table and never moves from there. Don't expect it to last forever though. Mine last a couple years at the most, but you can always try to have one spare, especially if you get them for cheap. Most boats also have a nicer laptop for emails and entertainment, and they usually have a backup of the nav programs on them to be used in case the nav laptop fails, as well as a couple CD or hard drives with back ups of the charts.

A word of warning, electronic charts should not replace paper charts in any case. Computers fail all the time.

The last trick about laptops on boats is that they can run directly on the 12 volts system. Some don't but they are rare and most laptop will happily accept a 12 volts Dc input. You only need to remove the batteries(12 volts would ruin them otherwise, they need around 19 or 20 volts) and cut the power cable somewhere between the laptop and the transformer (you don't want to use the transformer), then splice the two cables to the positive and negative, making sure you checked for polarity. That's it. No need for the waste of converting the Dc power from the batteries to Ac power with an inverter, and then back to Dc again with the transformer. It saves a lot of power and you never have to rely on a fickle inverter again.

North, magnetic compasses and steel hulls

Several hundred years ago, the Chinese found out that a piece of metal, if let be, will always point in the same direction. They invented the compass. Their boats were made of bamboo and it worked well for them, but they didn't foresee the problems I would face by trying to use the stuff on a boat made of steel itself. On a steel boat, a normal compass doesn't work. The magnetism of the hull gets in the way. That is a problem. On a boat, you need to know where you are going if you ever want to get there, there are no roads to follow or street signs. Another problem with the magnetic compass is that the magnetic pole is constantly moving about. The reading from a compass needs to be compensated. And if that was not enough, you need to recalibrate the compass when you sail to different area of the globe. There are clever ways around all that but it takes a professional to adjust a marine compass, and it takes an expert professional to do so for a steel boat. I am neither a professional nor an expert so since I can't do this myself I decided to do without a compass instead.

To know where we're going, we use the reading on the GPS screen, that is mounted conveniently in view of the helmsman. It gives a digital reading of the course on ground, that is the way the boat is actually going, as opposed to the way the boat is pointing. It takes a bit of practice to get used to, but is more accurate than a compass. The other advantage (other than it works and the compass doesn't) is that it tells the information you really want to know, including drift from current and leeway. That is very useful to avoid rocks and reefs. Also, since the GPS gives me a course to steer according to the true north (the north of the north pole, not of the magnetic pole) I can relate it directly to the charts without compensating, which saves time and prevent possible errors in navigation.

For kicks we have a compass anyway, mounted on a wooden table on the aft deck, but even that one has a hard time finding the north. The only way to find out where the north is during the day is to stand on top of the cabin with a hand held compass.

At night, there are two accurate ways to find the north using the stars. If you are in the northern hemisphere you have the star called Polaris in your sky. It is the north star. To find it you need to locate the big deeper, also called Ursa Mayor, shaped like a big saucepan. Up and in line with the

two stars opposite the handle of the saucepan you have a faint star in the middle of a clear patch and that is it. The north star is only 1 degree away from the axis of the earth so when the earth turns, the star stays almost stationary in the sky. All the other stars seem to be revolving around it. Once you have found the north star, imagine a line going from it down to the horizon, and that is true north. (see drawing)

In the southern sky you don't have any stars near the axis of the Earth so finding the south is a bit more complex. You need to use two constellations for that. One is called the southern cross and the other the pointers. To find south, you need to imagine an extension to the long length of the cross, and a line perpendicular to the line formed by the two pointers. Where those two imaginary lines meet is the southern pole. From that imaginary point you need to imagine a line going down to the horizon and that is your south.(see drawing)

Pirates

I used to say pirates were not a worry but then we got attacked in Colombia and although it was mostly bad luck they got us, I can't honestly say pirates are not a worry anymore. For up to date pirate attack reports, a good reference on the internet is www.noonsite.com , which has a piracy page. Piracy these days is considered to be limited to well defined areas, mostly the red sea, Indonesia and some areas in the Caribbean, mostly Venezuela and Haiti. The bulk of the attacks occur on big commercial ships and are the planned acts of organized mafias. Opportunist attacks on yachts are rare but 2009 and 2010 were bad years and it seems to be getting worse.

There are 3 main kind of pirate attacks on yachts.

The worse one is the kind that is happening mostly around the red sea, where organized mafias take over boats and keep them hostages for ransom. They usually come heavily armed and ready to kill if they meet resistance. They don't care about the boat but about the people on board and the money they can ask for them. Yacht have been taken over as far as 600 miles offshore and the area is considered very dangerous by the sailing community. Related to this type is the possibility of being looted by a crew of desperate haitians trying to flee their country in a badly built and unseaworthy craft with no food and no water storage and who would try to steal your boat to save their lives. The risk is now increased after the earthquake that destroyed any chance they had of living a decent life in the near future. Those are a worry and I'm not sure what can be done against them except avoiding the risky areas, sailing in convoy with other boats and keeping a tight watch if you have to sail in a risky area and taking evasive action if suspicious vessels are sighted.

The second kind is the one we experienced, a boarding while underway by pirates in a small craft who approach the yacht pretending to be harmless fishermen, asking for water or cigarettes and who then take the boat by surprise by jumping on board with weapons, usually small guns and machetes. They are not usually violent unless they meet resistance, and are only interested in stuff they can use themselves or resale easily. How thorough they are in their search for valuables depends on the time they estimate they have before risking being intercepted by the police or the coast guards. A good way to make them go fast is to tell them the police is warned and on its way. Giving them what they want is also a good policy as people who resisted have been hurt or even killed. There are ways to keep them off the boat and every skipper will tell you he has an infallible system, but from my experience, short of carrying heavy weaponry including shotguns, hand grenades and being very suspicious of any boat that comes closer than 50 meters (which is very impractical), the average cruiser has little chance to prevent determined pirates to board. The areas where such attacks occur are known and special care should be taken in those areas or they should be avoided if possible, but ultimately, it boils down to bad luck if such an attack occur. They are rare and given the number of boats sailing all around the world, the risk of being boarded by pirates, statistically, is less than being mugged when walking in a city. It is just part of the risk of having a life...

The last type of pirate attacks are more a type of burglary, armed men boarding at night while anchored. Those boardings can be severe and crew have been shot, stabbed, beaten or strangled as people who wake up to find strangers in their cabin usually react violently, triggering a violent reaction in the already nervous burglars. This kind of attack occurs frequently on yacht anywhere in

the world but no more frequently than burglaries on land. A little common sense could have avoided most cases I know about. Location is a key factor, being anchored with a rich looking yacht in front of a third world slum where millions of people are struggling to survive is asking for trouble. Remote anchorages where poor fishermen hang out present the same chance for opportunists, who might see this isolated pile of luxury equipment as a gift from god. A night watch in dodgy anchorages is enough to discourage most thieves.

The attitude of the crew is important too. One thing is to give the impression to would be attackers that to board this ship would mean a big fight. The best though, is to be friendly with the locals.

Learning the language, talking with people ashore, joking with kids, helping the old lady to carry her jug of water, eating in local restaurants, buying in the local market, showing interest in the people and their culture, are going to show the eventual thief that you are friendly, interesting and that stealing from you is not so nice. Looking scared of everybody, avoiding any local business, shopping and eating only in marinas and tourist spots, on the opposite side, are going to build a gap between you and the locals and they won't think twice about taking everything they can from you. Displaying a lot of riches on deck is also asking for trouble. All the expensive gear should be stashed away to avoid tempting people who might have to work years to afford equipment such as fishing reels or outboard engines. That is plain common sense that applies anywhere, not only on yachts. So there is no need to be worried about pirates, but it is important to be careful about them, the same way there is no need to be worried about barracudas or earthquakes, but it is important to be careful about them.

Pukuk or the art of salvage

“Pukuk” is a verb in the Aleut language of the people of the Bering Strait which literally mean to pick at bones. It is used as an expression meaning “to get the good stuff out of something discarded” and another definition is “to salvage without the intention of returning”.

Pukuk is not always called that but it is a very important part of the life of the sailor and can take many aspects. There is a fine line between the act of pukuk and the act of stealing and it needs to be acknowledged. The difference is that to steal is to take something that belongs to somebody without his consent while pukuk is to take something the previous owner has discarded and will not miss. The dodgy gray area in between is about taking without asking stuff that the owner will not miss because he doesn't realize he owns it anymore. While everybody should try to avoid stealing things from people who might need them, a cost conscious sailor will always be open to the opportunity of a nice pukuk.

Pukuk starts with beach combing, a mere stroll along the waterline looking for washed out items. You can find all kind of stuff on the beach, I personally scored clothes, shoes, flip flops, jerrycans, a hand pump, a nice glass pitcher, and often some long liner's plastic buoys. Of those buoys I managed to get about 25 one time on a deserted beach, and sold them for 15 dollars each later, which goes to show that the benefits of beach combing are not trivial.

Another opportunity for a pukuk is dumpster diving, looking into dumpsters for things you might be able to use. There is an incredible amount of stuff thrown away by our society and it almost always pays to visit landfills and dumpsters. The dumpsters at the back of supermarkets or near fresh produce markets are often overflowing with edibles in good condition, most of the time still in their packaging. The best dumpstering score I have heard of was done by my younger brother who once salvaged a small car out of a landfill and then went on to travel from France to Kazakhstan and all the way back with it.

For the pukuk minded sailor, the dumpsters of marinas and boatyards are gold mines. The amount of gear discarded by wealthy yachties is astounding. In marinas you can often find boat parts, ropes, sails, dinghies and such lying around waiting to be picked up. They are usually the result of a boat owner upgrading his boat at the beginning of the sailing season. In boatyards you can always find paint brushes, sandpaper, roller trays, masking tape, buckets and interesting pieces of metal and wood, without counting the odd boat part as well.

In popular anchorages there is always a few derelicts boats moored, abandoned there by their owner

for various reasons. They usually look very bad and completely trashed, and unless some local has settled on board, they are ripe for the picking. You can salvage solar panels, winches and winch handles, wind generators, cleats, compasses and such from them. You usually have to be discreet as people might object to your right to pukuk, but I think it is obvious that salvaging unused gear that will otherwise slowly decay is a positive thing as long as you make sure the boat is not merely in storage.

On the same order of idea, you can pukuk a lot of stuff off wrecks, if you keep your eyes out for them. They are not always under water and it is frequent to find boats washed up on the beach or on a reef. Most of the valuable stuff will have been taken away unless you are lucky enough to arrive before everybody else, but the hard to get gear will more often than not still be on it. I salvaged solar panels, wind generator and winches out of a wreck from the tsunami in Malaysia and my best score was about 70 000 dollars worth of fishing equipment out of a wrecked 52 ft sport fishing boat in Costa Rica. The salvaged gear got seized in court and disappeared behind red tape but we kept a good amount of it anyway. In the San Blas islands we helped a french couple try to get their 45 ft sailboat out of the reef they were stuck on, but the boat ended up being a complete loss and they abandoned her. The locals salvaged all the gear while we were sailing in another area but they after sold all the stuff for peanuts to visiting sailors, and many managed to score incredible deals for excellent gear in excellent condition. Underwater wrecks can be explored too, and while most of the gear will be either gone or destroyed, you can still find good stuff on them. I pukuked my self-steering wind vane out of the wreck of a sailboat that was laying 5 meters under water near a reef in the Chagos archipelago. The whole rig from that boat had been saved and was on shore on a deserted island waiting for a pukuker who needed it. The thing is to keep your eyes and your ears open and you will find that the world is full of stuff waiting for you to help yourself.

There is absolutely nothing unethical about pukuk as long as you make sure you don't drift into stealing. Sometime just asking is the best, and people might happily give you the stuff they don't need if you show them you can make a good use of it.

That is actually how I got my boat. Karaka was discarded, abandoned, and was about to be trashed when I expressed an interest in her, and that is why she got officially given to me by the owner. He made me a bill of sale for one Hong Kong dollar(about 12 cents US at the time) to simplify paperwork, and that is to this day my best pukuk ever.

Rain catching

There is never enough water aboard a cruising boat. People who actually run out of water at sea are few and far between but most yachts are fitted with small water tanks. To fill water, there are several options, such as tying to a dock and fill from a tap, carry jerrycans from shore to your boat in your dinghy, or invest in an expensive and troublesome water maker. The best solution though, in the right type of climate that is, is to catch the rain. It is also best to have as big a tank as the boat design will allow.

To catch rain all means are valid. The most efficient is to plug the drains on the deck and let the deck catch the rain, then open the water tank filling(usually situated on deck) and let the water flow. The only problem with that system is that the deck needs to be spotless.

It is always a good idea to let the rain fall and rinse everything for 5 or 10 minutes before catching it for consumption.

The next best technique is to have a tarp or awning adapted for rain catching. Ours is a big rectangular piece of heavy duty plasticized canvas, tied taut between the two mast. It provide shades and shelter in all weather, but in addition to this, it is fitted with a plastic sea-cock right in the middle. When it starts raining we lower the boom onto which the tarp usually rests until the canvas sags, making a big funnel with the hole at the bottom. We then attach a plastic hose to the fitting under the hole and direct the water to the tank fitting. Our tarp is about 15 square meters or 150 square feet and during a heavy tropical rain shower we can catch several hundred liters of water with it. The attaches for the tarp need to be very strong as they can get under a lot of strain from both the wind and the weight of the water.

If the water you collect or bring from shore is dubious to you, it is possible to kill all germs in it by adding a bit of bleach in the tank. To remove the bleach from the water you drink (bleach is bad for you) you will need to instal a filtration system in the line between the tank and the tap. A 5 micron carbon filter will remove all taste of bleach from the water and needs to be changed only once every few months.

Ratlines

Ratlines are the rope ladders the ships of old had on their sides so that the crew could climb the rigging to go tend the sails. They are rarely seen on boats nowadays, mainly because sailors now have less reasons to go aloft, but also because boat designers have found out that all this windage and weight high up is detrimental to the stability of the boat. They have come up with an alternative in the form of mast steps, which are efficient and light and strong. I prefer ratlines but then I have the ship suited for them. Mast steps can be a problem when halyard get caught in them. Ratlines otherwise are safer than mast steps to climb, there is more to grab on, and since they are tilted at an angle, you can not really fall. Unlike as with mast steps, you can stop comfortably half way on the ratlines, to check a reef for example. At the worst of rolling and heeling over, the ratlines will at the worst be vertical. But I guess the best thing about them is that they look terrific.

To make ratline, you need at least three anchor cable. Usually modern sailboats have two cables (the shrouds) going up at an angle and meeting just below the spreaders. Those can be the outside anchors. You can then run a line, the best is a three strand rope but anything will do really, from the spreaders down to the deck. You will need a lot of tension in that line, so you might want to rig something like a block and tackle. Traditionally, at the bottom of that line you have something called a dead eye, which is a round piece of wood with two or three holes in it. You can make a pair quite easily yourself. The main line wrap around the dead eye and then a smaller line runs back and forth between a strong point on deck and the holes in the dead eye. When you want to adjust tension, you can use the leverage of the small line running back and forth.

Once you have your three anchors, you will need to calculate the length you want between the steps, and then seize some twine on the outside cables where your rungs are going to be attached. That is to prevent your knots to slip down when you step on the rung. Stainless steel cable is very slippery, galvanized cable less so.

To make you rungs, start by making a clove hitch around the middle cable. Then make a rolling hitch with the bitter end of your rope on one of the side cable. (I think it is best to do that on the fore cable). Make that rolling hitch very tight, then adjust the central clove hitch to make the first half of the rung taut, and then cut your line with enough extra to make another rolling hitch on the other cable to finish the rung. Make a whipping on both ends to avoid the line fraying. On one side seize the line to itself after the rolling hitch to make it permanent, then tighten everything. (see pictures), and move to the next rung. You can make some extra hitches after the non permanent rolling hitch if you feel like it. Make sure the space between the rung is always the same or it will look bad.

After a week or so, every line will have taken some slack, and you will need to re-tighten everything. After that you will have to re-tighten the whole thing only about once or twice a year. It is best to climb by favoring the middle of the ratlines, not the edges, as the clove hitch on the central anchor is much less likely to slip than the two knots on the edges, since it is tied to a rope and not a slippery cable.

Registered boat length

It is a good idea to cheat a bit on the registered length of your boat if you can. Depending on the procedures in the country you register your boat in, you might be able to shave off a few feet on paper by omitting a bowsprit or a wind vane, or even better, substitute the length at the water line to the length over all. The benefit is that most marinas and boatyards charge by the foot of length over all, so you can save a lot of money on the long term. In most boatyards, the person you pay the bill to will not come to see the boat but will refer to the registration papers to calculate the bill. A few

feet missing will go unnoticed most of the time.

My boat papers say that my boat is 43ft long, which is true at the water line while the real over all length as measured by the Panama canal authorities is 53 ft. It makes a difference when I have to pay a dollar a foot a day or more for a haul out.

Siphoning fuel out of jerrycans

Sometime there are no fuel docks and you need to go to a service station with jerrycans to get fuel. After a bothersome trip back to the boat, you are faced with the task of emptying all this fuel into your tank without making a mess. If the boat is rolling and the tank fitting is small, it won't be easy to pour it down. Most people siphon their fuel with a pipe by sucking hard to make the fuel come. The result is usually either a mouthful of fuel or a mess on the deck. To avoid this, place your pipe in the jerry can and the other end in the tank fitting. Place a rag around the mouth of the jerry can to make it air tight, then insert a small pipe into it (a pen without the ink works well) and blow into the jerry can. The increased pressure will drive the fuel into the pipe and the siphon will be started. Make sure your pipe reaches all the way to the bottom of the jerry can because it will be near impossible to use this technique again if the jerry can is not full.

Solar panel mounts

I don't need to explain how great solar panels are. Every cruising boat should have at least a few. Solar panels work best when exactly perpendicular to the sun rays. To achieve this on a sail boat, they need to be able to be moved, or at least swiveled. Most boats have them mounted on an arch over the stern, and I guess that is the best solution if you can have it. We have a ketch and the mizzen sail is in the way so we can't do that. We have the solar panels mounted on the rails on either side of the stern. We didn't bother with an intricate mount system, instead we merely tied them on the rails. I drilled a few holes along the length and made a separate lashing with twine at each hole. I only had to change the lashings after five years and it took me 20 minutes. To hold the panels up there is a piece of wood with notches. That piece of wood will need to be tied on to the boat or you will lose it otherwise.

The panels might need to be lowered when sailing close hauled into strong wind as when the boat heels the wind can get under the panel and crash it over the other side, which can be damaging (and also nerve racking if that happens in the middle of a storm in the middle of the night when you can't see what happened to cause such a terrible racket).

SPOT Tracker

When you are at sea on a crossing, or away exploring some islands, you will not have the opportunity to call your family or send them an email to tell them you are okay. You might be fine with that but they will be worried for you. That is the way things go. You can invest in a satellite phone or a SSB radio but they cost a lot of money and not everybody can afford those. A cheap and simple alternative is now on the market, the SPOT tracker. It costs about 160 dollars to buy, plus about 100 dollars a year for near unlimited use. It is a small and rugged device with only a few buttons and LED lights. By pressing a button, it sends a prerecorded text message with your current position to up to ten email addresses of your choosing. It work virtually everywhere since it works by satellite. It is the best way known to me to send a quick "all is fine" message to your friends and family. If you want to, your position can be recorded and shown on a google map on line for all to see. You have a choice of four different messages, including one requesting assistance and one for serious emergencies. The Emergency message goes directly to a company dedicated in listening to such messages and who will organize rescue for you. The same company offers an insurance to cover the costs of rescue up to 100 000 dollars a year. The cost of the insurance is 13 dollars a year and is one of the best deal I've seen about such things.

I don't like to advertize products but the Spot is a great little thing and I highly recommend it. One of its best advantage, beside the obvious ones, is that while you can say you are okay, nobody can reach you back to discuss trivialities. You still have the opportunity to isolate yourself in the wild

but you can make your family feel at ease while you do so.

Check more info at www.findmespot.com

It is to be noted that the ones for sale now are the second generation trackers. The first generation had many problems and a lot of people trashed it in reviews. The designers of the second generation tracker solved all the problems mentioned in the reviews and came up with a reliable device.

Trading

Trade is a good way to replenish your funds. The world trade is regulated by tax laws and avoiding to pay those taxes is a way to make good money. Nothing is easier than importing goods without going through customs than by sailing on a private sail boat. Custom officers do not expect you to engage in trade, especially not in common goods.

The obvious illegal goods such as drugs, weapons and illegal immigrants are to be avoided in all cases, they are just not worth the trouble. Many skippers have ended up in jail for drug offenses and have had their boat confiscated. Apart from the ethical aspect of dealing in harmful substances, I don't think it is smart to start an amateurish drug traffic since you can not compete with the pros, who will resent your input, and you are not experienced enough to avoid repression from the shore side authorities who keep a close watch. It make the whole thing very dangerous and it is very unlikely you will be able to pull a deal through even if you don't get caught. Beside people who have connections, only very desperate or stupid people attempt it.

So what's left for you to trade are common legal goods. It could be anything, as long as you can buy it for cheap and sell it for more money without paying import tax. Alcohol and tobacco products are high profit but customs usually search for those. The offense for trading in those is usually not severe so it is worth trying your luck.

For example, I bought rum in bulk in Madagascar for about 1 euro a liter. I sold it in the island of Mayotte, 200 miles further, for 10 euros a liter. I could have made a killing had I not been caught by the customs who came to search the boat as soon as we arrived. They found the rum and made me pay an import tax of about 5 euros a liter. I still made a 500% profit.

A good way to avoid taking risks is to trade in second hand goods. Used gear is not taxed. For example, you can get cheap boat equipment somewhere and carry it to some remote islands where import tax is high and sell your stuff for good money in a boatyard. Some people buy clothing and shoes in thrift stores and sell them in markets in the pacific islands for much more than they paid for them. I've heard that art trading can be profitable as well, especially if you sail in remote parts of the world where you can buy cheap mass produced art and craft and they sail back home and sell them to art dealers in posh neighborhoods, presenting each one independently as a unique master piece.

The best way to avoid paying taxes on new goods is to declare them as boat spares. You are sailing on a sailboat, and as such you are entitled to carry as much spare parts as you feel it is safe to do. A custom officer can not tell the difference between your spares and goods for trade. I bought as much rope as I could afford in a factory in Cape Town, about 2 kilometers of it, sailed across the Atlantic and then sold it in Brazil and through the Caribbean making on average a 500% profit on my investment.

Another kind of good deal available is to befriend sailors from tankers and cargo ships, and buy from them 5 gallons drums of marine paint for very cheap, then sail to a yacht boatyard and offer the paint to the people fixing their boats. I once sold such drums of paint for half the price the paint was fetching in the store and still made a 400% margin on it.

The thing is to be discreet as all this is illegal and you don't want to pay fines. There are deals everywhere if you look for them and do a little bit of research. The possibilities are endless.

Two fishing knots

To tie your line to your reel you need to use the knot called the anchor knot.
(detailed pictures)

To tie your lures to the line, you need to use the tylene knot.
(detailed pictures)

Ventilation

A good ventilation on board is very important when sailing in the tropics. The 12 volt fans sold in marine stores are the best but unfortunately they are very expensive, especially if you need to outfit many bunks. A cheaper alternative is to buy 12 volts computer fans in an electronic supply store. They costs about 1/10th of the price and work quite well. They also are silent, small and compact. They use less than half an ampere of power for the big ones which is also a plus.

To instal them you need a little switch as they are not equipped with one. You can be creative and make beautiful mounts for them, but since they tend to vibrate, a rigid mount will rattle. We find it best to hang them with strings, twine or shoelaces. You'll need at least three points of attach so they don't swing around, and then you can adjust the length of the strings whenever you want to adjust the direction of the air flow.

Please give me feedback if you have found this interesting. Also if there is a specific subject you would like to know about, don't hesitate to ask me. My email is ketchkaraka@hotmail.com

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