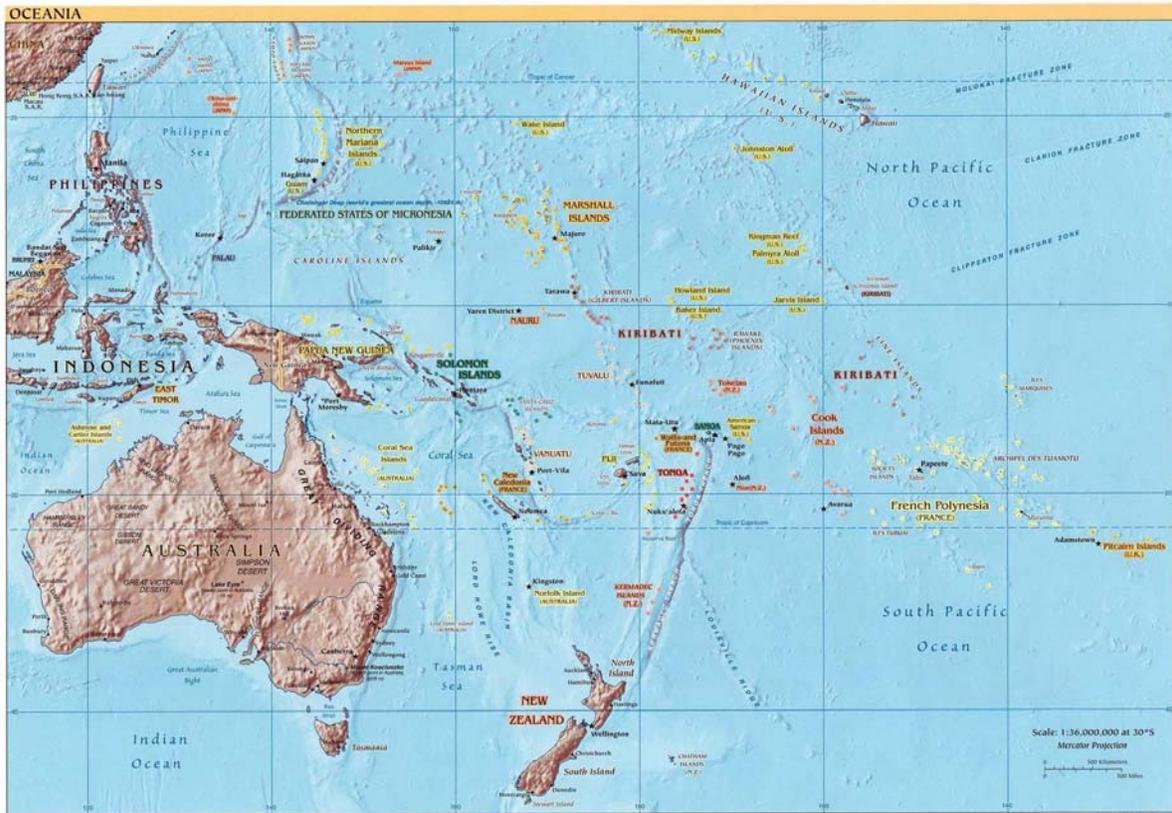


Pacific Puddle

Jump

2009



A special thank you to all
the past & present sailors
who helped compile the almost 500 pages of
this book!

Additional thanks to:

- Rafael and Marina Riviera Nayarit for hosting our meetings and other events and providing the Puddle Jump fleet special rates and accommodations at their beautiful new marina in La Cruz. In their first year of operation Marina Riviera Nayarit has emerged as Puddle Jump headquarters in Mexico and future Puddle Jumpers will undoubtedly continue to use this as their jumping off place in Banderas Bay.
- Contributors to the 2009 Puddle Jump meetings for donating their time and energy for our well-being: Steve (Kavenga), Don (Fresco), Kyle (Carnes del Mundo), Dr Efren Calderon, Annie (Sunseeker), Mike at PV Sailing, Teapot Tony, Philo (Philo's Bar), Andy Turpin (Latitude 38), Radio Rob & Bob Bechler making his 4th (maybe last) Puddle Jump this year.

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INTRODUCTION

Welcome to the newly updated and reorganized Pacific Puddle Jump manual for 2009. This guide is a resource by and for sailors crossing from the Americas to points in the Pacific, with a focus on the South Pacific.

The Pacific Puddle Jump Passage Guide is a continuous work in progress. The 2009 Pacific Puddle Jumpers based in Marina Riviera Nayarit, La Cruz have updated and reorganized it to hopefully be more user friendly. It is specifically formatted for online usage (or downloading), with many resources identified through links. As such, the paper version will only list the links for additional information.

The 2009 version of this manual is also available on the Pacific Puddle Jump Yahoo group <http://groups.yahoo.com/group/pacificpuddlejump/> - an online resource for Puddle Jumpers. If you are interested in being added to this group, just click the "Join the Group" link and provide your information.

Remember - this book is a guide. Enjoy the information; update as you go. And, if you can, send updates back to next year's group!

Chapter 2- Route Planning

CHAPTER OVERVIEW:

- Don on Summer Passage- Mexican Ports to Marquesas
- Pre-Hurricane Season Tropical Disturbances Along The ITCZ in The Northeast Pacific
- Hurricane Holes
- Notes from Jimmy Cornell
- Coconut Milk-Run notes on weather and routes
- El Nino & La Nina
- ITCZ Explanation Puddle Jump
- A Suggested Route for the Marquesas from Steve on Kavenga
- Pacific Light List 2006; Pub 111
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- Routing to New Zealand from Tonga
- Sailing-By-Color: Reading Tropical Waters by Their Color

Mexican Ports to Marquesas

Optimum Track and Timing

Notes by Donald J. Anderson; Valiant 47 "*SUMMER PASSAGE* "
Oxnard/Ventura, California; Updated February 2009

Best Time

The best time to take passage Mexico to the Marquesas is March 15 through April. The reasons are:

1. One arrives in French Polynesia after cyclone season.
2. One departs long before the Northeast Pacific hurricane season that begins May 15.
3. During the spring the northwest winds along the outside of the Baja peninsular are more reliable and extend as far south as Socorro Island. They blend smoothly into the northeast trades at about 125W. At other times it can be 600 miles of light and variable winds from Central Mexico to the NE trades.

Optimum Track

Most vessels take their departure from Cabo San Lucas, Puerto Vallarta or Zihuatanejo. Their first landfall is usually Atuona on the Island of Hiva Oa because it is the shortest distance. My preference is Taiohae Bay on Nuku Hiva because the bay is large and beautiful and is never crowded unless a rally from Europe takes it over.

The great circle distances to Atuona are:

Cabo San Lucas	2603
Puerto Vallarta	2704
Zihuatanejo	2765

While the great circle or rhumb line route is the shortest distance, taking this route rarely makes the fastest passages under sail. The reason is that the passage passes through four significantly different weather systems. They are:

1. The Northeast Pacific High.
2. The Northeast Trades.
3. The Intertropical Convergence Zone (ITCZ), often the doldrums.
4. The Southeast Trades.

The fastest and most comfortable passages therefore depend largely on how one plays these weather systems. The most important consideration in developing one's strategy is to minimize one's exposure to the ITCZ where winds are fickle, squally and fraught with scattered moderate to strong thunderstorm cells. The ITCZ in March and April usually lies between about 03N and 07N.

Therefore the optimum track consists of three legs as follows:

1. Point of departure to an intermediate waypoint somewhere between 05N and 07N at about 130W. Most of your westing will be made on this leg. The reasoning is that the northeast trades tend to be stronger than the southeast trades at this time and the north-south width of the doldrums in the ITCZ tends to be narrower the further one is to the west.

2. From the intermediate waypoint sail or more likely motor sail due south about 100 to 200 miles to cut through the ITCZ as quickly as possible.
3. After breaking through the ITCZ somewhere just north of the equator, and on finding steady east to southeast trades, set course directly for the Marquesas.

A fast passage for the average 35 to 45 foot vessel crewed by two persons would be 19 days. The average smart passage is about 23 days and slow passages without problems range as long as 32 days.

Optimum Point of Departure

Cabo San Lucas, although my least favorite Mexican port, is usually the best point from which to take one's departure. Not only is it the shortest distance, but it is also likely to have wind right from the start after one clears the shadow of the land mass. As already mentioned, the nor'westerlies flowing down the outside of the Baja Peninsular are more reliable during the spring and allow one to reach the northeast trades quickly and smoothly. If the nor'westers are rather fresh, making things a little sloppy, it's best not to fight them; just crack off, bringing the strong winds abaft the starboard beam. This usually means sailing somewhat below the rhumb line to the intermediate waypoint, but it matters little because you will be on a faster point of sail and as you make westing the winds will steadily veer becoming NE, or on your tail by about 125W.

Puerto Vallarta is second best because occasionally winds are light within a few hundred miles of Cabo San Lucas whereas the northerly winds in the vicinity of Cabo Corrientes are more likely to be consistent. However the afternoon winds in Banderas Bay tend to be rather fresh from the west to southwest so one would want to depart at first light, most likely motor sailing in a light land breeze.

Zihuatanejo is a far less desirable point of departure, simply because the light winds prevalent along that part of the coast can extend out 600 miles or more to the west before one reaches the northeast trades. Sometimes those unfortunate enough to encounter these blahs often ask whether they should go north or south to find wind. The answer is it usually doesn't make any difference. Just sail whatever tack maximizes your westing. The whole name of the game during the initial part of this passage, regardless of the point of departure, is to find the northeast trades as quickly as possible and that means making as much westing as you can under sail or power.

Acapulco is the least desirable of any points of departure from Mexican ports because of the prevalent light and variable winds with only light afternoon westnorthwesterlies close to shore. Acapulco to Bahias de Huatulco has the lightest winds anywhere along the Pacific coast of Mexico and that is what makes it a real struggle to make it to the northeast trades. Sometimes the light weather in the vicinity of Acapulco extends 1000 miles out to the west.

The above arguments are nicely illustrated in the COAMPS Streamlines Dynamic Model shown below in Figure I.

Note the following:

1. The close proximity of Cabo San Lucas to fresh to strong nor'westers that blend nicely into the northeast trades.
2. The very light winds from Puerto Vallarta out about 250 miles to the west.
3. The light and variable to light nor'easterlies from Zihuatanejo out about 500 miles

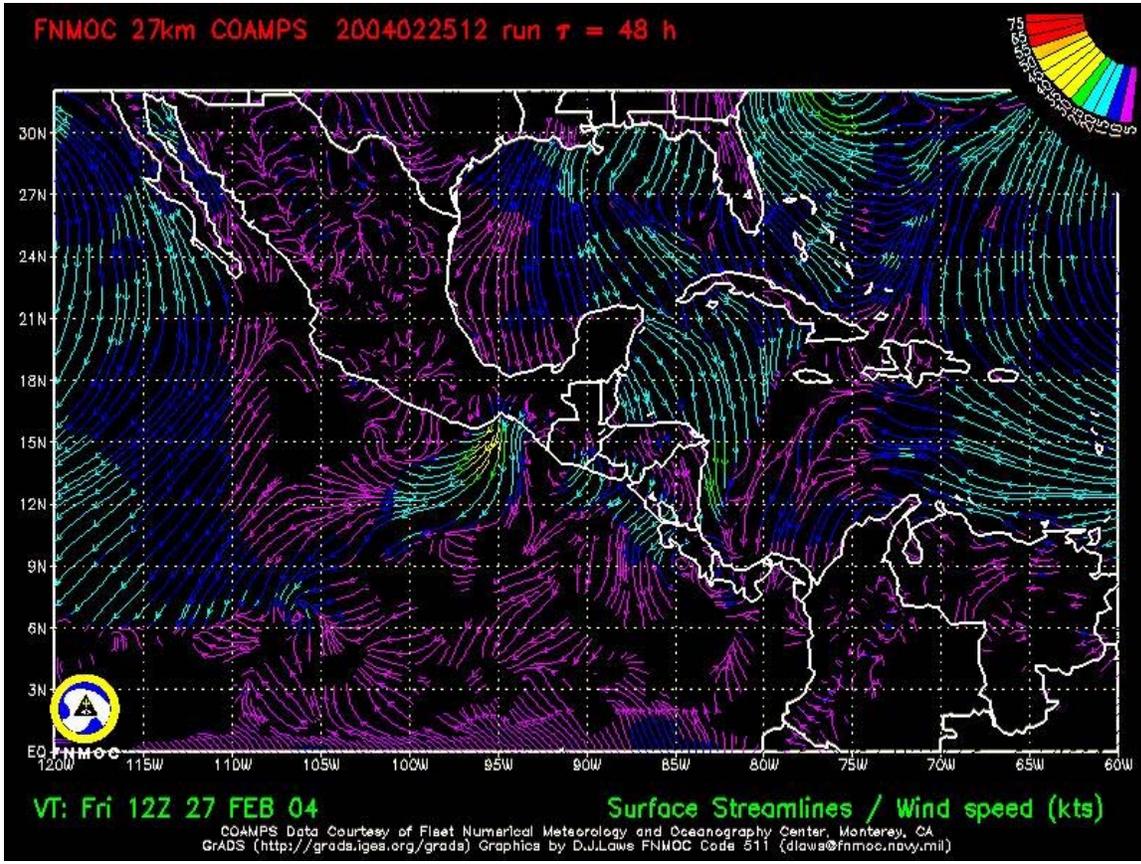


Figure 1

COAMPS Streamlines Computer Model

A similar wind pattern is seen in Figure 2. It is a plot of calculated surface winds derived from the Seawinds Scatterometer aboard NOAA's QuikSCAT Satellite.

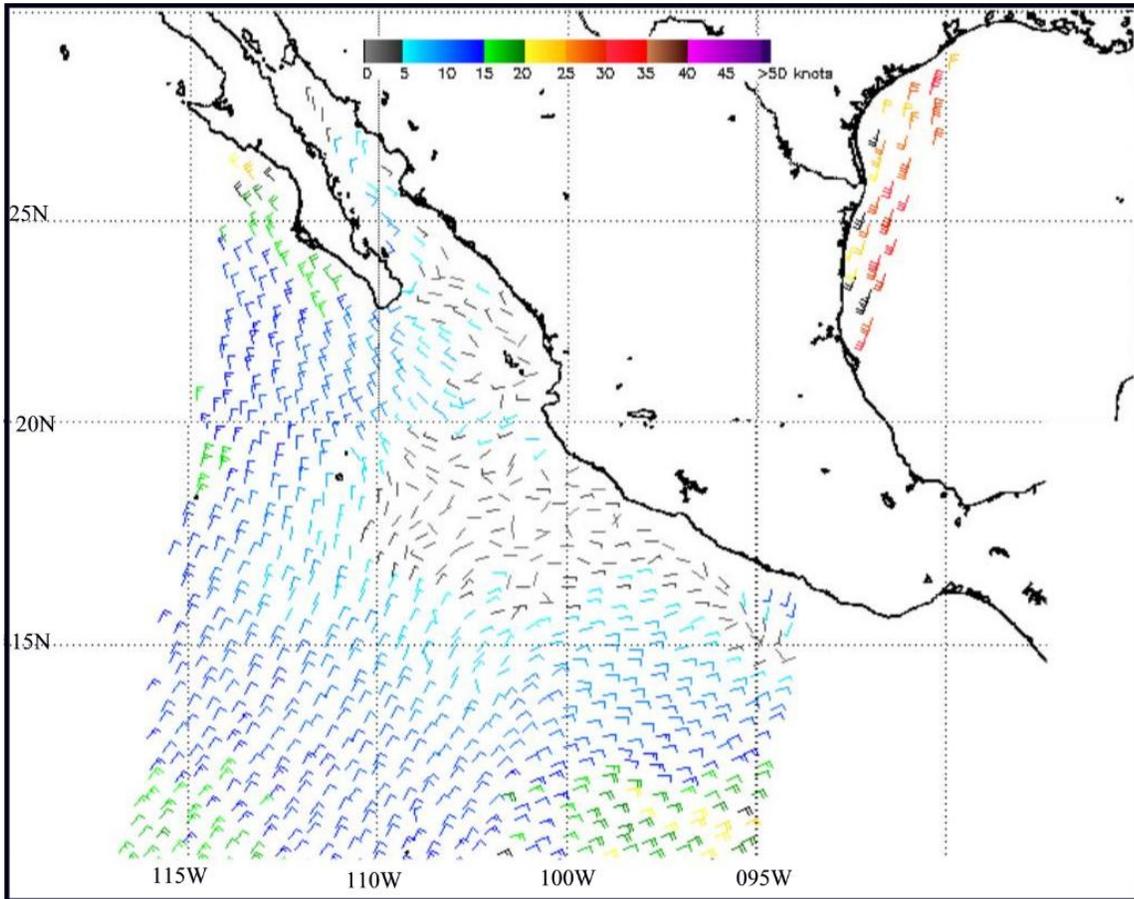


Figure 2
10 m Surface Winds Derived from Scatterometer Measurements

What to Expect

Since one will be passing through several different weather systems, conditions will vary significantly along the route. One should not encounter storm or even gale conditions anywhere along the route during the recommended time of year. Wind directions and sea conditions will be favorable for most of the passage; it's almost entirely a downhill run. The weather details are rather complex so here is a general description of what one should expect without going into too much detail as to why.

We have already mentioned the conditions one may expect during the first part of the passage as one clears the land and seeks the northeast trades.

Since we are presently (2009) in a weak El Niño episode, we may expect average conditions as follows:

The Northeast Trades

During the recommended passage period, the northeast trades should lie west of about 125W between about 05N and 20N. Swells should come generally from the direction of the prevailing wind and will be between 4 and 8 feet. Numerous high puffy trade wind clouds should be the order of the day most of the time. The wind direction will gradually veer as you make westing, becoming east northeast on closing the intermediate waypoint.

Squalls

While in the northeast or southeast trade wind zones, squalls with heavy rain can occur at any time with winds usually coming from the same direction as the prevailing winds with strong gusty winds rarely exceeding 35 knots. They are easily identified visually by day as dark clouds with a dark curtain of rain reaching down to the surface. They are easily tracked at any time by radar where they appear on the screen as a blur or diffuse blob. Since they are usually very small pockets of moderate to strong low altitude convection lines or cells, unlike the ITCZ where clusters of high altitude convection cells can be as large as 300 miles across, they rarely show up on satellite images. They normally travel at about 20 to 30 knots, lasting for a period of about half an hour or so as they pass over you. Squalls tend to be more prevalent during the nighttime hours because some of them are associated with tropical waves that sustain their forward motion from energy generated on their back sides by convection processes that occur as the air temperature drops during the evening hours. Tropical waves have only recently become fairly well understood and I will send a separate note on that subject.

The Intertropical Convergence Zone

This area, usually referred to as the ITCZ, is a band of unsettled weather surrounding the earth just north of the equator where the northeast and southeast trade winds converge and where the sea surface temperatures reach their maximum values. It migrates north and south following the sun, lagging it by about two months. Its range of latitude is about 02N to 12N which is why Palmyra Atoll at 05N has two rainy seasons and Christmas Island at about 01N is lucky to have a rainy season at all. During the recommended period for this passage, the ITCZ usually lies between about 03N and 07N. It is characterized by calms, light winds from any direction, and areas of moderate to strong convection reaching altitudes of at least 20,000 feet with strong electrical storms with torrential rain occasionally accompanied by strong squally winds. Seas tend to be small but confused since they can come from any direction or several directions at once. Sometimes there is sufficient separation

between the convection cells that one might find a smooth transition between the northeast and southeast trades with the winds never dropping below 15 knots. Cyclonic storms cannot form in the ITCZ because there is no coriolis force close to the equator. However, small area low level cyclonic circulations (LLCC's) about 60 miles in diameter with winds to 35 knots do occasionally form with very heavy rain and of course confused seas. These always occur along the north edge of the ITCZ, never on the south side. They are embedded in the southern edge of the NE winds so they enhance the winds in their NW quadrant and decrease the winds in their south and south east quadrants. They do not actually follow the direction of the trades, rather they move from east to west at about 15 to 30 knots. More on this in a separate note.

Sometimes one encounters wind from the south at 5 to 20 knots embedded in the ITCZ over a north-south distance of up to 60 miles.

As you can see, when one is transiting the ITCZ one may encounter just about any kind of weather except sustained gale or storm conditions. That is why the best strategy is to try and cross the ITCZ by heading due south in order to minimize one's exposure.

The north-south width of the convection cells tends to decrease towards the west, especially west of about 125W. This is another reason to make most of one's westing in the northeast trades before diving south to find the southeast trades. Also one is more likely to find spaces between the convection cells the further one is to the west. However, it usually is not worth sailing further than about 132W before diving south; the extra distance isn't worth it.

The location of the ITCZ is given every six hours in the NWS High Seas Forecasts. The format is a sequence of lat/lon coordinates with comments on where along the ITCZ there is moderate or strong convection. This is useful information but one should not expect it to be current. The reason is that the convection cells can develop as strong thunderstorms and then be completely dissipated over a period of less than 24 hours. Unlike thunderstorms at higher latitudes, where they move from west to east at about 20 knots, those in the ITCZ tend to remain stationary. On the other hand, the latitude or line of the ITCZ, wiggles or meanders like the Gulf Stream. For a given longitude, the north-south position of the ITCZ can vary as much 120 miles in a 24-hour period. What all this means is that by the time a vessel receives the ITCZ data, conditions have probably changed significantly. A slow moving vessel cannot expect to find a hole in the convection chain based on information received via INMARSAT-C or USCG HF-voice weather forecasts. One might be able to improve one's chances if one has the capability to receive (real time) the low altitude NOAA weather satellite infrared encoded images directly as they pass over one's location. We use the OCENS software and receiver system.

So how does a slow moving vessel make something useful out of ITCZ data? Well, if one plots the coordinates every 24 hours, beginning several days in advance, and if one uses the same piece of paper or electronic chart, then one will have a band that shows the most probable width and location of the ITCZ. This helps in establishing the optimum first intermediate waypoint.

Some cruisers claim they know how to read the ITCZ and are able to set a course to actually take advantage of any convection cells. I don't have a clue as to how that is done. I think I might be able to do it if I were piloting a Boeing 707.

Pre-Hurricane Season Tropical Disturbances Along The ITCZ in The Northeast Pacific

Donald J. Anderson; Oxnard, CA; February 2009

The best time to take passage from Mexican Ports to the Marquesas is between about March 15 and the end of April. The principal reasons are two-fold:

1. To avoid the South Pacific cyclone season that peaks in February and officially closes by the end of April
2. To avoid the Northeastern Pacific hurricane season is officially May 15 through November 30
3. To avoid tropical waves, usually about 60 of them that originate along the west coast of Africa and travel west to the date line during NE Pacific hurricane season
4. To take advantage of the northeast trades that are more reliable during this period.

For most cruisers this 3000 mile passage is relatively uneventful provided they make most of their westing in the northeast trades before heading south or south southwest to cut through the inter tropical convergence zone (ITCZ) quickly to minimize exposure to convection and squirrely winds and thereafter enjoy an easy passage in the southeast trades.

In recent years the number of sailboats making this passage has jumped to more than 50. Most are 32 to 45 feet long with just a couple aboard. All but a few report a relatively uneventful mostly downwind offshore passage of about 21 days. Everyone experiences a few squalls along the way; that is to be expected throughout the tropics. A handful however experience at least one gale or storm condition along the way a few degrees north of the ITCZ. This often catches them by surprise; especially the first timers who wonder how that can happen when one is supposed to have reasonably steady trades. It is even more baffling when the WEFAX charts and GRIB files don't help them much in forecasting these small areas of significant weather. These files simply cannot see very small disturbances.

Although much has been written about tropical waves moving westward along the ITCZ, I am not aware of any documents addressing these significant weather systems that occur long before tropical wave season or hurricane season.

What follows is my amateur's view of what I think is happening based on personal observation and onsite reports over the past few years.

These systems have the same effect on local weather as does a tropical wave when it passes over, namely a significantly increase in the normal trade wind followed by a clockwise shift often accompanied by heavy rain. The other similarity is that they travel east to west at about 15 to 30 knots.

Unlike tropical waves that have their origin in the Sahara Desert-Gulf of Guinea in West Africa, these systems are born in the same area as Northeast Pacific hurricanes, namely on the north side of the ITCZ a few hundred miles south of Acapulco and west of the Tehuantepec.

Lat year (2006) during mid April, around the time that several of the cruisers experienced these systems with gale to storm conditions near the ITCZ, the official weather sources made mention of a trough in the area traveling west.

On subsequent examination of surface winds in the area (after the fact of course), and based on a few onsite observations, the systems seemed more like micro tropical cyclones than troughs. This is because there was always a well defined low level cyclonic circulation (LLCC) typical of a small low pressure cell 8 to 14 degrees north of the equator rather than a trough that would have been more like a north-south oriented tropical wave with NE winds on the leading edge and SE winds on the trailing edge.

Closer examination of the LLCC's showed that the winds in the NW quadrant were NE 35 knots while in the NE quadrant winds were E to ESE 25 knots. In the S semicircle, winds were light and variable or light westerly. This is precisely what one would expect to see for a weak low pressure system at about 8 to 14 N traveling west at 15 to 25 knots while embedded in the NE trades immediately north of the ITCZ line.

I talked with three vessels that experienced these systems last year during mid April. They reported sustained wind speeds of 35 to 40 knots with stronger gusts over a period of 24 to 36 hours. One vessel reported winds of 70 knots but they did not have an anemometer and when I asked them to describe the sea and noise conditions they were more consistent with winds in the moderate to fresh gale force range.

As far as forecasting these mini tropical cyclones goes, I think it's rather like squalls; one simply has to expect them at any time of year while in the tropics. However, there are some valuable clues to be found in some of the general circulation models. Most notable were the six-day forecasts generated by the NOGAPS model (Naval Research Laboratory, Monterey, CA). Particularly revealing were the color encoded surface streamline products that clearly showed several of these mini LLCC systems along the north side of the ITCZ marching west about 15 to 25 knots. Subsequent onsite reports and surface wind scatterometer data indicated that while the models were reasonably close in latitudes, there was frequently longitudinal error of up to 300 miles. But practically speaking, that's near enough for offshore passage making. What is truly remarkable to me (remember I'm an amateur) is that any model could latch on to these very small tropical systems and get the wind vectors in reasonable agreement with actuality....truly amazing.

This further points up my recommendation that one make most of one's westing well north of the ITCZ not only to stay away from the nasty convection but also to minimize the probability of encountering one of these very small but sometimes intense LLCC's. From what I have observed so far, these small systems track west in a straight line and do not veer off to the NW as do most tropical cyclones during the first half of hurricane season (March 15 through about July 31).

I shared these thoughts with some folks at the NWS Tropical Weather Prediction Center in Miami, Florida and they allowed as how the hypotheses seemed reasonable. Perhaps some day a professional meteorologist will research the systems and publish his findings and explanations.

Meanwhile, it's just food for thought so we minimize our surprises at sea.

The Southeast Trades

During the recommended passage period, you should encounter the southeast trades somewhere between the equator and 02S. Their direction can be anywhere between east and southeast with speeds of 10 to 20 knots, somewhat less than the northeast trades at this time of year.

Ceremonial Requirements

Those who have never crossed the equator are called *Pollywogs*. On crossing the equator for the first time, one is immediately elevated to the title of *Shellback* and is entitled to hold that distinguished appellation until confined to the deep.

On crossing the equator at any time in either direction, all hands must toast King Neptune by individually pouring over the side, a wee dram of the most expensive beverage in the liquor locker. A few years ago, a Pollywog told me that it was OK if the libation had recently been filtered through the kidneys. Now I'm not usually superstitious, BUT!

Have a safe passage. Don

BTW, a voyage is round trip beginning and ending at one's point of departure. All other sea journeys are passages. We do not take our departure from a marina or anchorage. Our point of departure is the last visible landmark or promontory.

Hurricane Holes

Cyclone Heta, which struck American Samoa & devastated the island of Niue in January 2004 has highlighted once again the real risks faced by those spending the cyclone season in the tropics. For those prepared to stay in the tropics during the critical period (mid-Nov. to May) there are a number of hurricane holes conveniently spread out across the South Pacific. Only some of them are fully fledged hurricane shelters & because of the large distances that separate the various island groups, running for shelter if a cyclone is predicted may not only be a hazardous affair, but one may also find that there is no space left when one gets there. The best tactic is either to stay close to a chosen shelter, or cruise on the edges of the cyclone belt, so as to be able to possibly sail out of danger, for example by sailing north from the Marquesas towards the equator.

Looking at those shelters from east to west, the Galapagos & Easter Island can be dismissed as they are not affected by cyclones. On rare occasions, a cyclone has reached as far east as Pitcairn or northeast to the Marquesas, although the latter are very rarely hit by a full cyclone. The outer island groups of French Polynesia (the Gambier & Austral Islands) can be affected but the risks are lower than in the Tuamotus, which are not only more exposed but their unprotected lagoons provide no shelter in a cyclone. The Society Islands attract fewer cyclones than the island groups further west but should perhaps be avoided during the critical period. The few marinas are full with local or charter boats so the only possible shelters in Tahiti are the landlocked lagoon at Port Phaeton, on the southwest coast, where a small marina has opened recently, or the anchorage behind the reef at the Tahiti Yacht Club in Arue, east of the capital Papeete. On the island of Raiatea, boats can be left on the hard at one of the two boatyards but during a cyclone several boats were blown over and suffered extensive damage.

A new marina that is being built at Rarotonga in the Cook Islands may provide adequate shelter, but for the time being the Cooks are best avoided. Port Refuge at Neiafu in Tonga's Vava'u group is reasonably sheltered, but as the holding ground is poor one should attempt to get hold of a cyclone-proof mooring. However, as there are a large number of charter boats permanently based there finding a vacant mooring may not be easy. The intricate cruising area of Vava'u has a few sheltered corners and some boats survived a cyclone early in 2003 huddled in an anchorage off Tamana Island.

In the Samoas, traditionally the best cyclone shelter is at Pago Pago in American Samoa where several boats survived cyclone Heta earlier this year without suffering serious damage. More secure places are to be found in neighboring Fiji, where several cyclone-proof marinas have been built in recent years. As a result of this many sailors have been persuaded to spend the summers in Fiji. On the island of Vanua Levu the two marinas at Savusavu (Waitui & Copra Shed) have laid down a number of strong moorings, all of which performed very well when Cyclone Ami passed through in January 2003. In the capital Suva local boats seek shelter among the creeks & mangroves close to the Trade winds anchorage. On the west coast of Viti Levu the marina at Vuda Point offers good protection in a circular basin that can be entirely closed off by an anti-surge barrier. For added protection, boats left on the hard at this marina have their keels dropped into a trench. A cyclone shelter has also been created in a land-locked basin at Musket Cove on the island of Malololailai.

Even further west, the land-locked natural harbor of Vila in Vanuatu offers adequate protection in a cyclone as does Port Moselle marina at Noumea in New Caledonia. In the Solomon's the best shelter is reported at Tulagi opposite the capital Honiara. The above list is by no means exhaustive & there are small sheltered spots in most island groups that may be known to locals.

Pacific Planning By Jimmy Cornell (abridged)

The last time I sailed the South Pacific route was during 2003 & so I will try to describe the most important criteria that anyone planning such a voyage should bear in mind. As the safe sailing season in the South Pacific is well defined, & the weather is usually fairly benign in the eastern part of this vast ocean, the most critical decision concerns the time of arrival in the first tropical island group.... Those who plan to sail all the way across to Australia in one season need to reach the Marquesas not later than May, although an April arrival is better as it allows more time to sail the remaining distance. In French Polynesia the cyclone season lasts, at least on paper, from late November until the end of March but as the Marquesas are very rarely affected by tropical storms one can take a calculated risk and arrive there early in the season. ...

Weather

Most boats follow the traditional route across the South Pacific that sweeps in an arc from Panama to the Torres Strait. Favorable southeast trade winds are a usual feature of this route during the winter months. However, normal weather conditions can be affected by various factors, such as the El Niño phenomenon. The latest El Niño episode came to an end early in 2003, so we can expect a few years of relatively normal conditions. Even at the height of the winter season, consistent winds are only encountered at the two extremes of this route, between the Galapagos and Marquesas, in the east, and in the Coral Sea, in the west. Between these two extremes, sailing conditions are often a matter of luck, with long spells of steady trade winds in some years, or an alternation of short periods of 2 or 3 days of steady winds followed by a spell of unsettled weather with squalls, thunderstorms & variable winds, as was the case last year.

A constant feature that affects weather conditions throughout the tropical South Pacific is the South Pacific Converge Zone. The SPCZ stretches in an ESE direction from about 5°S, 155°E to 20°S, 150°W, & can influence weather conditions all the way from the Solomon's to Tahiti, although its effects are particularly felt in the area between French Polynesia & Tonga. The Fiji meteorological office monitors the location & movement of the SPCZ and its coordinates are broadcast in its daily weather report on Inmarsat C.

Marinas

French Polynesia - Yacht quay, Papeete, gteiva@portppt.pf, Chantier Naval Raiatea, raiatea.marine@mail.pf, Raiatea Carenage, raiateacarenage@mail.pf

Marina Taina, Punaauia (Papeete); Phillipe Olite, Manager. marinataina@mail.pf;
Tel (689) 410225; cell (689) 789246; Fax (689) 452758; Shipping: PK9 Punaauia – PO Box 13003 Punaauia Tahiti French Polynesia

Niue- Niue Yacht Club manages moorings for visiting yachts alofirentals@niue.nu

Tonga- Moorings for visitors in Neiafu harbor are available from: Moorings moorings.tonga@kalianet.to; Sailing Safaris sailingsafaris@kalianet.to

Fiji- Musket Cove Marina, musketcovefiji@is.com.fj, Vuda Point Marina, vudamarina@is.com.fj, Trade winds Marina, Suva, tradewindsresv@is.com.fj, Royal Suva Yacht Club, rsyc@is.com.fj, Waitui Marina, Savusavu, waituimarina@connect.com.fj, Copra Shed Marina, Savusavu, coprashed@is.com.fj

Weather (from Coconut Milk Run doc)

Weather, of course, is an important element in choosing when to leave as well as where to leave. However, on a passage that we had planned would take the better part of a month, we figured that we would take it as it came.

In hindsight, we should have chosen better winds for escaping the coast as our slowest days were also our first two (60 and 80 miles). Trade winds in 2001 didn't start until at least 110W, which is about 300 miles from PV and twice that from Acapulco. We're glad we left from PV as had we faced light winds for 600 miles, that would have lengthened our trip significantly – and the trip was long enough! Furthermore, leaving from points further south puts one closer to the ITCZ and doesn't give you as much opportunity to vary your course as you head for the equator.

The trade winds north of the equator on our passage were mostly N to NE and generally in the 20-25 knot range. This made for a boisterous ride, though fast. We were prepared for “trade wind sailing” as the books describe but only found it for a couple of days around the equator where winds lightened to a pleasing 10-15. We had hoped to motor in flat seas for a break!

The ITCZ is a nasty place that we spent the first 2/3 of the voyage discussing and worrying over. It is a place of light and variable winds sporting lightening and rain. We'll cover the ITCZ more in the route section.

After crossing the equator, we found winds from E to S and our last week was spent with 6-8' beam seas with 20-25 knot winds.

Route

When we asked a friend of ours who had circumnavigated as a kid and was now out doing it again with his wife what his route would be he said, “I figured I'd head towards the Marquesas and somewhere around the equator I'll jibe.”

If we were to recommend a passage strategy, it would be to leave Mexico with a pressure system to drive you offshore, heading for a waypoint of 5N 130W. Continually monitor the ITCZ via weather fax or high seas radio and a few days before reaching the waypoint, make a decision on where to cross the equator. This will likely be between 125W and 135W. Then get across the equator on a due south course until reaching the edge of the trade winds and gradually shift to your destination waypoint while making sure you make enough southing to ensure the ITCZ doesn't recapture you.

On our passage we were fortunate to receive daily weather reports from Don on *Summer Passage* (who in early 2002 was still doing the weather for the Baja California net on weekdays). He provided us with some insight to include in this guide:

“As far as the passage Mexico to Marquesas is concerned, yours was near perfect in terms of time of year and track. April through May is the best window, and the optimum track is an S-shaped curve similar to yours. The reason for the S-shaped curve rather than a straight rhumb line track is to minimize the time spent in the doldrums and the ITCZ. It's important to resist the temptation to sail the shortest distance.

“The route Galapagos to Marquesas is an easy ride in the SE trades that are usually stronger than the NE trades. Passage from Mexico or Central America to the Galapagos is a slow one in light winds unless one happens to ride a Tehuantepecer with strong winds between 93W and

97W. Most boats sail the rhumb line from the Galapagos to the Marquesas. This turns in the slowest passages: light and variable winds for the first 500 miles followed by nasty squalls in the secondary ITCZ. Optimum track is to motor sail SW. Winds will begin to increase at about 05S. Continue on SW track until about 9 to 10S where the SE trades will be strong and steady except for the occasional squall. From there sail the 9 to 10th parallel all the way to the Marquesas. There will be occasional squalls from the S and SE. This can sometimes be a rather rolly passage if the SE trades back to a more easterly direction.”

The following sections provide more detailed info about each leg of our own trip and some things that we learned:

Escaping the coast

This was the hardest part of the trip for us. We only carry enough fuel for 3.5 days of motoring and we didn't want to burn it in sight of land! We had a nice sail out of Banderas Bay on a sea breeze and then the wind practically died on us.

We would recommend leaving when a pressure system is in the area driving the near-shore winds instead of relying on the daily thermals. Trade winds picked up somewhere between 108W and 112W for boats that left near us.

Trade winds

Once we reached the trade winds, we had N winds that veered to the NE the farther from Mexico we got. While the books talk about 10-20 knots with nice following seas, we saw 20-25 gusting 30 with seas on the quarter. A boat just a week ahead of us often saw winds 5-10 knots less than we did. Friends that went the year before could only dream of winds like we saw – on their 35-day passage they mostly had winds less than 15 knots.

This sailing was the most challenging for us, as we hadn't spent time offshore before; our longest non-stop passage to date had been four days. We explored many sail combinations and trim. Having not used our whisker pole for much more than an afternoon before the crossing, we were hesitant to use it. In the end, our best moderate-wind downwind rig turned out to be a poled out Yankee with the clew held high to spill wind at the top and drive the boat with minimal heel.

This rig had many advantages:

- Allowed us to furl the sail a bit if winds grew to a steady 25 knots or a squall came through
- Eliminated the main, which had a tendency to round the boat up
- Quieted the boat down from a slatting full-batten main as the boat rolled
- Eliminated chafe on the main from our lower stays

We kept in regular contact with two of our good friends from Seattle on the same passage and they found the same sail combo beneficial, though one preferred to have a double-reefed main up to help reduce roll. One had an older pole that provided a constant chafe problem where the jaw of the pole met the jib line, so we would recommend you check this during your daily rig check.

ITCZ & equator crossing

As mentioned in the weather section, the ITCZ occupied a fair amount of mind share during our passage. The ITCZ changes constantly, sometimes quickly and sometimes slowly. It is readily

apparent on a weather fax and is worth watching. Many boats that tried for a rhumb line got bit by a higher percentage of light winds, lightening and generally not-fun weather.

If there was an intermediate waypoint that generally made sense for us to head for, it was 5N 130W. The majority of experienced speakers at our Puddle Jump meetings agreed that often crossing the equator east of 130W would turn in slower passages. Though sometimes the ITCZ will allow it, cutting the corner doesn't often cut a passage time or distance appreciably.

We got bit by the ITCZ at 9N 123W and had a full night of lightening all around us and winds from 10-30 knots and confused cross-seas. We could have been in a rock concert with the show going on outside! Not fun. We were in an area of 'convection' on the edge of the ITCZ, which had bloated. It shrunk back down to 05N within 36 hours and is certainly something that we would not like to see again.

We kept our intermediate waypoint of 5N 130W throughout our passage as when you only move 120-150 miles a day it didn't make sense to weave our way to whatever the waypoint of the day was. The weather reports we received from Don via email gave waypoints between 03-05N and between 125-134W. Staying above 5N was important to us as if we needed to get in more westing, it would be easy enough to shoot west for a day or two once we reached 130W rather than get our westing in early and miss an opportunity to shoot across earlier.

When we got close to our intermediate waypoint, the crossing point could have been 125W so we went for it at 129.5W on a due south course. Due south doesn't give you the best VMG towards your destination, but it does get you through the ITCZ the fastest. We were looking forward to the doldrums and motoring a bit in flat seas but we finally got trade wind sailing on the equator! Go figure. But if you get light winds, motor and get to the SE trades as quickly as you can to avoid the ITCZ squalls and lightening.

And don't forget your equator crossing party!

Final approach

After two weeks of looking forward to the equator, we had made it. But now we had *another* waypoint to shoot for, still a week or more away. That was the hardest week for us; we had made a fast passage so far and were ready to *be there*.

After escaping the ITCZ, we had a nice easterly fill in and gradually veered to the SE. That put the wind and building seas on our beam and we raced towards Hiva Oa with a double-reefed main and Yankee driving us hard. Comfort factor went out the window as speed replaced it on the priority list.

Our destination was Hiva Oa, where the majority of Mexico cruisers made landfall. This gave us the opportunity to go to most of the other islands in the group without beating. And we had heard that we shouldn't go to Fatu Hiva first as the Gendarmes would give you a tongue-lashing. Not! Virtually all the boats coming from the Galapagos stopped there first as well as Tahauata before checking in at Hiva Oa. We didn't hear of a single boat having trouble doing this. Would we recommend it? Yes – but make it to Hiva Oa to check in within a reasonable timeframe as we were told that the Gendarme did take notes of what boats were there and they do communicate with each other.

El Nino/La Nina

What is El Nino? From NOAA website

El Nino was originally recognized by fishermen off the coast of South America as the appearance of unusually warm water in the Pacific Ocean, occurring near the beginning of the year. El Nino means The Little Boy or Christ child in Spanish. This name was used as a tendency of the phenomenon to arrive around Christmas.

La Nina means The Little Girl. La Nina is sometimes called El Viejo, anti-El Nino, or simply “a cold event” or “a cold episode”.

ENSO is the Southern Oscillation Index

El Niño is a disruption of the ocean-atmosphere system in the tropical Pacific having important consequences for [weather around the globe](#).

Among these consequences is increased rainfall across the southern tier of the US and in Peru, which has caused destructive flooding, and drought in the West Pacific, sometimes associated with devastating brush fires in Australia. Observations of conditions in the tropical Pacific are considered essential for the prediction of short term (a few months to 1 year) climate variations. To provide necessary data, NOAA operates a [network of buoys](#), which measure temperature, currents and winds in the equatorial band. These buoys daily transmit data, which are available to researchers & forecasters around the world in real time.

In normal, non-El Niño conditions, the trade winds blow towards the west across the tropical Pacific. These winds pile up warm surface water in the west Pacific, so that the sea surface is about 1/2 meter higher at Indonesia than at Ecuador.

The sea surface temperature is about 8 degrees C higher in the west, with cool temperatures off South America, due to an upwelling of cold water from deeper levels. This cold water is nutrient-rich, supporting high levels of primary productivity, diverse marine ecosystems, and major fisheries. Rainfall is found in rising air over the warmest water, and the east Pacific is relatively dry. The observations at 110 W (left diagram of 110 W conditions) show that the cool water (below about 17 degrees C, the black band in these plots) is within 50m of the surface.

During El Niño, the trade winds relax in the central and western Pacific leading to a depression of the thermo cline in the eastern Pacific, and an elevation of the thermo cline in the west. The observations at 110W show, for example, that during 1982-1983, the 17-degree isotherm dropped to about 150m depth. This reduced the efficiency of upwelling to cool the surface and cut off the supply of nutrient rich thermo cline water to the euphotic zone. The result was a rise in sea surface temperature and a drastic decline in primary productivity, the latter of which adversely affected higher tropic levels of the food chain, including commercial fisheries in this region. The weakening of easterly trade winds during El Niño is evident in this figure as well. Rainfall follows the warm water eastward, with associated flooding in Peru and drought in Indonesia and Australia. The eastward displacement of the atmospheric heat source overlaying the warmest water results in large changes in the global atmospheric circulation, which in turn force changes in weather in regions far removed from the tropical Pacific.

Recognizing El Niño

El Niño can be seen in Sea Surface Temperature in the Equatorial Pacific Ocean

El Niño can be seen in measurements of the sea surface temp. In Dec. 1993, the sea surface temp & the winds were near normal, with warm water in the Western Pacific Ocean, & cool water, called the "cold tongue" in the Eastern Pacific Ocean. The winds in the Western Pacific are very weak & the winds in the Eastern Pacific are blowing towards the west (towards Indonesia). Dec. 1997 was an anomaly, the warm water spread from the western Pacific Ocean towards the east (in the direction of South America), the "cold tongue" weakened, & the winds in the western Pacific, usually weak, are blowing strongly towards the east, pushing the warm water eastward. The anomalies show clearly that the water in the center of Pacific Ocean is much warmer than in a normal December.

Dec. 1998 was a strong [La Niña](#) event. The cold tongue is cooler than usual by about 3° Centigrade. The cold La Niña events sometimes (but not always) follow El Niño events.

Typically, El Niño occurs more frequently than La Niña. A list of [El Niño and La Niña years](#) is provided by the National Center for Environmental Prediction (NCEP).

El Niño and La Niña events vary in strength. For example, the La Niña in 1987 was stronger than the La Niña in 1995, and the 1997-1998 El Niño is unusually strong.

La Niña impact on the global climate

Global climate [La Niña impacts](#) tend to be opposite those of [El Niño impacts](#). In the tropics, ocean temperature variations in La Niña tend to be opposite those of [El Niño](#).

At higher latitudes, El Niño and La Niña are among a number of factors that influence climate.

However, the impacts of El Niño and La Niña at these latitudes are most clearly seen in wintertime. In the continental US, during El Niño years, temperatures in the winter are warmer than normal in the North Central States, and cooler than normal in the Southeast and the Southwest. During a La Niña year, winter temperatures are warmer than normal in the Southeast and cooler than normal in the Northwest.

Don Anderson's Initial Thoughts on La Nina Weather - 2009

As of 6 months ago, we are in a moderate La Nina cycle. This means higher precipitation in the Pacific Northwest, drier conditions in the southern states, and stronger trade winds in the northern hemisphere (so far, no wind speed difference in the southern trades). This condition does not affect coastwise cruising.

Only the Pacific High dictates Hawaiian weather conditions. La Nina does not affect this weather. Below the Pacific High, between 03 and 05 degrees north latitude and 15 to 17 degrees north latitude, the trade winds are subject to strengthening to 25-35 knots sustained wind speed compared to 15 - 25 in a normal year.

In a normal year, the passage to the Marquesas takes 19 days minimum, 23 days on average, and up to 32 days for slower boats. The average boat makes 120 to 140 miles per day.

The strategy to use in these conditions is to set a course to 05 degrees north latitude and 130 degrees west longitude (no further than 130 degrees west longitude), then to jibe south through the doldrums, which is an area of dead, calm that spans 100–200 miles wide from north to south, and 1000 miles from east to west. The good news is that in years with La Nina “reinforced” trade winds, the doldrums are reduced (so far this year there hasn’t been a “doldrums” per se (i.e. no areas of dead calm in the region).

Best time to go is March–April. Neither ITCZ nor the Baja peninsula is reliably safe by June.

Don’s Thoughts on El Nino 2009

Don Anderson; February 2009

Gathered from a wide spectrum of documents on the subject. Prepared primarily in response to requests from cruising sailboats about to depart west coast ports for the Marquesas and on west to other parts of French Polynesia and the far Southwestern Pacific.

Conclusion

It is unlikely that the current El Niño episode will have any significant effect on normal weather patterns throughout the Pacific, at least through May 2009.

The Next El Niño Episode.

We are presently experiencing a mild El Niño episode.

The equatorial upper-ocean heat content (average temperature departures in the upper 300 m of the ocean) peaked in late November 2006 and has been decreasing rapidly since that time, with the latest values being negative for the first time since early April 2006. These trends in surface and subsurface ocean temperatures indicate that the warm episode (El Niño) is weakening. It is still possible for some areas to experience El Niño-related effects during the next month, primarily in the region of the central tropical Pacific.

Most of the statistical and coupled models, including the NCEP Climate Forecast System (CFS), indicate that SST anomalies will continue to decrease and that ENSO-neutral conditions are likely to develop during March-May 2009. There is considerable uncertainty in the forecasts for periods after May 2009.

Introduction.

There is a very large amount of data on the effect of an El Niño episode on landmasses but a paucity of data on its effect on ocean passages of the world. This is because there are literally tens of thousands of meteorological and other weather recording sites on land, but very few along the ocean passages. Furthermore, the studies aimed at predicting the effect of an El Niño on weather are driven by the need to predict events and thereby reduce losses to life and property, most of which reside on land.

No doubt the advent of satellite imaging, especially the surface wind vector computational capability of NOAA's latest satellite, the QuikSCAT Scatterometer launched in 1999, will allow the development of more precise predictions of El Niño and La Niña episodes on the vast ocean expanses of the globe.

Impact on Passages Mexico/Central America to French Polynesia, March-May 2009

My guess is that conditions will be about normal, i.e. wind and sea conditions should be expected to be similar to what one finds in the pilot charts for any given month. Nothing unusual should be expected for the ITCZ.

Impact on Passages French Polynesia to Western Pacific, August-November 2009

I don't know. It's too early to say. It simply bears watching closely by cruisers contemplating remaining in French Polynesia or making the run west toward New Caledonia and/or points SW toward New Zealand.

Basis for My Thoughts.

I'm a scientist but not a professional meteorologist, so here are my notes taken from a large number of professional meteorologist's opinions and publications. They are the principal basis for my present thoughts on the subject.

The La Niña-El Niño Cycle.

The La Niña-El Niño cycle is referred to as the El Niño/Southern Oscillation (ENSO). It is a coupled atmosphere-ocean phenomenon that is believed to be triggered by anomalous bursts of westerly winds that originate in the western Pacific. These anomalous westerlies with concomitant reduction in intensity of the NE and SE trade winds reverse the normal westerly movement of warm surface waters in the equatorial Pacific. This eastward movement of warm surface waters reduces the normal upwelling of deep cold waters along the coasts of Peru and Ecuador. This reduced upwelling enhances the increase in the coastal sea surface temperatures.

During a La Niña episode, stronger than normal trade winds prevail across the Pacific. My records developed while doing weather routing for yachts on passages from Mexico or Central America to the Western Pacific between March and September last year (2001) showed NE and SE trade winds frequently on the order of 25 to 30 knots for several periods lasting a week or more. These wind speeds are stronger than average and are consistent with a La Niña condition when atmospheric pressure is high in the Eastern Tropical Pacific and low in the Western Tropical Pacific. These stronger than normal trades causes warm water to build up in the Western Pacific. The trade winds then decrease and the warm water moves back across the Equatorial Pacific towards the coasts of Ecuador and Peru. This eastward movement of warmer water strengthens the warm eastward North Equatorial Countercurrent while weakening the cold westward South Equatorial Current. The result is an increase in warmer upper level water along the shores of Ecuador and Peru thereby causing an El Niño condition. Although the onset of an El Niño is signaled by warming of the waters in the Western Pacific, the El Niño phenomenon over water is felt most strongly in coastal waters of Peru where it has been occurring at approximately 3 to 6 year intervals for over a thousand years and where it was named for the Christmas season when it always begins, hence El Niño, the Christ Child. El Niño sea surface temperature anomalies off Peru reach their maximum of up to +7°C during extreme episodes.

During an El Niño episode, the warmer equatorial waters enhance the Hadley circulation, named for the English meteorologist George Hadley. In 1735 he put forward a hypothesis to explain the persistent trade winds. He suggested a meridional atmospheric circulation where the warm tropical air ascended and moved toward the Polar Regions while the cold polar air descended and moved toward the equator. This circulation, coupled with the rotational effect (Coriolis force) of the earth, bent the tropical air mass toward the west, thereby causing the easterly flow of the trades.

Any enhancement of the Hadley circulation tends to weaken the trade winds while increasing the intensity of the mid latitude westerlies.

Impact of an El Niño on Land Mass Areas.

As the warmer surface water moves eastward across the Equatorial Pacific, it leaves behind it increased drought in Indonesia, New Guinea and Northeastern Australia increasing the probability of brush fires and crop and livestock losses. As the warm waters intensify in the Eastern Pacific they bring increased thunderstorms with torrential rains to Ecuador and Northern Peru resulting in widespread flooding with consequent severe loss of life and property. The North Pacific, during an El Niño episode, experiences more frequent storms with increased intensity between October and March. The 1982/83 El Niño was the most intense in the past 55-year record. During that El Niño episode, Eastern Australia suffered the worst drought in 200 years while Ecuador suffered record rainfall of over thirteen times normal. Drought conditions extended from the Philippines to Hawaii. During the same period, California coastal areas suffered extensive damage from unusually high sea levels and record wave heights caused by unusually intense storms. A rare winter storm with gale force winds from the south struck the Baja California peninsular on December 8, 1982 causing the complete loss of 27 cruisers in the Cabo San Lucas anchorage.

The 1997-1998 El Niño episode was a strong one that brought three times the normal rainfall to Ventura County, California.

Consequences of El Niño to Pacific Marine Environment.

During an El Niño episode normal upwelling of cold water off Peru is shut down so that nutrients are no longer brought to the surface. The consequence is that fishing dies but the fish do not; they migrate to greater depths. The secondary consequence is a greatly increased mortality rate in seabirds and sea lions. During the 1982/83 El Niño episode, seventeen million birds disappeared from Christmas Island (01°N 160°W). They left the nestlings presumably in search of food.

Consequences of El Niño along the Pacific Equatorial Trough.

The warmer Equatorial Pacific waters cause heating of the lower atmosphere that in turn increases its buoyancy leading to increased convection. This means an increase in intensity of the Intertropical Convergence Zones both north and south of the equator. These zones, now more often referred to as Near Equatorial Trade wind Convergence Zones (NETWZ), exist as a band around the world's oceans between about 15N and 10S, moving north and south with the sun, lagging it by about two months. They are characterized by clumps of cumulonimbus clouds with low ceilings but towering to 45,000 feet, torrential rain with low visibility and squally conditions with winds commonly on the order of 35 kts. During an El Niño episode, there is an increase in frequency and intensity of thunderstorm activity, with extremely heavy increased amounts of rain, as much as five times normal annual precipitation. The north-south extent of the ITCZ decreases. During extreme episodes, such as occurred in 1882, the trade winds reverse direction and sea level rises of almost 12 inches occur

along the entire Republic of Kiribati (a string of about 50 islands strung along the equator between about 155°W and 170°E. Dense fog develops over the Central Pacific. The normally westward-setting surface current reverses direction.

Effect of El Niño on Tropical Cyclones.

The South Pacific tropical cyclone season is December through April. The majority of tropical cyclones originate west of 170W in the Near Equatorial Trough. They typically travel at speeds of 12 to 17 knots. During an El Niño episode the warmer waters increase the number of thunderstorms with consequent enhancement of tropical cyclone activity. On the other hand, during an El Niño episode, the upper level winds over the United States change direction and inhibit hurricane development in the North Atlantic, Caribbean and Gulf of Mexico. For example, during the 1997/98 El Niño episode, one of the strongest on record, there were only seven tropical storms, three hurricanes and one severe hurricane in the Western Atlantic. In the Northern Pacific between 1989 and 1995 there were 230 major cyclonic storms (hurricanes and typhoons). During the period 1995 through 2000 there were only 183. Two of the most damaging hurricanes to hit Hawaii in modern times were Iwa in 1982 and Iniki in 1992. These two years were strong El Niño years and showed the largest sea surface temperature positive anomalies in the record between 1945 and 2000. During this 55-year period there were 12 El Niño episodes each lasting 12 to 18 months.

During normal years the North Pacific tropical cyclones, most of them born a few hundred miles SW of Acapulco, travel WNW towards Hawaii and rarely have sustained gale force winds west of 145W. During strong El Niño episodes, tropical cyclones of storm or hurricane force intensity may track well past the dateline.

During strong El Niño episodes, tropical cyclones in the South Pacific may extend east of the dateline as far as the Marquesas, The Gambier in the Southeastern Tuamotus and even further to the southwest as far as the Pitcairn Group. In 1982, French Polynesia experienced six major tropical cyclones. The first occurred in November at the beginning of the season and was the most devastating.

Conclusion

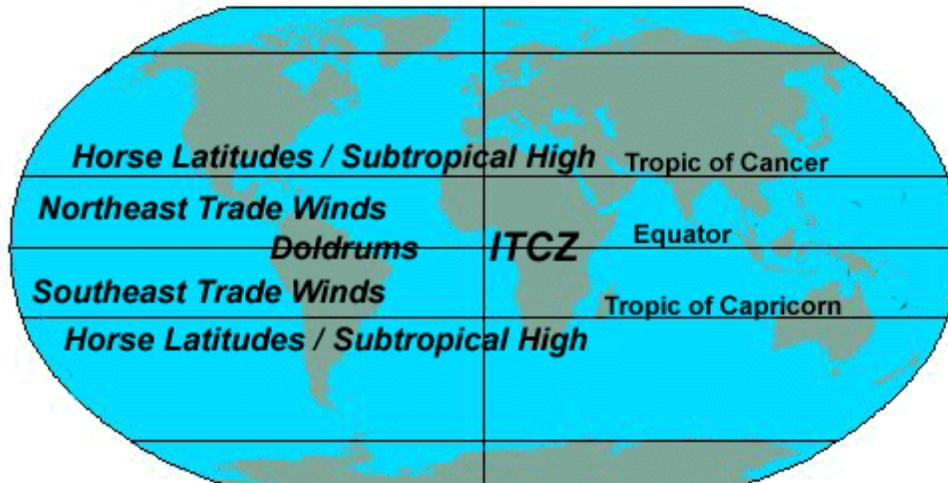
It is unlikely that the current El Niño episode will have any significant effect on normal weather patterns throughout the Pacific, at least through May 2009.

The ITCZ

The Intertropical Convergence Zone (ITCZ) is an area of low pressure that forms where the Northeast Trade Winds meet the Southeast Trade Winds near the earth's equator. As these winds converge, moist air is forced upward. This causes water vapor to condense, or be "squeezed" out, as the air-cools and rises, resulting in a **band of heavy precipitation** around the globe. This band moves seasonally, always being drawn toward the area of most intense solar heating, or warmest surface temperatures. It moves toward the Southern Hemisphere from September through February and reverses direction in preparation for Northern Hemisphere Summer that occurs in the middle of the calendar year. However, the ITCZ is less mobile over the oceanic longitudes, where it holds a stationary position just north of the equator. In these areas, the rain simply intensifies with increased solar heating and diminishes as the sun moves away. An exception to this rule occurs when there is an [ENSO](#) event, during which the ITCZ is deflected toward unusually warm sea surface temperatures in the tropical Pacific.

ITCZ by [Matt T. Rosenberg](#)

Near the equator, from about 5° north and 5° south, the northeast trade winds and southeast trade winds converge in a low-pressure zone known as the Intertropical Convergence Zone or ITCZ. Solar heating in the region forces air to rise through convection, which results in a plethora of precipitation. The ITCZ is a key component of the [global circulation system](#).



Weather stations in the equatorial region experience precipitation up to 200 days each year, making the equatorial and ITC zones the wettest on the planet. The equatorial region lacks a dry season and is constantly hot and humid. [Click here](#) for an animated map of annual precipitation on the earth - pay close attention to the annual migration of the ITCZ region. The location of the ITCZ varies throughout the year and while it remains near the equator, the ITCZ over land ventures farther north or south than the ITCZ over the oceans due to the variation in land temperatures. The location of the ITCZ can vary as much as 40° to 45° of latitude north or south of the equator based on the pattern of land and ocean.

In Africa, the ITCZ is located just south of the Sahel at about 10°, dumping rain on the region to the south of the desert. A [current map](#) of the ITCZ in Africa can be found online. The Intertropical Convergence Zone has been called the doldrums by sailors due to the lack of horizontal air movement (the air simply rises with convection). The ITCZ is also known as the Equatorial Convergence Zone or Intertropical Front.

There's a diurnal cycle to the precipitation in the ITCZ. Clouds form in the late morning and early afternoon hours and then by 3 to 4 p.m., the hottest time of the day, convective thunderstorms form and precipitation begins.

THROUGH THE MARQUESAS

Steve Van Slyke – “Kavenga”

TO THE MARQUESAS FROM MEXICO

I concur with the advice of Don of Summer Passage and others who advise an S-shaped course to the Marquesas rather than following the rhumb line. The ITCZ or convergence zone area of squalls and fluky winds normally becomes a thinner band as you go further west. However, don't overdo it and go too far or you will wind up having to beat back against the SE trades in order to lay the Marquesas. The idea is take a rhumb line to the “thin spot”, then turn due south to cross the convergence zone as quickly as possible, and then resume a rhumb line to the Marquesas. See the notes in the earlier parts of this section on routing.

ROUTES THROUGH THE MARQUESAS (See chartlet on last page)

The route you take through the Marquesas once you get there depends on your objectives, priorities and schedule. If the Marquesas are primarily just a waypoint en route to somewhere else, or if your schedule only allows for a week in the Marquesas, that will dictate a different route than if the Marquesas is a key destination for you, and you have two weeks or more to explore them.

The chartlet above assumes the latter, that you have the desire and the time to try to see all of the Marquesas (if not, skip to the end). The basic assumption is that cruising boats prefer to sail off wind rather than up wind whenever possible.

The charted route suggests making your initial landfall Hiva Oa for the following reasons: 1) it is the most windward island with a Gendarmerie where you can legally check into French Polynesia, 2) it has stores, supplies and services that you may need after your three week passage.

Alternately, you could make your landfall at the most windward island, Fatu Hiva. It is technically not legal to enter French Polynesia here, but a few boats do it every year without running into major difficulties. There are officials here who will note your presence and report it to Hiva Oa, so beware of fudging your arrival date when you do clear in.

But let's assume you follow the route as charted. Your first stop, after rounding the eastern cape, Matafenua, will be the village of Atuona and Taahuku Bay. The bay is quite small for the amount of traffic it gets from cruisers and copra ships. The swells from the SE quadrant refract off the cliffs on the northwest side of the bay and come into the anchorage. It can be so tight in here, especially with the Puddle Jumpers all converging at about the same time that everyone anchors with bow and stern anchors to make room, AND to keep their bows pointed into the swells. If a storm should crank up in the southern ocean and the winds start to come from that direction, be ready to leave Taahuku on short notice, particularly if you happen to be in the row of anchored boats furthest back. If you get caught, you could suddenly find yourself in breaking surf.

Atuona will feel like heaven after several weeks at sea and it is a beautiful place. However, we advise getting your business taken care of as quickly as possible and then moving on. The route that follows is not the one we took but is the one we wished we had taken after learning the local wind and weather patterns.

After leaving Atuona continue on circumnavigating Hiva Oa, first with a stop at Hana Menu. This is a must stop for a dip in the “Hollywood Pool” with its gushing freshwater spring and surrounding tropical flowers; and for the hike through the ruins of the ancient village and up to the high and dry plateau, where you may be treated to the sight of a herd of “wild” horses.

There are three more bays on the north side of Hiva Oa to choose from before heading off to the next island, Fatu Hiva. By coming to the north side of Hiva Oa, you have a better chance of laying Fatu Hiva in one tack. We had to tack our way there from the southern end of Tahuata.

There are two primary anchorages at Fatu Hiva, the most popular being Hana Vave or Bay of Virgins. This anchorage has probably been on the cover of more sailing magazines than any other. It is truly beautiful, although it can be a trifle rocky at times. We half expected to see King Kong peek out from behind one of the massive stone pillars.

When you’re ready to leave Fatu Hiva, the fun begins because it should be a sleigh ride from then on. Head for the southern end of Tahuata and check out the various anchorages on its leeward side. Our favorite is the northernmost, Hana Moe Noa. It is one of the few bays in the Marquesas with white sand beaches and safe snorkeling. (It is considered unsafe to snorkel or swim over black sand beaches due to sharks.)

Resume your sleigh ride from Tahuata to Ua Huku. We missed this island because we hadn’t figured out this route—we went to Ua Pou first instead. Because the anchorages on Ua Huku are exposed to the south, they can be rough or even untenable at times.

Your next downwind landfall will be Nuku Hiva, probably the best-known island in the Marquesas, thanks to Herman Melville; Crosby, Stills, Nash & Young, and others. There are many ways you could do it and here is just one. Start with the closest bay to Ua Huku, Controller’s Bay. This is also the location of the Valley of the Typee made famous by Melville. Hike up the valley to see the Tikis and maraes (temple platforms).

Continue on a counterclockwise circumnavigation with a stop at our favorite anchorage in the Marquesas, Anaho. Most anchorages in the Marquesas are exposed to swell to one degree or another. Anaho is one of the few that has 360-degree protection. And it has, to the best of our knowledge, the longest, white sandy beach in the Marquesas, and is just a flat out beautiful place. There was nothing there but a vegetable farm when we were there in 1991, but we understand there is now a restaurant and a pension (B&B). You can easily hike to the bays on either side of Anaho. The eastern bay was deserted and littered with flotsam, the bay to the west, Atiheu, had a restaurant and other services. We would give this anchorage more time than any other in the Marquesas.

Continue on around Nuku Hiva to Hakatea Bay, better known to cruisers as Daniel’s Bay, and now to the world as the site of one season of the *Survivors* TV series. I imagine that despite the alterations made by *Survivors* that it is still a beautiful anchorage.

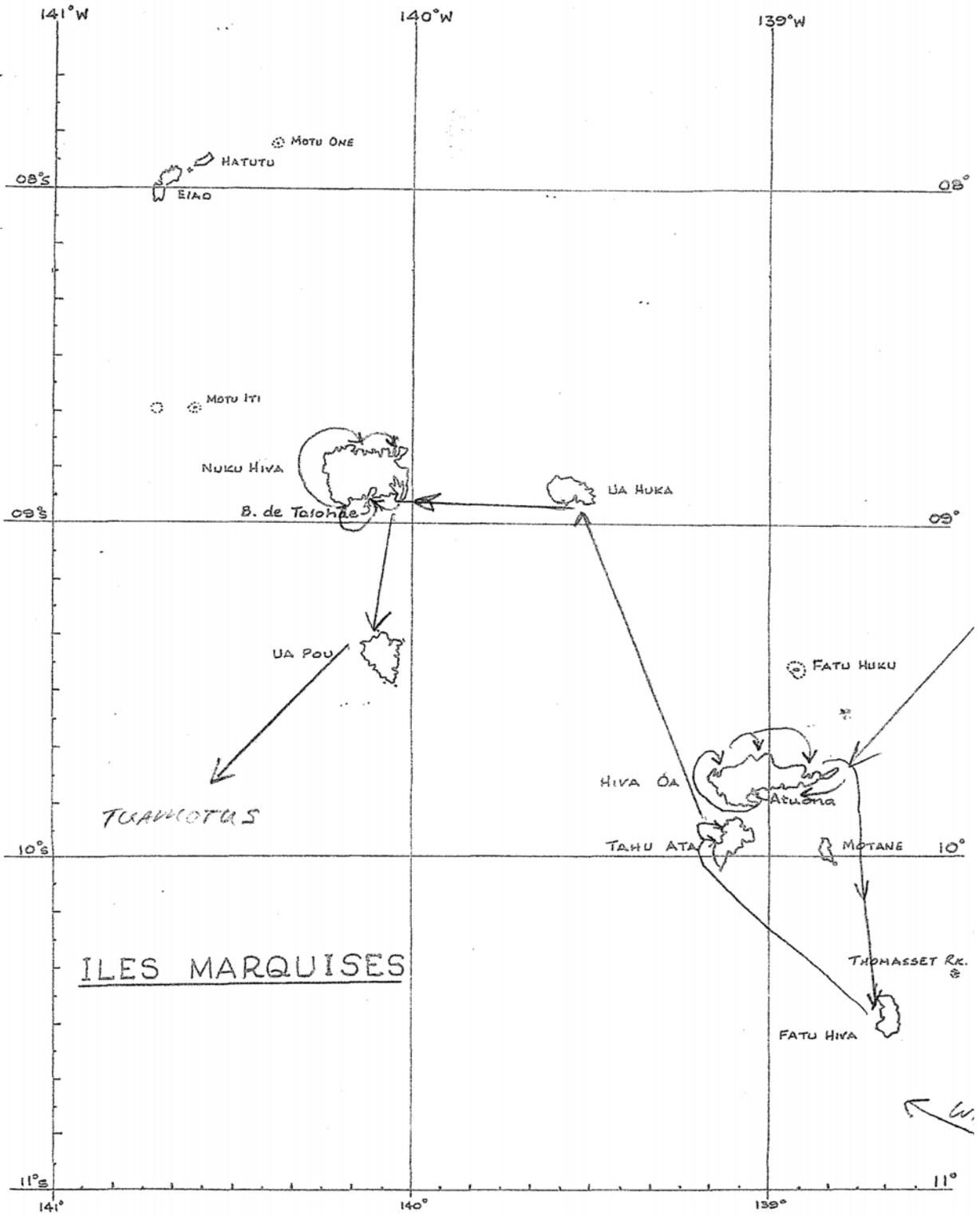
Conclude your tour of Nuku Hiva with a stop at Taiohae Bay, with probably the largest concentration of people and activity in the Marquesas. We made this our last stop in the Marquesas thinking it would have the best provisioning. This is another south facing anchorage, and the swell can get pretty impressive at times. Consequently, it is another anchorage where bow and stern anchors seemed to be the norm.

If we were doing it over again, and assuming conditions had not changed to a large degree, we would make Ua Pou our last stop in the Marquesas. We were disappointed in Taiohae Bay, Nuku Hiva, in that the provisioning was not as good as we had found earlier (in our case) on Ua Pou. At Hakahau Bay on Ua Pou we found at least four small grocery stores, that together gave us a better and fresher selection than what we found at Taiohae. All that may have changed by now, but what hasn't changed is the fact that Ua Pou is the departure point closest to our next destination, the Tuamotu Archipelago. It is also the most visually striking of the Marquesas.

That concludes the route for those that have the time and choose to devote it to seeing all of the Marquesas. Aside from not having the chance to visit Ua Huku, there is not one island in the Marquesas that we would have skipped based on the knowledge we gained, the sights we saw and the experiences we had.

Nevertheless, there are many who probably cannot for one reason or another, afford to allocate three to four weeks of their cruise for the complete tour, especially in light of the recent difficulties in getting visa extensions, which were not a problem when we were there. For those of you in this situation, we would recommend making landfall at Taiohae Bay on Nuku Hiva, spending two to five days at Anaho, and then heading to Hakahau on Ua Pou to provision and clear out for the Tuamotus or Tahiti.

Bon voyage!!



Kavenga Suggested Route Through The Marquesas

Pacific List of Lights 2006; US Publication 111

This US gov't publication of 358 pages is on the Puddle Jump 2009 CD. It includes Pacific lights on North and South America, Pacific Islands, Australia and New Zealand. As a sample, below is page 60 of the list, with the Marquesas starting in the middle. To print out the lights from the Marquesas to Fiji is about 90 pages.

(1) No.	(2) Name and Location	(3) Position	(4) Characteristic	(5) Height	(6) Range	(7) Structure	(8) Remarks
SOUTH PACIFIC ISLANDS							
2841.2 K 4998.63	---Rokati.	14° 26.5' S 146° 16.0' W	Fl.R. period 2.5s	13 4	2	PORT (A) R, beacon, topmark; 19.	
2841.21 K 4998.64	---Pirake Keke.	14° 26.3' S 146° 15.6' W	Q.R.	13 4	2	PORT (A) R, beacon, topmark; 19.	
ILES AUSTRALES:							
-Tubai:							
2842 K 5020	--Passe de Te Ara Moana Range, front.	23° 21.0' S 149° 30.2' W	Iso.G. period 4s	20 6	6	White beacon, red bands; 20.	
2842.5 K 5020.1	---Rear, 144 meters 156°from front.	23° 21.0' S 149° 30.2' W	Iso.G. period 4s	33 10	4	White beacon, red band; 33.	Synchronized with front.
-Raivavae:							
2843 K 5025	--Passe Mohanaton Ledge Range, front.	23° 51.5' S 147° 40.2' W	Iso.R. period 4s	56 17	6	White pylon; 46.	
2843.5 K 5025.1	---Rear, 300 meters 167°18¢ from front.	23° 51.7' S 147° 40.2' W	Iso.R. period 4s	112 34	6	White beacon, red band; 17.	Synchronized with front.
ILES MARQUISES:							
2844 K 5058	-Hiva Oa, Atuona, Baie Taaoa.	9° 48.6' S 139° 01.3' W	Fl.W.R.G. period 2s fl. 0.5s, ec. 1.5s	157 48	W. 8 R. 6	White concrete structure; 10.	G.-313°30¢-332°30, W.-339°30¢, R.-358°30¢.
2848 K 5060	--Taa Huku Bay.	9° 48.5' S 139° 01.1' W	Q.G.	23 7	3		
2850 K 5057	-Baie de Vaipae Pointe Matatehotu, Ua-Huka.	8° 56.7' S 139° 33.9' W	Fl.G. period 2.5s		3		
2852 K 5053	-Nuku Hiva, Baie Taiohae.	8° 55.5' S 140° 05.3' W	Dir.Fl.W.R.G. period 2.5s fl. 0.5s, ec. 2s	48 15	W. 8 R. 6	White pylon; 39.	G.-347°30¢-357°30¢, W.-000°30¢, R.-010°30¢.
2856 K 5052	--Fort Collet.	8° 55.8' S 140° 04.8' W	Q.(3)R.G. period 6s	95 29	R. 2 G. 4	White structure, black top; 16.	R. shore-010°, G.-100°(marks anchorage area), R.-shore.
ILES DE LA SOCIETE (F.):							

-Tahiti:							
2860 K 4952	--Pointe Venus.	17° 30.0' S 149° 30.0' W	Fl.W. period 5s fl. 0.3s, ec. 4.7s	102 31	27	White square tower; 108.	
2862 K 4952.25	--Passe d' Arue.	17° 31.2' S 149° 31.5' W	Fl.G. period 2.5s fl. 0.5s, ec. 2s	10 3	3	Green beacon, triangular daymark.	
2863 K 4952.7	--Passe de Taunoa Range, front.	17° 31.6' S 149° 33.1' W	Iso.R. period 4s	26 8	7	Red and white column; 26.	
2863.5 K 4952.71	---Rear, 126 meters 173°42¢ from front.	17° 31.7' S 149° 33.1' W	Iso.R. period 4s	43 13	7	Red and white column; 39.	Synchronized with front.
2863.8 K 4952.8	--Pointe Iriti.	17° 31.4' S 149° 32.8' W	V.Q.(6)+L.Fl.W. period 10s	13 4	4	S. CARDINAL YB, beacon, topmark; 16.	
--Taunoa Channel:							
2864 K 4953	---Beacon.	17° 31.3' S 149° 33.2' W	Fl.G. period 2.5s	16 5	5	STARBOARD (A) G, beacon, topmark; 13.	
2868 K 4953.4	---Beacon.	17° 31.4' S 149° 33.3' W	Fl.R. period 2.5s	13 4	3	PORT (A) R, beacon, topmark; 13.	
2872 K 4953.8	---Beacon.	17° 31.5' S 149° 33.4' W	Q.G.	13 4	3	STARBOARD (A) G, beacon, topmark; 16.	

Bowditch -The American Practical Navigator

An Epitome of Navigation; Pub. #9

This US gov't publication of 569 pages is on the Puddle Jump 2009 CD. First published in 1814 by Nathaniel Bowditch, and last updated in 1995, if you want to know almost anything about marine navigation, from celestial to piloting to radar, it's in this outstanding reference manual. Below is the first page to Chapter 1.

CHAPTER 1

INTRODUCTION TO MARINE NAVIGATION

DEFINITIONS

100. The Art And Science Of Navigation

Marine navigation blends both science and art. A good navigator gathers information from every available source, evaluates this information, determines a fix, and compares that fix with his pre-determined "dead reckoning" position. A navigator constantly evaluates the ship's position, anticipates dangerous situations well before they arise, and always keeps "ahead of the vessel." The modern navigator must also understand the basic concepts of the many navigation systems used today, evaluate their output's accuracy, and arrive at the best possible navigational decisions.

Navigation methods and techniques vary with the type of vessel, the conditions, and the navigator's experience. Navigating a pleasure craft, for example, differs from navigating a container ship. Both differ from navigating a naval vessel. The navigator uses the methods and techniques best suited to the vessel and conditions at hand.

Some important elements of successful navigation cannot be acquired from any book or instructor. The *science* of navigation can be taught, but the *art* of navigation must be developed from experience.

101. Types Of Navigation

Methods of navigation have changed through history. Each new method has enhanced the mariner's ability to complete his voyage safely and expeditiously. One of the most important judgments the navigator must make involves choosing the best method to use. Commonly recognized types of navigation are listed below.

- **Celestial navigation** involves reducing celestial measurements to lines of position using tables, spherical trigonometry, and almanacs. It is used primarily as a backup to satellite and other electronic systems in the open ocean.

- **Radio navigation** uses radio waves to determine position by either radio direction finding systems or hyperbolic systems.

- **Radar navigation** uses radar to determine the distance from or bearing of objects whose position is known. This process is separate from radar's use as a collision avoidance system.

- **Satellite navigation** uses artificial earth satellites for determination of position.

Electronic integrated bridge concepts are driving future navigation system planning. Integrated systems take inputs from various ship sensors, electronically display positioning information, and provide control signals required to maintain a vessel on a preset course. The navigator becomes a system manager, choosing system presets, interpreting system output, and monitoring vessel response.

In practice, a navigator synthesizes different methodologies into a single integrated system. He should never feel comfortable utilizing only one method when others are available for backup. Each method has advantages and disadvantages. The navigator must choose methods appropriate to each particular situation.

With the advent of automated position fixing and electronic charts, modern navigation is almost completely an electronic process. The mariner is constantly tempted to

- **Dead reckoning (DR)** determines position by advancing a known position for courses and distances. A position so determined is called a dead reckoning (DR) position. It is generally accepted that only course and speed determine the DR position. Correcting the DR position for leeway, current effects, and steering error result in an **estimated position**

(EP). An inertial navigator develops an extremely accurate EP.

- **Piloting** involves navigating in restricted waters with frequent determination of position relative to geographic and hydrographic features.

rely solely on electronic systems. This would be a mistake. Electronic navigation systems are always subject to failure, and the professional mariner must never forget that the safety of his ship and crew may depend on skills that differ little from those practiced generations ago. Proficiency in conventional piloting and celestial navigation remains essential.

102. Phases Of Navigation

Four distinct phases define the navigation process. The

Puddle Jump Crossing Times

This summary shows the results of many of the Puddle Jump passages from Mexico to French Polynesia. Boats from other departures (Galapagos, San Francisco) not included.

2006 (20 boats)

- Passage Days: 18 to 29 (Average 22)
- Miles Covered: 2700 to 3200nm
- Engine Hours: 10 to 120 (Average 50)
- Crossed Equator: 127 to 132 Degrees West (Average 129)
- Maximum Sea: No info
- Maximum Wind: No info
- Best 24 Hour Run: 230 to 225 (Average 165)

<u>Boat Name</u>	<u>Departure Point & Date</u>	<u>Landfall Point & Date</u>	<u>Days in Passage & Total Miles</u>	<u>Engine Hours Used</u>	<u>Longitude Crossing Equator</u>	<u>Best 24 Hour Run in Miles</u>	<u>Worst 24 Hour Run in Miles</u>	<u>Number of Fish Caught</u>	<u>Boat Breakdowns</u>
Andiamo	Cabo San Lucas 3/09/06	Hiva Oa	19 2721km	1	129-47W	172	114	2	Chafe
Aquarelle	Zihuatanejo 3/05/06	Nuku Hiva 3/28/06	24 Lot's of miles	100	132W	140	90	1	Luff tape, Battens, Auto-Pilot
Arctic Fox	Puerto Vallarta 3/6/06	Fatu Hiva 4/7/06	22 2700km	53	130W	148	80	3	Whisker Pole
Blue Sky	Nuevo Vallarta 4/08/06	Hiva Oa 05/04/06	29 2800km	60	127-39W	130	30	Many!!	None
Espirit	Galapagos 4/14/06	Fatu Hiva 5/8/06	24 3250km	59	80-37W	170	30	2	Autopilot
Kaien	San Francisco, Calif 4/17/06	Nuku Hiva 3/10/06	22 3100km	23	131W	170	129	DNF	Motor mounts, Fresh water pump, chafe
La Vie	Puerto Vallarta 4/02/06	Eaio, Marquesas	21 2820km	9.5	131-33W	165	101	2	Spinnaker, Swageless fittings
Maggie Drum	Zihuatanejo 3/21/06	Hiva Oa 4/15/06	25 3013km	120	129W			DNF	Watermaker, wind pilot
Neried	Puerto Vallarta 3/28/06	Hiva Oa	24 2800km	18	120-07W	142	22	DNF	Wind generator frame

New Dawn	Puerto Vallarta 3/20/06	Hiva Oa 4/13/06	23 Lot's of miles	90	130-54W	157	93	DNF	None
New Horizons	Puerto Vallarta 3/21/06	Nuku Hiva 4/13/06	23 3083km	12	129-57W	170	68	3	None
Ohana Kai	Zihuatanejo 3/30/06	Fatu Hiva 4/17/06	19 2900km	50	130-15W	183		0	
Oz	Zihuatanejo 3/22/06	Hiva Oa 4/17/06	27 3008km	80	130W	151	70	None	Transmission cooler, Bilge pump, Boom vang
Ranger	Zihuatanejo 3/22/06	Hiva Oa 4/14/06	23 3138km	96	129-12W	160	92	2	Chafe
Sandpiper	Zihuatanejo 3/30/06	Hiva Oa 4/27/06	28 3179km	100	129W	141	90	Several Bonito	Motor mounts, Raw water impeller, DC Genset
Sarabi	Zihuatanejo 3/27/06	Hiva Oa 4/12/06	15 2832km	58	129-40W	218	132	2	Auto-Pilot motor brushes
Sensei	Puerto Vallarta 4/10/06	Hiva Oa 05/01/06	21 2634km	50	126W	172	59	4	Reef points
Serenity	La Cruz, Mexico 3/22/06	Hiva Oa 4/18/06	27 2700km	12	128-15W	140	36	4	Main Boom, Topping Lift
Sisiutl	Puerto Vallarta 4/06/06	Nuku Hiva 5/03/06	26 3163 km	50	125-17W	169	35	2	watermaker, bilge pump, salt water pump
Whistle Wing	Zihuatanejo 3/16/06	Hiva Oa 4/03/06	18 Lot's of miles...	19	129-54W	225	150	1	None

2005

- Passage Days: 21 to 32 (Average 26)
- Miles Covered: 2800 to 3100nm
- Engine Hours: 7 to 145 (Average 70)
- Crossed Equator: 121 to 140 Degrees West (Average 130)
- Maximum Sea: 6' to 20' (Average 10')
- Maximum Wind: 22k to 47k (Average 35k)
- Best 24 Hour Run:
 - Mono Hull: 136 to 180 (Average 160nm)
 - Multi Hull: 180 to 213nm

Routing to New Zealand from Tonga

Route

Your route will depend on the expected weather. We'd recommend following a course slightly west of the rhumb line from Tonga to bring you close to Minerva Reef. This provides an opportunity to stop and wait for conditions to change.

For an ideal passage we were looking for the following:

- Good sailing conditions from Tonga to Minerva Reef
- Leave/bypass Minerva with a low pressure system around New Zealand but forecast not to be blocked. Sail comfortably and optimized for VMG towards Opuia.
- As the high pressure system moves in, fall off to the west. 30 south, 175 east is often a good intermediate waypoint but conditions may change this.
- Optimize course to Opuia but plan for conditions as you close the island. Anticipate landfall conditions and get your westing or easting in before closing the coast. If you don't you may be faced with local wind-driven currents and short seas.

If you talk with cruisers who have the trip twenty times, they'll tell you that most of them have been fine but none the same. Weather can change fast – we went from flat seas and 10 knots aft of the beam to 30 knots on the nose inside of 18 hours.

Minerva Reef

Stopping at Minerva Reef wasn't in our cruising plans but we felt it prudent to leave that option open as we are a smaller and slower boat. Once there, we decided to stop as the longer-range forecast did not sound appealing for the end of our trip.

North Minerva is easily big enough for the entire fleet, so don't worry about space. Conditions were generally good even with over 35 knots blowing at times. Twice a day when high tide arrives it gets a more bumpy as seas come over the top of the reef. Both the CMAP and Maptech charts were dead-on accurate for the entrance and you can safely use a waypoint in the center of the pass for your approach. Eyeball navigation can be used once through the pass.

As a bonus, lobsters are plentiful and large. Those that visited South Minerva found even bigger and more lobsters.

Sailing-By-Color: Reading Tropical Waters by Their Color

Tropical waters provide sailors with some unique clues about what lies beneath the surface, thanks to the color shifts that accompany changes in depth. Unfortunately, "sailing-by-color" works only in good weather, with the sun overhead; even a passing cloud is enough to confound the visual navigator. Nevertheless, it pays for all tropical cruisers to perfect their sailing-by-color skills, especially when heading into remote areas where markers may be few and far between. On this page we present a few examples of how colors can help you navigate in the tropics. For more on this subject see Chapter 4 (Navigating in Tropical Waters), in *Tropical Cruising Handbook*.



To the right of the reef above lies an extensive and sheltered bay. Although easy to see on a clear day, this reef can be very hard to spot on a calm, overcast day (when colors are muted, and there is no surf break). Were it not for the marker on the reef's right-hand tip, it would then be very easy to turn into the bay too soon, and thus end up on the reef.



The channel through the reef above (indicated by the red marker in the center of the photo) is clearly visible. Note that the reef in the foreground extends a short distance to the left of the reef marker.



Shades of blue. The change in color above indicates an abrupt decrease in depth, from the navigable water in the foreground (8-10' deep) to shoal water near the horizon (5' or less).



The only safe passage between these islands (if there is one) is on the left side of the photo. The light green band extending out from either side of the island in the foreground indicates water too shallow for all but a dinghy.



Here the presence of a reef beyond the marker is confirmed by the surf break, and hinted at by a light greenish color between the marker and the surf break. A cloud has momentarily blocked the sun, however (note the shadow extending through the center of the photo), and the boundaries of the reef are impossible to see.



Once again a cloud has interfered with visibility, and the reef this marker is warning of can't be seen.

Chapter 3 – Weather

Chapter Overview

- Don Anderson on Mexican Ports to The Marquesas & Transiting the Intertropical Convergence Zone 2/07
- Pilot Charts South Pacific (on CD only)
- List of Worldwide HF Weatherfax Stations (on CD only) 5/06
- NOAA Weather Info Links
- Weather info
- Weather Web Sites
- Weather Books
- New Zealand Weather & Routing 2/07
- Reading Weatherfax Charts
- Weatherfax Schedules 5/06
 - Honolulu & Pt Reyes
 - New Zealand & Australia
- Weather symbols

Don Anderson Weather Broadcast Schedule as of December 2008

Radio Schedule November 2, 2008

Don Anderson

My ham call N6HG

My Private Coast Station, SUMMER PASSAGE RADIO WPXU557

My Valiant 47 “SUMMER PASSAGE” WBX8756

Oxnard, CA

(805) 983-3267

<u>Time</u>	<u>Freq</u>
<u>UTC</u>	<u>kHz</u>

1415*	8122	Amigo Net. My Forecast, Ensenada to Socorro Island and Sea of Cortez to Puerto Vallarta to Acapulco
-------	------	---

1430	3968	LSB Sonrisa Net. I monitor for weather reports and any emergency traffic
------	------	---

1545	7294	LSB Chubasco Net. I monitor for any emergency traffic.
------	------	---

1615	7233.5	LSB Baja California Maritime Service Net. My forecast San Diego to Acapulco including Sea of Cortez. Weekdays only. I am backup for AA6TP if needed on weekends.
------	--------	---

1630 miles from my	12359	I monitor 12C for weather questions usually 500 to 2500 station.
1645* Atlantic and 18840, 22165 beyond 4000	16534	I monitor 16C for weather questions from vessels in North North and South Pacific , out to 7000 mi from my station. and 25115 are alternate frequencies, especially for vessels miles.
0045 2500 mi from my	12359	I monitor 12C for weather questions from vessels out to station.
0100* and South	16534	I monitor 16C for weather questions from vessels North Pacific , out to 7000 mi from my station. 18840, 22165 and 25115 are alternate frequencies, especially for vessels beyond 4000 miles.
0200 weather since time shortens	6516	Southbound Net. Brief summary on 6D of any significant Amigo net. During summer months the skip on 6D at this so I sometimes shift to 8122 or 12C for answering any weather questions from Mexico.

*If nothing heard after 15 minutes I close down.

On Fridays early I have a men's breakfast /bible study meeting so no watch until afternoon.

On Sundays I close down for the rest of the day after my morning 16C watch.

Mexican Ports to The Marquesas

Dr. Donald J. Anderson; Updated February 2009

TRANSITING THE INTERTROPICAL CONVERGENCE ZONE

The Intertropical Convergence Zone

The Intertropical Convergence Zone, usually referred to as the ITCZ, is a band of disturbed unsettled weather surrounding the earth a few degrees north of the equator where the northeast and southeast trade winds converge and where the sea surface temperatures reach their maximum values. It is characterized by cells of moderate to strong convection interspersed with areas of

flat calm (the doldrums). The convection cells appear as tall cumulonimbus clouds reaching heights well above 20,000 feet. At the surface beneath these cells there is frequent torrential rain with thunder and lightning. Conditions are often squally with winds from any direction. The squalls rarely exceed 35 knots.

Unlike the bad weather associated with frontal systems at higher latitudes where they travel from west to east at about 20 knots or more, those in the ITCZ seem to form and dissipate in place, in other words they are stationary systems. Furthermore they can form and disappear over very short periods of time, sometimes less than 24 hours. Seas usually are moderate to small but confused since they can come from any direction or several directions at once.

The ITCZ migrates north and south following the sun, lagging it by about two months. The north-south width of the disturbed area varies from none at all to as much as 300 miles wide. The north-south seasonal boundary migration is usually between about 01N and 14N with the northern extreme occurring during August and the southern extreme during February.

During the winter and spring months, when the ITCZ is closest to the equator, cyclonic storms can not form in the ITCZ because there is negligible coriolis force close to the equator. However, small area low level cyclonic circulations (LLCC's) up to about 120 miles in diameter with winds to 35 knots do occasionally form with very heavy rain and of course confused seas. These have the characteristics of miniature tropical disturbances. They travel east to west at 10 to 20 knots embedded in the southern boundary of the northeast trades. The strongest winds will be found in their northwest quadrant where they enhance the trades.

During the late summer months, when the ITCZ is at its maximum north migration, it experiences a larger coriolis force (actually a conservation of momentum effect rather than a force). This physical situation is an essential component of cyclogenesis leading to tropical storms and hurricanes. It is the principal reason why the highest frequency and the greatest intensities for hurricanes occur during the months of August and September.

Another tropical weather phenomenon affecting conditions along the ITCZ is the tropical wave. This is a whole subject unto itself so suffice it to say here that if one is prudent and makes passage from Mexico to the Marquesas between mid-March through the end of April, one does not have to worry about them. However, later in the season they could really spoil you day.

Should you be unfortunate enough to be making this passage late in the season then here is the stuff to watch for.

Each year on average, we experience about 60 tropical waves moving east to west. They begin their journey along the coast of West Africa and march west at 10 to 15 knots eventually dissipating near the date line. They are north-south troughs lying between about 05N and 18N, about 800 to 1200 miles long. Width is about 300 miles at the surface. They occur mid-May through the end of November so that means a wave passes about every three to four days. Most pass relatively unnoticed to the cruising sailor. Others cause a significant clockwise wind shift as they pass and some have torrential rain on the back side. A small number, about 16 in all, interact with disturbed areas in the ITCZ such that they become part of a significant tropical cyclone development, i.e. cyclogenesis. In the Northeast Pacific, all tropical storms and hurricanes have at least one tropical wave as a component of their cyclogenesis. Only about half of the tropical cyclones on the Atlantic side have such a component, why I don't know.

Frequently in the transition zone between the stable northeast and southeast trades there is an area of southerly winds of 5 to 20 knots over a north-south distance of up to 100 miles. Northerly winds in the transition zone are very rare.

Sometimes there is sufficient separation between the convection cells that one might find a smooth transition between the northeast and southeast trades with the winds never dropping below 15 knots. If one is fortunate enough to find this condition while transiting the ITCZ, it is more likely to be blind luck than astute strategic planning. The convection cells simply form, dissipate and reform in a seemingly random fashion over periods of less than 48 hours which is far too brief a period for a slow moving vessel to effectively steer a course that will assure her of a smooth transit of the ITCZ.

The location of the actual convection is rarely right over the convergence zone. Strictly speaking, the convergence is a zone of wind convergence and the convection cells usually lie on the north side of the convergence zone with their southern boundaries close to the convergence line.

This annual migration is illustrated by the climates of those islands lying in the tropics versus those situated close to the equator.

Isla del Cocos (5-30N 87-00W) and the Palmyra Atoll (5-55N 162-05W) are both situated at about 06°N. Although they are 4500 miles apart, they both are within the ITCZ for most of the year which is the reason they have average annual rainfalls of about 280 and 180 inches a year respectively. This accounts for the large tropical rain forests on both islands. Isla del Cocos is the more humid of the two because it is situated in the far Eastern Pacific where winds are mostly light while the Palmyra Atoll is in the Central Pacific where the trade winds are well established and consistent.

The Galapagos Archipelago (00-30N 90-40W) straddles the equator and Christmas Island (01-55N 157-25W) is only 115 miles north of the equator. Although they are 4000 miles apart, their annual rainfall is similar; about 20 and 35 inches respectively. Annual rainfall in the Galapagos is fairly consistent whereas on Christmas Island it goes through wide swings between moderate rainfall to periods of drought lasting 18 months or more. Part of the reason is the tendency of the ITCZ to thin out as it progresses west toward the Central Pacific. During a strong El Niño episode, when sea surface temperatures can be two to four degrees Celsius above normal, the trade winds are weaker and the annual rainfall in the Galapagos and Easter Island can exceed five times the average amount.

As already mentioned, the recommended period for passages from Mexican ports to the Marquesas is about the middle of March through April. During this period, the ITCZ usually lies between about 03N and 07N.

The north-south width of the convection cells tends to decrease towards the west, especially west of about 125W.

Figures 1 and 2 are color-coded infrared satellite images. Note the thinning out of the ITCZ as one moves west. Of even greater significance is the change in the ITCZ over a very short period of time.

These images were taken only thirteen days apart. With that in mind, note the significant shift towards the south and the essential disappearance of any convection west of 130W on March 9. This does not mean the ITCZ is moving south in a predictable manner. It simply illustrates dramatically the large variations that can take place over very short periods of time. The distribution of convection could easily return to something like what existed thirteen days earlier. Such is the meandering variability of the convergence zone.

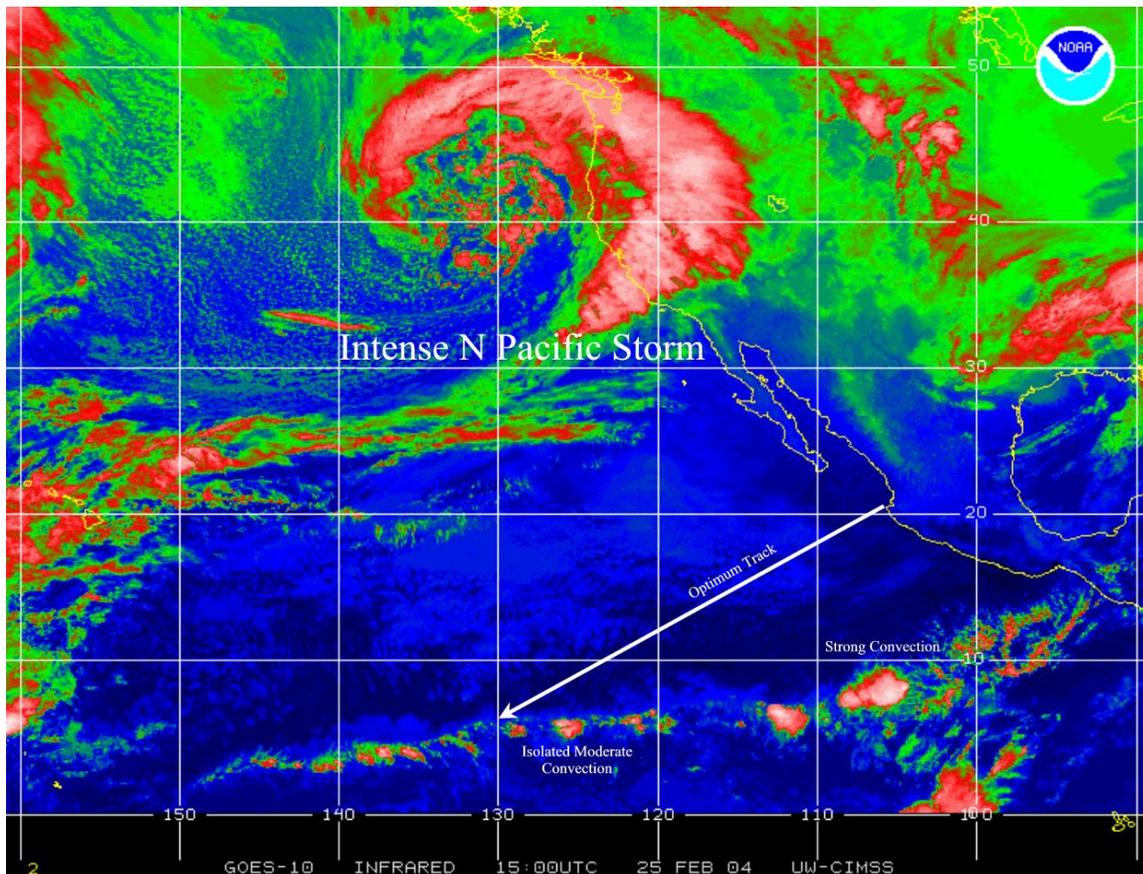


Figure 1
Infrared Satellite Image for February 25, 2004

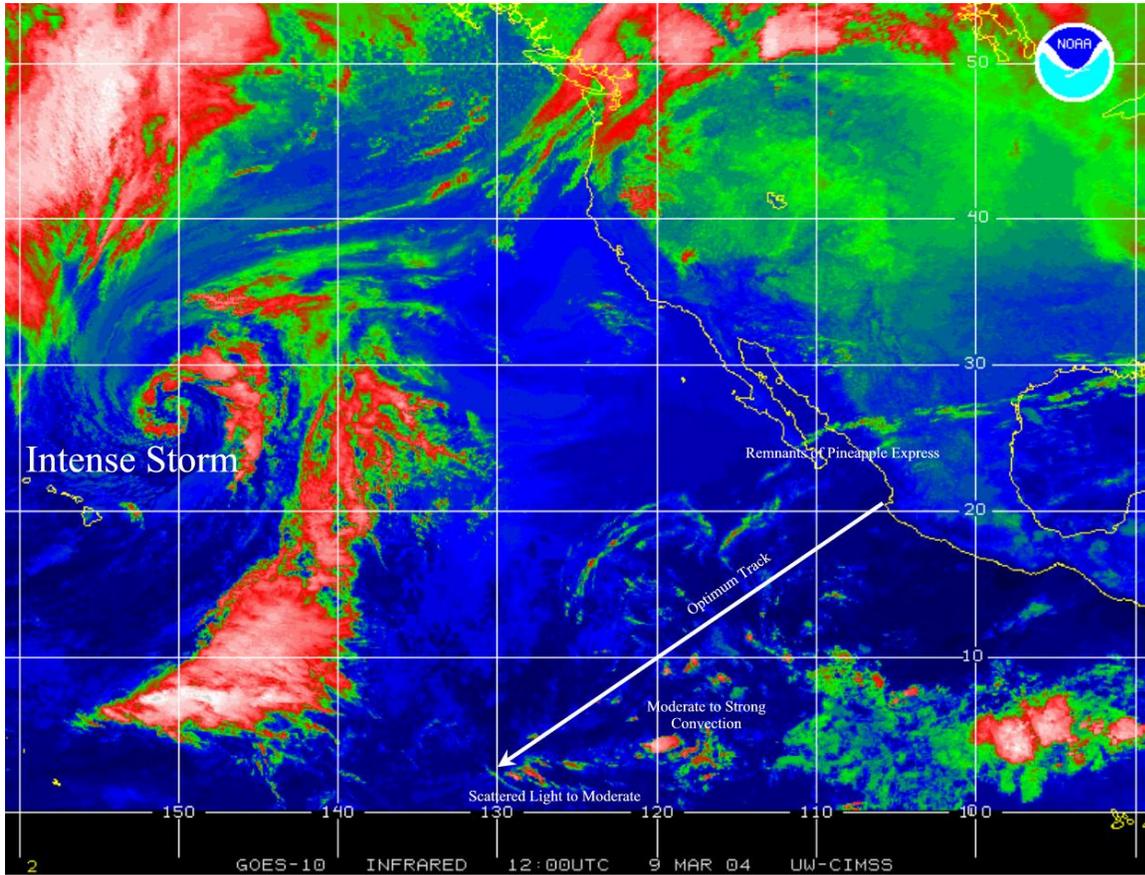


Figure 2
Infrared Satellite Image for March 9, 2004

The location of the ITCZ is given every six hours in the NWS High Seas Forecasts. The format is a sequence of lat/lon coordinates with comments on where along the ITCZ there is moderate or strong convection. This is useful information but one should not expect it to be current. The reason is that the convection cells can develop as strong thunderstorms and then be completely dissipated over a period of less than 24 hours. Unlike thunderstorms at higher latitudes, where they move from west to east at about 20 knots, those in the ITCZ tend to remain stationary. On the other hand, the latitude or line of the ITCZ, wiggles or meanders like the Gulf Stream. For a given longitude, the north-south position of the ITCZ can vary as much as 120 miles in a 24-hour period. What all this means is that by the time a vessel receives the ITCZ data, conditions have probably changed significantly. A slow moving vessel can not expect to find a hole in the convection chain based on information received via INMARSAT-C or USCG HF-voice weather forecasts. One might be able to improve one's chances if one has the capability to receive (real time) the low altitude polar orbiting NOAA weather satellite infrared encoded images directly as they pass over one's location. Aboard "*SUMMER PASSAGE*" we use the OCENS software and receiver.

Forecasting the day-to-day meanderings of the ITCZ is for me at any rate impossible. It's rather like trying to predict which way the rabbit is going to go when I chase him across the meadow. I know he probably will stay somewhere ahead of me, but when and where will he zig or zag? The only charts I'm aware of in the public domain that come reasonably close to forecasting the ITCZ are the streamline charts generated by the USN's NOGAPS model. But even then, one has to weight or bias them each day based on QuikSCAT scatterometer surface wind data. Computed wind vectors from scatterometer measurements are remarkably accurate. However, one has to be careful not to put too much faith in the data on the edges of the swaths or in the vicinity of very heavy precipitation.

So how does a slow moving vessel make something useful out of ITCZ data? Well, if one plots the coordinates every 24 hours, beginning several days in advance, and if one uses the same piece of paper or electronic chart, then one will have a band that shows the most probable width and location of the ITCZ. To illustrate this exercise I have plotted the daily coordinates given for the ITCZ over an eight-day period. Figure 3 shows these plots. Note the wider swings at the eastern end versus the smaller swings at the western end. Also note that during this brief period of time, the north-south swings range from about 175 to 475 miles. This illustrates my point that a slow-moving vessel can not expect to exploit the ITCZ to advantage. The rate of changes in the ITCZ far exceed the rate of progress of a slow-moving vessel.

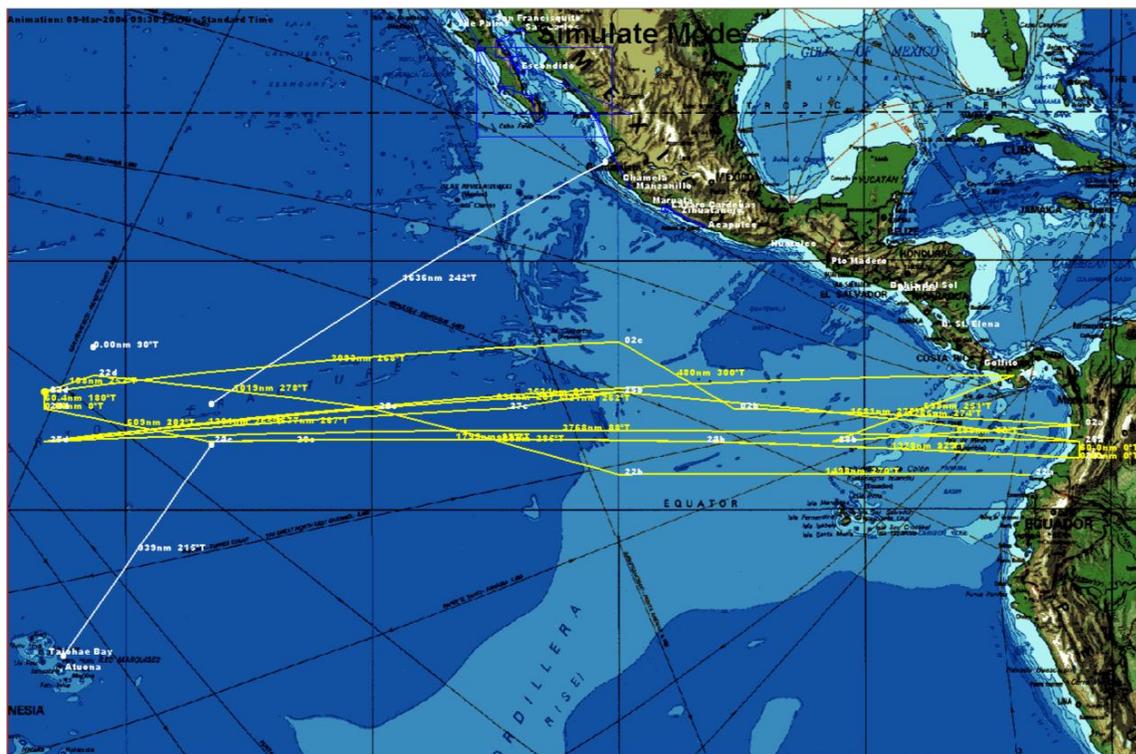


Figure 3
Plots of Daily ITCZ Coordinates Over An Eight-Day Period
February 22 through March 2, 2004

The Optimum Intermediate Waypoint

Obviously, based on the above illustrations, there is no precise optimum intermediate waypoint. All one can say is that at this time of year it is most likely to be somewhere between 03N and 07N at about 130W.

Generally one needs to remain north of the ITCZ for as long as possible. This means one makes most of one's westing in the northeast trades. Another reason to elect this strategy is that at this time of year the northeast trades tend to be stronger than the southeast trades. A third reason is that one is more likely to find spaces between the convection cells the further one is to the west. However, it usually is not worth sailing further than about 132W before diving south; the extra distance isn't worth it.

There is a fourth reason that has to do with the doldrums. During the recommended season, there is a good probability that the further west one goes, the more likely one will find a sharp transition between the northeast and southeast trades. Cutting the corner before the recommended waypoint, i.e. diving south, increases the probability of encountering large areas of calm. If you leave late in the season, say in June, this becomes even more probable. The reason is that the low-pressure systems forming a few hundred miles off Southern Mexico during hurricane season have the effect of markedly reducing the strength of the winds in the far southeastern corner of the trade wind belt.

A fifth reason for making most of your westing in the northeast trades as well as not leaving it too late to depart, is that as hurricane season approaches, the southeast trades in the far Eastern Pacific steadily veer, becoming southwest winds. Not only would these winds be head winds, the severity of the ITCZ weather increases as the winds shift from a convergence situation to one of shear.

On reaching the ITCZ most vessels power or motor sail due south so as to cut the ITCZ at right angles in order to transit in the shortest possible time. Once one is finally in steady southeast trades one sets course directly for the Marquesas. Sometimes the southeast trades are actually east winds.

Sailing this dogleg course is about 100 miles longer than the direct great circle or rhumb line route. That's less than three percent more than the shortest route.

While this strategy minimizes the amount of time one may be exposed to the ITCZ, one should still expect squalls at any time along the route, especially after clearing the Revillagigedo Archipelago. After all, this entire 3000-mile passage is made in the tropics.

South Pacific Pilot Charts

The US government has produced pilot charts for the South Pacific that show for each of the 12 calendar months the average conditions expected, with both text and color graphic representation of the winds, pressures, temperatures and cyclone probabilities. There is also an El Nino chart.

The 26 pages are best printed on 8 ½ x 17 legal size paper in color. The document is not printed in this manual, but is on the Puddle Jump CD as an appendix.

List of Worldwide HF Weatherfax Stations as of 5/06

This document is self-explanatory. The Hawaii and Pt Reyes CA station data are included in the printed document below. The document is not printed in this manual, as it is 124 pages but is on the Puddle Jump CD as an appendix.

Weather Forecast Services For South Pacific Noonsite 1/06

From: Bob McDavitt, Weather Ambassador mcdavitt@metSERVICE.com

The main area I watch is from French Polynesia to the Australian East coast (but I can do Galapagos to Marquesas if you ask). I do not offer routing information (waypoints and so forth) but I do offer Weathergrams and 5-day forecasts --

Weathergrams: I occasionally (usually on a Sunday) send my weather ideas for sailing around the South Pacific as email messages, which I call weathergrams. Use these to plan when to start your voyages. You can log yourself on (and off) these (and/or yacht reports) from http://www.pangolin.co.nz/yotreps/list_manager.php

MetService High Seas Forecasts are sent in English by ZLM on HF 6224 and 12356 at 0303Z, 0903Z, 1503Z and 2103Z and on 8297 and 16531 30 minutes later. Full details are in the Nautical Almanac or at <http://www.hydro.linz.govt.nz/msi/met/sched-broadcasts.pdf>

MetService maps are sent by Radio Fax on ZKLF on SSB 3247.4, 5807, 9459, 13550.5 or 16340.1, Sked sent between 2300 and 2359Z and is at http://www.metSERVICE.co.nz/services/radiofax_schedule.asp

All the above is free in the public domain.

Other weather forecast information by email : From www.buoyweather.com for \$10 you can get 100 messages, triggered by your own email, each giving a voyage forecast. Then there is pangolin@xtra.co.nz - send an email with the word HELP in the message and it will auto reply all its services. Sailmail and seamail also offer various weather packages.

Voyage forecasts (and weather watch/updates): When I'm available I can send you a weather forecast covering the next 5-days, by email or by fax (if sent by fax you get the weather maps). Forecast includes target pressures (my specialty). Cost is \$NZ50 per forecast + any communication expenses, and \$10 per 5 minutes for any extra weather updates. Let me know your Boat type and name and likely departure date, speed and destination (and credit card info) a few days before you intend to sail. You can split the credit card details over two emails or phone/fax to: Bob McDavitt, MetService Weather Ambassador, PO Box 68429, Newton, Auckland, New Zealand, mcdavitt@metservice.com Phone (+64 9) 377 4831 Fax (+64 9) 3075993

Voice forecasts on HF

WWVH in Hawaii

gives storm warnings for the entire Pacific at 48 minutes past each hour
on 5000, 10000 and 15000 kHz

Mahina Radio

forecasts for French Polynesia on 8803 kHz at 2100Z (also on VHF channels 26 and 27).
Warnings at 0640Z and 1800Z.

Suva Radio

forecasts for tropical SW Pacific on 4372.9 and 6746.8 kHz
at 0033, 0433, 0803, 1203, 2003Z

Taupo Maritime Radio (New Zealand)

forecasts for subtropical SW Pacific on 6224, 8297, 12356, 16531 kHz
at 0903 and 2103Z

Weather fax

Wellington Met office transmission schedule on 9459 kHz at 2315Z, 13550.5 kHz at 2330, 16340.1 kHz at 2345. Maps cover South Pacific from Australia to Tahiti. Details of all services on www.metservice.co.nz

NOAA's National Weather Service



Marine Forecasts



Search

Landlubber's
forecast:
"City, St" or zip code

Search by city or
zip code. Press
enter or select the
go button to submit
request

Go

City, St

NWS Home
Parent Office
Marine and Coastal
Weather Services
Branch

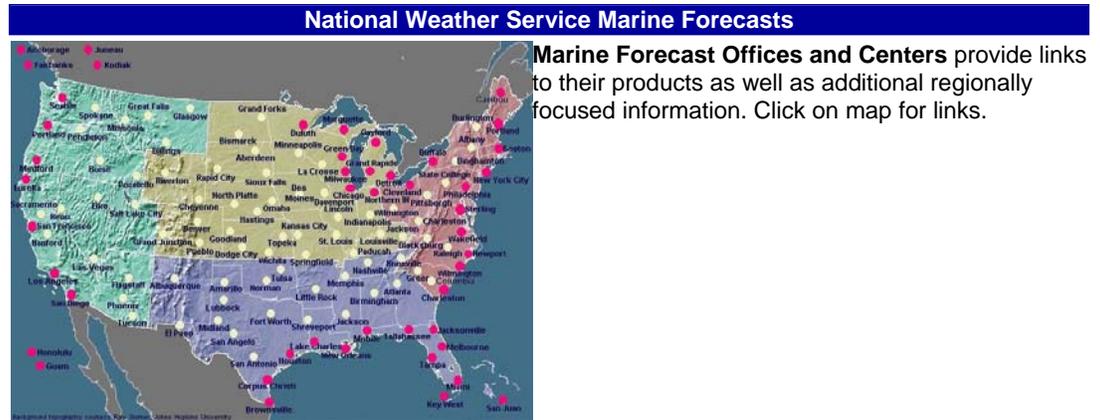
Items of Interest
Marine Forecasts

Observations
Dissemination
Publications

Links
FAQ
Contacts
Feedback

Vote

Be Prepared!



Marine Forecast Offices and Centers provide links to their products as well as additional regionally focused information. Click on map for links.

Items of Interest to Mariners

- Read about NWS involvement in "[The Perfect Storm](#)".
- [Recent and Upcoming Changes to Marine Forecasts and Services](#)
- [USCG seeks comments on proposed changes to NAVTEX broadcasts \(pg 51\)](#)
- [Marine Weather in the News, More, More, More, More, More](#)
- For copies of old forecasts, please see our [FAQ](#)
- We appreciate [feedback](#)

Marine Text Forecasts and Products

- [Marine Text Forecasts and Products Listing](#)
- [Most Popular Marine Text Forecasts \(low speed connection friendly\)](#)
- [Marine Text Forecasts by Zone - Text Interface \(now with NWR SAME codes\)](#) **new**
- [Coastal Marine Text Forecasts by Zone - Graphic Interface](#)
- [Offshore Marine Text Forecasts by Zone - Graphic Interface](#)
- [High Seas Marine Text Forecasts by Area - Graphic Interface](#)
- [Forecasts for NOAA Marine Sanctuaries](#)
- [More...](#)

Graphic Marine Forecasts and Products

- [Radiofax Charts](#)
- [Weather Charts](#)
- [U.S. Weather Maps](#)
- [Model Guidance from the Ocean Modeling Branch](#)
- [NDFD Graphical Forecasts \(Experimental\)](#) **new**
- [News - Gridded and Vector Data](#)
- [More...](#)

Observations

- [Buoy, C-MAN, Ship, and Drifting Buoy Observations](#)
- [PORTS®](#)
- [Coastal Water Temperature Guide](#)
- [Gulf Stream and Sea Surface Temperatures](#)
- [NEXRAD Doppler RADAR](#)
- [GOES Satellite Imagery and Products](#)
- [Ocean Surface Winds and Other Data Derived from Satellites](#) **new**
- [Tides and Water Levels \(some stations also have meteorological sensors\)](#)

WEATHER WEB SITES

And Other Useful Sources

Don Anderson N6HG

February 20, 2004

GRIB Files

Five-day forecasts: wind vectors

Send the following:

To: query@saildocs.com

grib:10N,35N,090W,160W|1,1|12,24,48,72,96,120,144,168,192|

or to receive files daily at about 1200Z send:

sub grib:10N,35N,090W,160W|1,1|12,24,48,72,96,120,144,168,192 days=30

Pacific Seafarers Net

<http://pacsea.net/index.html>

Tracking Cruising Yachts in the Pacific.

Daily at 0325Z on 14313.0 KHz

Posted to website (<http://www.bitwrangler.com/yotreps/>) each evening after roll call with positions, track, weather and chart.

Good source of on-site weather conditions.

High Seas Forecasts East Pacific. NWS Washington DC.

Equator to 60N East of 160W.

Excellent plain text forecast for the big picture out to 36 hours.

Text updated every 6 hours beginning 0500Z.

Available free to all vessels equipped with INMARSAT-C receivers.

[http://weather.noaa.gov/cgi-](http://weather.noaa.gov/cgi-bin/fmtbltn.pl?file=forecasts/marine/high_seas/north_pacific.txt&title=High+Seas+Forecasts%3CBR%3EEast+Pacific)

[bin/fmtbltn.pl?file=forecasts/marine/high_seas/north_pacific.txt&title=High+Seas+Forecasts%3CBR%3EEast+Pacific](http://weather.noaa.gov/cgi-bin/fmtbltn.pl?file=forecasts/marine/high_seas/north_pacific.txt&title=High+Seas+Forecasts%3CBR%3EEast+Pacific)

Fleet Numerical Meteorology and Oceanography Center (FNMOC)

US Navy, Monterey, California. (831) 656-4875

Most extensive global weather charts with prognoses out to 6 days.

Home Page: <https://www.fnmoc.navy.mil/public/wxmap/>

Best wind vector forecast for Baja outside and on down to Colombia including Gulf of Mexico. Not much detail for Sea of Cortez.

Click on “(COAMPS) Central America” for numerical model surface wind vector analysis and prognoses out to 48 hours in 6-hour increments.

Click on “Global Models (NOGAPS) and then on “Tropical EASTPAC” for surface streamlines out to 144 hours in 12-hour increments. Covers 40N to 30S and 080W to 160E. Good for best guess long range forecast for Baja outside, Gulf of Tehuantepec, windy areas of Central America such as Gulf of Papagayo and G of Panama.

Best big picture for routes to Hawaii and French Polynesia.

California Waters from 60 NM TO 250 NM Offshore.

Point Conception to Guadalupe Island.

Plain text for today, tonight and tomorrow.

Reliable for passages offshore Baja.

<http://weather.noaa.gov/cgi-bin/fmtbltn.pl?file=forecasts/marine/offshore/pz/pzz085.txt>

- **High Seas Forecast South Pacific** NWS Honolulu

Equator to 25S, between 120W and 160E

Excellent plain text forecast for the big picture out to 36 hours.

http://weather.noaa.gov/cgi-bin/fmtbltn.pl?file=forecasts/marine/high_seas/south_hawaii.txt

- **Eastern Pacific Wind/Seas Analysis.** Tropical Prediction Center/TAFB Miami FL.

34N to 20S between 075W and 140W

Updated every 12 hours. Good reliable wind vector data for long offshore passages:

Hawaii to Marquesas

Mexico to Hawaii

Mexico to Marquesas

Banderas Bay offshore to Panama and South to Galapagos.

Not very good for coastal conditions.

Poor and unreliable coverage for Sea of Cortez. Often 24 hours late for gale warnings in the Gulf of Tehuantepec.

Best source of wind data for Marquesas bound vessels equipped only with WEFAX. Available as WEFAX from USCG Station NMC, Point Reyes.

Frequencies, USB: 4344.1 8680.1 12728.1 17149.3

Times UTC: 1510 2419

<http://weather.noaa.gov/pub/fax/PJBA00.TIF>

<http://weather.noaa.gov/pub/fax/PJBA01.TIF>

- **24-Hour Wind/Wave Forecast**

Northeast Pacific, Alaska to Cabo San Lucas

Valid 0000Z.

<http://weather.noaa.gov/pub/fax/PWBE98.TIF>

Valid 1200Z.

<http://weather.noaa.gov/pub/fax/PWBE99.TIF>

48-Hour Wind/Wave Forecast.

Northeast Pacific, Alaska to Cabo San Lucas

Valid 0000Z.

<http://weather.noaa.gov/pub/fax/PJBI98.TIF>

Valid 1200Z.

<http://weather.noaa.gov/pub/fax/PJBI99.TIF>

Pacific Surface Analysis.

Isobars, wind vectors and fronts; northeast Pacific.

18N to 65N and 118W to 173W

Valid 0000Z.

<http://weather.noaa.gov/pub/fax/PYBA01.TIF>

Valid 0600Z.

<http://weather.noaa.gov/pub/fax/PYBA03.TIF>

Valid 1200Z.

<http://weather.noaa.gov/pub/fax/PYBA05.TIF>

Valid 1800Z.

<http://weather.noaa.gov/pub/fax/PYBA07.TIF>

24-Hour Surface Forecast.

Northeast Pacific, isobars and fronts. No wind vectors.

Valid 0000Z.

<http://weather.noaa.gov/pub/fax/PPBE00.TIF>

Valid 1200Z.

<http://weather.noaa.gov/pub/fax/PPBE01.TIF>

48-Hour Surface Analysis.

Isobars, wind vectors and fronts; entire north Pacific.

22N to 65N and 118W to 138E

Valid 0000Z.

<http://weather.noaa.gov/pub/fax/PWBI98.TIF>

Valid 1200Z.

<http://weather.noaa.gov/pub/fax/PWBI99.TIF>

96-Hour Surface Forecast.

Isobars, wind vectors and fronts; entire north Pacific.

22N to 65N and 118W to 138E

Valid 0000Z.

<http://weather.noaa.gov/pub/fax/PWBM99.TIF>

Naval Pacific Meteorological and Oceanographic Center/Joint Typhoon Warning Center.

USN Honolulu. Charts, Satellite Images and Text.

The best graphical predictions for tropical cyclones throughout the world.

Excellent charts and text out to 144 hours updated every 6 hours only when there is a significant cyclonic disturbance.

<http://www.npmoc.navy.mil/>

National Hurricane Center/Tropical Prediction Center

Located on the campus of Florida International University, Miami FL.

Tracks active and potentially active tropical systems.

Most up to date source of analyses and predictions in text form with satellite imagery.

Areas covered:

Atlantic Ocean, Caribbean Sea, Gulf of Mexico and Eastern Pacific out to 140°W.

<http://www.nhc.noaa.gov/index.html>

Central Pacific Hurricane Center

NWS, Honolulu, Hawaii.

Analysis and forecasts for all tropical cyclones in Central Pacific, 140W to the International Dateline.

<http://205.156.54.206/pr/hnl/cphc/pages/cphc.shtml>

University of Hawaii. Department of Meteorology

<http://lumahai.soest.hawaii.edu/cgi-bin/uhmetintro.cgi>

Educational and research site so intermittent, especially when the surf is up.

However, when their products are current, they are the best color-coded global GOES satellite infrared images available for the Pacific. Good views of the Pineapple Express.

When reliable they provide frequent updates, sometimes hourly.

GOES-10 Hawaii to U.S. Mainland.

<http://lumahai.soest.hawaii.edu/cgi-bin/satview.cgi?sat=g10&satregion=hus&channel=ui4&anim=no&size=large>

Especially useful for tracking the ITCZ west of 115W, fronts, thunderstorm activity (significant convection) and cyclonic storms (hurricanes etc.).

Click on “Sea Level Pressure and Wind Overlays” to see excellent surface analysis of N. Pacific high with wind vectors. Shows why one should think twice about taking “Clipper Route” from Mexican ports to Northern California.

GOES-10 Pacific West of 105W

<http://lumahai.soest.hawaii.edu/cgi-bin/satview.cgi?sat=gmsg10&satregion=pac&channel=mi8&anim=no&size=large>

Especially useful for tracking the secondary ITCZ south of the equator, west of 105W.

Also good for tracking tropical cyclones in western Pacific

INTELLICAST North Pacific High Resolution Satellite Image.

<http://www.intellicast.com/Local/USNationalWide.asp?loc=usa&seg=Sail&prodgrp=SatelliteImagery&product=PacificHIRES&prodnave=none&pid=none>

Infrared encoded Northeast Pacific image. Chamela Mexico to Alaska and out to 170W updated every 30 minutes.

Good but poor resolution in color encoding. However, it's very reliable.

National Meteorological Service of México City (SMN).

<http://smn.cna.gob.mx/productos/mm5/htm/pag7772.htm>

SMN in collaboration with Pennsylvania State University and National Center for Atmospheric Research, Boulder CO. Uses the Numerical Forecast MM5 model.

Wind vectors for entire west coast of Mexico, including Sea of Cortez and Gulf of Mexico out to 72 hrs. Updated daily at approximately 0430Z. Fairly good out to 48 hours, less so for 72 hrs.

Overall not as good as FNMOC wind vector prognoses.

<http://smn.cna.gob.mx/satelite/sat.html>

GOES-8 IR Satellite Image, color-coded. Complete coverage for US, Mexico to Ecuador and the Caribbean. Updated every 30 minutes.

Click on “Loop” to view excellent animation of cloud movement for recent 3-hour period.

Useful for estimating rate of movement or dissipation of Pineapple Express and other cloud formations across entire area. By observing the turbulence in the center of high altitude low temperature cloud formations one can assess the degree of convection and hence the strength of TSTM intensity.

Also black and white image of Mexico only, with Gulf of Mexico. Good for Baja Peninsular, Sea of Cortez down to Gulf of Tehuantepec. Updated every three hours.

Eastern East Pacific GOES-8 Satellite Infrared Image, Ch. 4

NOAA color-coded image updated hourly.

Good for tracking cyclonic disturbances and TSTM's Baja to Panama.

Good images of Pineapple Express when it is crossing the Baja or Mainland Mexico.

30N to Equator, 080W to 110W and Baja-Sea of Cortez.

<http://www.ssd.noaa.gov/PS/TROP/EPACIR4.html>

East Central Pacific GOES-10 Satellite Image

NOAA color-coded image updated hourly.

Good for Pt. Conception to Cabo San Lucas, including Sea of Cortez.

Also useful for tracking fronts, storms, tropical disturbances and the Pineapple Express.

Equator to 36N, 110W to 160W.

<http://www.ssd.noaa.gov/PS/TROP/CPACIR4.html>

U of Wisconsin, East Pacific color coded GOES-10 Satellite image.

Beautiful color images updated every two to four hours. Another educational and research institution and hence occasional outages. Moderately reliable.

<http://cimss.ssec.wisc.edu/tropic/real-time/eastpac/images/xxirg9n.GIF>

National Pacific Meteorology and Oceanography Center, San Diego (USN)

<http://www.npmoc-sd.navy.mil/>

San Diego Local Weather

Eastern Pacific and Central America

Links to other USN sites. Many other products available from this page.

National Center for Atmospheric Research, Boulder Colorado.

NCAR Index Page for Real-Time Weather

<http://www.rap.ucar.edu/weather/>

NCAR Surface Analysis, US to 20N

Only a fair indicator of present conditions for high wind areas such as Cerralvo Channel, Cabo Corrientes and the outside of the Baja. Frequently in error compared to on-site reports.

http://www.rap.ucar.edu/weather/surface/us_mslp.gif

NCAR 12hr Surface Winds, US to 20N

Fairly good prognosis chart, unfortunately only goes out to 12 hours and cuts off at Cabo Corrientes.

http://www.rap.ucar.edu/weather/model/ruc12hr_sfc_mslp.gif

NCAR Surface Winds, US to 20N

Five frames, Analysis, 03, 06, 09, and 12-hour forecasts.

http://www.rap.ucar.edu/weather/model/displayMod.php?var=ruc_sfc_mslp&hours=hr00hr01hr02hr03hr06hr09hr12

National Research Laboratory (NRL), Monterey (USN).

http://www.nrlmry.navy.mil/sat_products.html

Spectacular satellite images for Atlantic and Pacific Oceans. Updated frequently.

Marine Observing Systems Team.

High resolution ocean surface winds derived from the SeaWinds Scatterometer.

Processed by NOAA/NESDIS from near real-time data from NASA/JPL's SeaWinds Scatterometer aboard the QuikSCAT polar orbiting satellite.

Global wind vectors. Updated frequently, sometimes hourly.

Excellent for Gulf of Tehuantepec and Central America.

Click on chart area of interest for spectacular fine grid wind vector resolution.

By far the best source of reliable accurate data for checking validity of analyses and prognoses for ocean wind vectors from numerical models, 080N to 080S.

When the Multidimensional Histogram (MUDH) rain flag is being used, the black vectors are a good indication of the location and degree of severity of the ITCZ.

<http://manati.wwb.noaa.gov/quikscat/>

NOAA National Data Buoy Center

Hourly weather from coastal and offshore weather buoys and coast stations.

Excellent for verifying forecasts.

Northwest USA and Canada

<http://www.ndbc.noaa.gov/Maps/Northwest.shtml>

Southwest USA

<http://www.ndbc.noaa.gov/Maps/Southwest.shtml>

Hawaiian Islands

<http://www.ndbc.noaa.gov/Maps/Hawaii.shtml>

Oceanweather Inc.

<http://www.oceanweather.com/>

Marine forecasts/hindcasts Research at the air-sea interface.

Wind vectors from on-site reports from ships, weather buoys and coast stations.

Global coverage updated every 6 hours. Excellent reliable data except that occasionally a ship's report will be a significant error (e.g. N at 60 kts when isobaric charts would suggest S at 6 kts). Therefore need to check against your own wind estimate from isobaric spacing and direction (4 MB spacing in degrees of latitude divided into 50).

Good data for checking validity of analyses and prognoses from numerical models.

Click on bottom right corner to select a region from a world chart.

Northeast Pacific, Equator-62N, 090W-170E

<http://www.oceanweather.com/data/NPAC-Eastern/marineM00.gif>

Northwest US Coastal, 40-52N, 116-140W

<http://www.oceanweather.com/data/NW-US/marineM00.gif>

Southwest US Coastal, 30-42N, 116-134W

<http://www.oceanweather.com/data/SW-US/marineM00.gif>

South Pacific, Equator to 70S, 065W-160E

<http://www.oceanweather.com/data/South-Pacific/marineM00.gif>

South Atlantic, Equator to 70S, 040E-090W

<http://www.oceanweather.com/data/South-Atlantic/marineM00.gif>

Land-based Meteorological Stations.

These stations provide a good check on prognoses. They allow one to assess the diurnal thermal effects on coastal conditions. Often winds are much stronger and sometimes 180 degrees different from what one sees on marine weather charts. This is because the charts tend to average wind vectors over 12 or 24-hour periods over areas as great as 100,000 square miles

(blocks of 5 degrees of latitude on a side). Check the following NWS website for worldwide list of stations. <http://www.nws.noaa.gov/tg/siteloc.shtml>

Mexico, Hourly Reports

Mexicali 32-38N 117-00W 22m
<http://weather.noaa.gov/weather/current/MMML.html>

Loreto 26-01N 111-21W 15m
Fairly good read on Southern Sea of Cortez on Baja side.
<http://weather.noaa.gov/weather/current/MMLT.html>

Guaymas 27-58N 110-56W 27m
Fairly good read on Central Sea of Cortez on mainland side.
<http://weather.noaa.gov/weather/current/MMGM.html>

Los Mochis 25-41N 109-05W 4m
Fairly good read on Southern Sea of Cortez on Mainland side.
<http://weather.noaa.gov/weather/current/MMLM.html>

La Paz 24-04N 110-22W
Fairly good read on winds in La Paz area.
<http://weather.noaa.gov/weather/current/MMLP.html>

San Jose Del Cabo 23-09N 109-42W
Use with caution. When wind speeds are high, they are usually high offshore. However the wind direction rarely agrees with that across the water.
<http://weather.noaa.gov/weather/current/MMSD.html>

Mazatlan 23-10N 106-16W
Winds tend to be much less than offshore, unless from the westerly quadrant when they seem to be a reliable indicator of coastwise conditions, especially afternoons.
<http://weather.noaa.gov/weather/current/MMMZ.html>

Puerto Vallarta 20-41N 105-15W
Rarely a good indicator of winds in Banderas Bay, especially La Cruz and Punta de Mita where afternoon winds are often strong from the west.
<http://weather.noaa.gov/weather/current/MMPR.html>

Manzanillo 19-09N 103-34W
Very reliable indicator of coastal daytime and early evening conditions in that area, especially the afternoon southwesterlies.
<http://weather.noaa.gov/weather/current/MMZO.html>

Ixtapa-Zihuatanejo 17-36N 101-28W
Very reliable indicator of coastal daytime and early evening conditions in that area, especially the afternoon southwesterlies.

During winter months, marine forecasts usually show light and variable winds 10 kts or less from Chamela to Puerto Huatulco. However, for this stretch of the mainland, land-based reports as well as those from anchored vessels, show light to calm winds night and early morning, and occasionally 10 to 15 kts off the land. By noon winds veer to the S to SW 5 to 10 kts, and by mid afternoon are frequently SW to WSW 10 to 15 kts, occasionally 20 to 25 kts.

<http://weather.noaa.gov/weather/current/MMZH.html>

Acapulco 16-46N 099-45W

<http://weather.noaa.gov/weather/current/MMAA.html>

A light wind area, especially during the winter months. Not a good indicator of winds 50 to 100 NM offshore. Reliable for afternoon southwesterly wind reports.

Puerto Escondido 15-52N 97-05W 88m

<http://weather.noaa.gov/weather/current/MMPS.html>

Good indicator of on coastal winds between Acapulco and Bahias de Huatulco.

Bahias De Huatulco 15-47N 096-16W

<http://weather.noaa.gov/weather/current/MMBT.html>

Located on the west end of the Gulf of Tehuantepec, but not a good indicator of conditions in the Gulf. Winds are usually from the southern semicircle less than 15 knots. Even when there are gale or storm conditions in the Tehuantepec.

Minatitlan 18-06N 094-35W

<http://weather.noaa.gov/weather/current/MMMT.html>

Located on the Bahia de Campeche on Atlantic side of the Tehuantepec.

A good indication of conditions in the Gulf of Tehuantepec.

If it's blowing 15+ from the northerly quadrant, then it's probably blowing a gale in the Tehuantepec. When it's blowing from the other quadrants, it's usually light and variable in the Tehuantepec.

(By far the best 2- and 5-day forecasts for the Gulf of Tehuantepec may be found in the USN FNMOC COAMPS and NOGAPS Tropical East Pacific Surface Streamlines and Wind Speeds graphics at <file:///localhost/PUBLIC>

Meteorological Stations, Central America, Hourly Reports

San Jose, Guatemala 13-55N 090-49W 2m

Fair indication of conditions in Puerto Quetzal.

<http://weather.noaa.gov/weather/current/MGSJ.html>

Compala, El Salvador 13-26N 089-03W 25m

Fair indicator of conditions at Marina Barillas.

<http://weather.noaa.gov/weather/current/MSLP.html>

Chinandega, Nicaragua 12-38N 087-08W 60m

Good read on wind direction but coastal winds often stronger than reported.

<http://weather.noaa.gov/weather/current/MNCH.html>

Bluefields, Nicaragua 12-00N 086-46W 5m

Useless indicator of winds on the Pacific side.

<http://weather.noaa.gov/weather/current/MNBL.html>

Liberia, Costa Rica 10-37N 085-26W 80m

The best read on Gulf of Papagayo winds, but often coastal winds are stronger by as much as 15 kts with much stronger gusts.

<http://weather.noaa.gov/weather/current/MRLB.html>

Chacarita, Costa Rica 09-59N 084-47W 2m

Only 5 miles east of Puntarenas. Good reliable reports.

<http://weather.noaa.gov/weather/current/MRCH.html>

Tobias Bolanos International, Cost Rica 09-57N 084-09W 994m

Located 100 miles ESE of Gulf of Papagayo and 36 miles N of Punta Quepos.

A fairly good indicator of winds along the coast, especially if strong from E to NE.

<http://weather.noaa.gov/weather/current/MRPV.html>

Santiago, Panama 8-05N 080-57W 88m

Located on peninsular at west side of Gulf of Panama. Best indicator of the strong winds prevalent off Punta Mala. Daytime winds usually 5 to 10 kts greater than marine forecasts.

Night and early morning winds usually calm or much less than marine forecasts.

<http://weather.noaa.gov/weather/current/MPSA.html>

Marcos A. Gelabert, Panama 08-59N 079-31W

Good indicator of Canal Zone weather

<http://weather.noaa.gov/weather/current/MPMG.html>

Tocumen, Panama 09-03N 79-22W 45m

<http://weather.noaa.gov/weather/current/MPTO.html>

Good indicator of Canal Zone weather

NWS CHARTS

Also broadcast as WEFAX charts by USCG stations.

Mexico Weather. USA Today. Chart

Moderately useful for showing thunderstorm areas but otherwise of no marine value.

<http://www.usatoday.com/weather/basemaps/wmxp1.htm>

Mexico Weather. USA Today. Selected Cities.

Designed for tourists. 4-day forecasts for wind, cloud cover and precipitation. Rarely accurate except during really bad weather.

<http://www.usatoday.com/weather/basemaps/wmxt1.htm>

High Seas Forecast, Offshore Peru NWS Washington DC.

S Pacific from the Equator to 18.5S E of 120W.

Galapagos and offshore Ecuador and Peru.

Plain text forecast out to 36 hours, updated every 6 hours beginning 0515Z.

Available free to all vessels equipped with INMARSAT-C receivers.

http://weather.noaa.gov/cgi-bin/fmtbltn.pl?file=forecasts/marine/high_seas/east_pacific_3.txt

Coastal and Offshore Forecast, Chile

Armada de Chile, Valparaiso Playa Ancha Radio CBV.

Coast of Chile to Antarctica and out to 130W.

Plain text forecast out to 36 hours, updated every 12 hours. In Spanish and English.

Available free to all vessels equipped with INMARSAT-C receivers.

Information available from cbvradio@directemar.cl

Twice daily position reports to mrcchile@directemar.cl

Global 5-Day Marine Forecasts

<http://www.buoyweather.com/>

Interesting virtual buoy data based on numerical models.

Armada de Chile

<http://www.directemar.cl/>

Copies of daily Analysis and Prognosis WEFAX charts.

Go to Servicios, Servicio de Comunicaciones Marítimos, Meteorología, Mapa Sinóptico.

Only source of such information for entire coast of Chile.

Dundee Satellite Receiving Station

Spectacular black and white geostationary satellite images of whole globe.

<http://www.sat.dundee.ac.uk/auth.html>

USCG HF VOICE BROADCASTS

Perfect Paul synthesized voice weather forecasts

<http://www.nws.noaa.gov/om/marine/hfvoice.htm>

WEFAX RECEPTION

Currently the simplest system for laptop/PC's is JVComm32.

All one needs is an HF receiver, the software and a laptop/PC equipped with a sound card. No external demodulator is necessary. The quality of the images is excellent. The software may be downloaded from the website of Eberhard Backeshoff, DK8JV.

<http://www.jvcomm.de/>

List of Worldwide HF Weatherfax Stations

Worldwide Marine Radio Facsimile Broadcast Schedules

List of stations, products, frequencies and schedules compiled by NOAA/NWS

Acrobat PDF file. <http://www.nws.noaa.gov/om/marine/rfax.pdf>

New Zealand

ZKLF Radio Facsimile Schedule

Schedule of HF WEFAX transmissions.

http://www.metservice.co.nz/services/radiofax_schedule.pdf

INMARSAT-C

NWS, Peru, Chile, Fiji, New Zealand and Australia Meteorological Offices broadcast free marine analyses and forecasts in English text form to vessels equipped with INMARSAT-C transceivers. Excellent information for entire Pacific, updated every six hours by some offices. See: Trimble Product Guide: Galaxy Inmarsat-C/GPS Marine, for transceiver system details at:

<http://www.trimble.com/galaxymarine.html>

HF E-mail, WinLink and SailMail

The latest in low cost e-mail for offshore cruisers worldwide.

<http://www.sailmail.com/>

<http://winlink.org/>

Necessary to receive GRIP files. Software is free.

NOAA Polar Orbiting Weather Satellites

Presently the ultimate for real-time visible and color-coded infrared images.

Excellent images of fronts, storms and tropical cyclones. Images allow one to pinpoint severe convection cells.

Each satellite provides at least two passes per day and covers an area of about 1000 miles wide by 3000 miles N to S depending on altitude at time of transit over the receiver's location.

Requires a satellite receiver, gain antenna, decoder PC card and software.

Presently NOAA 12, 15 and 17 are operational

For current status of these satellites, see:

<http://noaasis.noaa.gov/NOAASIS/ml/status.html>

See: OCENS, SeaStation Mariner, Satellite Weather, for receiver system details.

<http://www.ocens.com/>

LONG RANGE FORECASTS

El Niño/Southern Oscillation (ENSO) Diagnostic Discussion

NOAA/NWS Climate Prediction Center

Camp Springs, MD

Updated around the middle of each month.

http://www.cpc.ncep.noaa.gov/products/analysis_monitoring/enso_advisory/

The Tropical Meteorology Project

Atlantic hurricane prediction team headed by Professor William M. Gray

Department of Atmospheric Science Colorado State University

<http://tropical.atmos.colostate.edu/forecasts/>

TOOLS

Visual Passage Planner. Software by Digital Wave, 2002.

Presently the best tool for planning optimum tracks for long ocean passages.
User friendly for documenting and printing long passages.

Robert Gehrsitz
P.O. Box 326, Fort Monmouth, NJ 07703
(215) 493-7483 or (877) 783-8591
<http://www.digwave.com/index.html>
support@digwave.com
info@digwave.com
sales@digwave.com

Virtual Passage. Software by Virtual Passages, 2000.
More of a game than a tool, but interesting from the standpoint of learning what passage making is all about.
Virtual Passages
Richard T. McNider

P.O. Box 13024
Huntsville, AL 35803, (246) 882-9517 FAX 882-9517
<http://www.virtualsail.com/>
info@virtualsail.com

HISTORICAL RECORDS

National Hurricane Center/Tropical Prediction Center

Archives of Past Hurricane Seasons

<http://www.nhc.noaa.gov/pastall.html>

The National Hurricane Center's Tropical Cyclone Reports (formerly called Preliminary Reports) contain comprehensive information on each storm, including synoptic history, meteorological statistics, casualties and damages, and the post-analysis best track (six-hourly positions and intensities).

REFERENCE WORKS and TUTORIALS

Fundamentals of Physical Geography

<http://www.geog.ouc.bc.ca/physgeog/home.html>

Excellent glossary of meteorological terms.

Hurricanes, Typhoons, and Tropical Cyclones

by [Christopher W. Landsea](#), NOAA / [AOML](#), 4301 Rickenbacker Causeway
Miami, Florida 33149, chris.landsea@noaa.gov

<http://www.aoml.noaa.gov/hrd/tcfaq/tcfaqHED.html>

The Atlantic Oceanographic and Meteorological Laboratory (AOML) is one of the Oceanic and Atmospheric Research (OAR) Facilities of the National Oceanic and Atmospheric

Administration (NOAA). NOAA/AOML is a part of the US Department of Commerce (DOC) and is located in Miami, Florida. AOML's mission is to conduct basic and applied research in oceanography, tropical meteorology, atmospheric and oceanic chemistry, and acoustics. The research seeks to understand the physical characteristics and processes of the ocean and the atmosphere, both separately and as a coupled system.

TROPICAL WAVES

Tropical Waves by Michel Davison

Michel.Davison@noaa.gov

<http://www.hpc.ncep.noaa.gov/international/training/tropicalwaves.old/>

Home Page: <http://www.hpc.ncep.noaa.gov/international/intl2.html>

Excellent 29-frame Microsoft PowerPoint Presentation that may be downloaded.

Lin & Larry Pardey on Sailing in Reinforced Trades

As we were out sailing this weekend on our little racing yacht Thelma, we began discussing your letter. Seems there are some things we would consider before going on a passage such as this. In fact we had a long enough list to consider writing an article on the subject. For those going on beyond Australia, these conditions will definitely be met in the Indian Ocean between Cocos Keeling and Madagascar. We had an amazing run across that patch of water with winds rarely below 28, never above 35 and averaged 168 miles a day for 2900 miles - best days run, 192, best week, 175. But it definitely was wet on deck and keeping from getting the interior wet from our dripping foulies took some doing.

If we do the article in time I will pass on the rough draft. But just to start the ball rolling.

1. If we were delivering a boat like the ones you are describing, a 40 to 45 foot fine and skeg with roller furling headsails and a foil over the head stay, we would consider the following - as the head stay will be flopping around a lot and thus can suffer from metal fatigue (work hardening), if the wire and its fittings are less than five year old, inspect them extra carefully. If they are five to seven years old, consider replacing them. If they are seven to ten years old replace them before setting sail.

To stop the leeward shrouds from working lash shock cord around the shrouds and tension it.

2. Be sure there are ways to shorten your sails without heading into the wind, especially your mainsail. In these conditions you will need the mainsail up, but reefed. Reason, to steady out the boat and give a more comfortable ride. It pays to tighten in the sail when you are running downwind. We put the jib on a pole, then put one or two reefs in the mainsail and sheet the mainsail as for a beam reach to cut down rolling. Feels real good.

3. Consider using your storm trysail in winds above 30 if you can't reef your mainsail downwind. I.e. if you have full length battens

4. Be sure your rudder has proper rudder stops. (If anyone in your group does not have good strong rudder stops we can send the drawings from the chapter

in our new edition of Storm tactics handbook called, how to avoid rudder problems- the book won't be out for another six weeks but I have e files.)

5. Check out your steering gear - the chain, the turning blocks etc. It will work hard.

6. Have a few extra easy to prepare meals lined up. You'll find that after a few days, you will get used to the motion and be more interested in being in the galley.

7. Once we set sail, we stop listening to weather reports, weather gurus and just check in every day to WWV on 15000 shortwave (the time tick station) at 10 minutes after the hour to be sure there are no storms approaching your area. We then spend the time we save by being away from radios by checking the rig for chafe, getting lots of rest, reading some good books.

8. Buy a cheap but very lightweight set of foul weather gear - normal gear is too hot in the tropics and takes too long to dry off. This way you will be more willing to go out on deck and right to the forestay once on each watch to check for chafe, and potential gear problems.

8. Look forward to fast passages that could be the highlight of your sailing time.

Our experience with reinforced trades (we've enjoyed them several times, on our boats and during deliveries) is that they can blow consistently for two or three weeks at a time, but if you slow the boat down to a sedate six or seven knots, you will find most of your concerns are covered. We have sailed on double enders, wide transomed long keelers, fin and skeg types in these conditions and found steering and tracking depended on the individual boat, not a general configuration.

If anyone in your group has our DVD, storm tactics take a look at the last section for a discussion of what we mean about keeping the shrouds from work hardening. Also, our DVD Get Ready to Cross Oceans, has a section on the reinforced trade winds we encountered in the Indian Ocean, and might have an idea or two for your group.

USEFUL BOOKS

OCEAN PASSAGES FOR THE WORLD, Publication NP 136, Fourth Edition, Hydrographic Department, Ministry of Defense, Taunton, Somerset, England. Available from Agents for the Sale of Admiralty Charts. The classic authority since 1895.

WORLD CRUISING ROUTES, Third Edition, by Jimmy Cornell, 1995. International Marine, McGraw Hill, P.O.Box 547, Blacklick, OH 43004. 1-800-822-8158.

THE ATLANTIC CROSSING GUIDE, Third Edition, 1992, by Anne Hammick, Royal Cruising Club Pilotage Foundation. International Marine, P.O. Box 220, Camden, ME 04843.

Weather for the Mariner, Third Edition, 1983 by William J. Kotsch, Rear Admiral, U.S. Navy (Retired). Naval Institute Press, Annapolis, Maryland 21402. 1983.

MARINER'S WEATHER HANDBOOK, A Guide To Forecasting & Tactics, by Steve & Linda Dashew. Boewulf, Inc., 6140 East Finisterra Drive, Tucson, Arizona 85750, 1999.

HURRICANE WATCH, FORECASTING THE DEADLIEST STORMS ON EARTH by Dr. Bob Sheets and Jack Williams, Vintage Books, a Division of Random House, Inc., New York, September 2001.

Wind and Sailing Boats, The structure and behavior of the wind as it affects sailing craft, 1965 by Alan Watts, F.R.Met.S., Adlard Coles Limited, 36 Soho Square, London W1.

THE PROGRESS OF THE DEVELOPMENT OF THE LAW OF STORMS, AND OF THE VARIABLE WINDS, WITH THE APPLICATION OF THE SUBJECT TO NAVIGATION, by Lieut.-Colonel William Reid, C.B., F.R.S. (Of the Corps of Royal Engineers). John Weale, Publishers, London 1849.

USN Naval Meteorology and Oceanography Command Handbooks

<file://localhost/nmosw/handbk.htm>

Tropical Cyclone Forecasters' Reference Guide

Naval Research Laboratory, Monterey Marine Meteorology Division

<http://www.nrlmry.navy.mil/~chu/>

<file://localhost/PSAPG.htm>

Typhoon Havens Handbook for the Western Pacific and Indian Oceans

Sam Brand, Editor; Naval Research Laboratory, Monterey, CA

Meteorological Applications Development Branch; Marine Meteorology Division

October 1996; last Modified June 2001; actually addresses entire Pacific area.

Specific recommendations for Mazatlan and Puerto Vallarta

file://localhost/nmosw/thh_nc/Ostart.htm

PUGET SOUND AREA HEAVY WEATHER PORT GUIDE

Naval Research Laboratory, Monterey, CA 93943-5502

<file://localhost/PSAPG/PSAPG.htm>

National Weather Service Forecast Office - Norman, Oklahoma
Mostly US weather. Has good glossary and educational sections.

<http://www.srh.noaa.gov/oun/index.shtml>

THE EL NIÑO/LA NIÑA CYCLE: A TUTORIAL

Provided by NWS Climate Prediction Center

http://www.cpc.ncep.noaa.gov/products/analysis_monitoring/ensocycle/enso_cycle.html

Antarctic Weather

Rice University, a tutorial.

http://www.glacier.rice.edu/weather/3_introduction.html

Mountain Meteorology: Fundamentals and Applications

C. David Whiteman, Oxford University Press, New York, approx. 250pp. 1999

Atmospheric scientist at Battelle Pacific Northwest Labs, Richland, WA.

Center for Ocean-Atmospheric Prediction Studies Library

Florida State University; Tallahassee, FL 32306-2840

Homepage: <http://www.coaps.fsu.edu/lib> ;(850) 644-6931 / (850) 644-4841 (fax)

Weather Glossaries

http://www.cagenterprises.com/wx_glossary_a.html

<http://www.weather.com/glossary/>

<http://www.geog.ubc.ca/courses/g102/Resources/G102Glossary.html>

NOTES

For most of the charts from various meteorological offices around the world, wind speeds are averaged over 10 minute periods. Gusts may be up to 40% stronger than average speeds. Wave and swell heights refer to significant wave heights representing the average of the highest one third of waves. The likely maximum wave height can be up to twice the significant wave height.

Winds down canyons and off promontories and headlands often blow as much as twice the speeds forecast for the area.

Areas that are between two or more significantly different weather patterns can have dangerous mountainous confused seas that are not shown on the charts.

WEFAX

In order to determine optimum propagation times for HF WEFAX broadcasts use one of the readily available propagation software packages.

My favorite is available at http://elbert.its.bldrdoc.gov/pc_hf/hfwin32.html

New Zealand Weather & Routing 2/07

The MetService Mariners Met Pack is a book I have compiled to help introduce sailors to the weather patterns of the Southwest Pacific

Two ways to get the MetService Mariners Met Pack(South West Pacific) (also known as the Yacht Pack) 1. Order thru Boatbooks (Auckland, New Zealand) <http://boatbooks.co.nz/weather.html> 2. Order direct thru myself. Send me via reply email your VISA or Mastercard details and mailing address and I shall airmail you the latest edition for \$NZ 29.95 plus postage (about \$NZ 13 to USA and \$NZ16 to Mexico).

Bob McDavitt MetService Weather Ambassador
mcdavitt@metservice.com Phone (649) 377 4831 Fax (649) 307 5993

Weather Advice from Chris Bone of Pacific Yacht Deliveries, New Zealand -
<http://www.pacificyachtdeliveries.co.nz>

Thanks to Bob McDavitt for helping me gain the knowledge to allow me to compile this page.

This page is intended to offer you some advice and links to useful websites to assist with you passages in the SW Pacific. I am sharing what I have learnt about the area from my time here as a yacht delivery skipper. I am NOT a weather forecaster, nor have I had much training, apart from courses I have attended as part of my various skipper's tickets. I am just sharing how I look for weather information, what suits how I work. My policy is always to avoid storms if I can possibly manage to. My reputation as a delivery skipper relies on me getting boats to their destinations in the best possible condition so I take great care to get the best weather reports that I can.

General discussion.

I have found that in general the weather forecasts in the area are quite good but there can be discrepancies between the 2 main computer models I.E. WW3 from NOAA and the European ECMWF model. There are very good charts available based on the WW3 model, which include wind directions and speeds so it's an easy model to use. I therefore tend to plan my passages on the WW3 model but I ALWAYS check the ECMWF model as well as it often picks up systems that WW3 has missed (2 cyclones in 2006!). When amongst the SW Pacific Islands I also look at the Fiji Met Office forecasts and I also use the 3-day New Zealand Met Office forecasts, which are very good. If in doubt I contact Bob McDavitt from the New Zealand Met Office and discuss the situation with him before departing.

Seasonal.

My initial passage plans are made using [Visual Passage Planner](#). This is a digital version of all the data in Ocean Passages of the World. VPP gives me an idea of the overall feasibility of a passage and probable best course. I then use chart-plotting software to make a passage plan for quoting my deliveries.

Long range (>10 days).

There are 2 main indications of long-range prospects.

1. Is it an El Nino or a La Nina year?

General El Nino discussion websites are; [El Nino description](#), [El Nino discussion](#), [NOAA-PMEL-TAO - What is an El Niño \(ENSO\)](#) and [Tropical Atmosphere Ocean \(TAO\) Project Home Page](#)

An El Nino forecast is available here; [El Nino Forecast](#) and sea temperature charts are available [here](#) (central Pacific), [here](#) (SW Pacific) and [here](#) (SW Pacific)

2. What is the Madden Julian Oscillation (MJO) doing? I use the MJO in conjunction with Sea Surface temperature mainly during shoulder seasons to determine how bad the hurricane risk might be.

General Madden Julian information websites are [CDC Experimental MJO Forecasts](#) and [The Madden-Julian oscillation](#)

A 2 week MJO forecast is available [here](#) and [here](#)

Medium range (3-10 days).

We are spoilt for choice! The main websites I use are;

Weatheronline. [Marine Weather Oceania](#) 8 day forecasts including wind strength and direction from the ECMWF model (I think). A bit frustrating as some areas are completely missed!

Metvuw. [Metvuw](#) This is the site I go to first for deliveries in the SW Pacific as it's nicely organised and includes rain, wind strength and direction on the detailed charts. WW3 model.

Stormsurf has a nice animation for 7 days [Stormsurf 7 day wind](#) WW3

The ECMWF site that I use to compare with the WW3 model is [EC model MSL baro + 850 hpa winds](#) Note that the 850hPa winds are at around 5000 feet or 1500m up.

Bob McDavitt's weekly discussion forecasts are very useful and are available by subscription form [Pangolin](#) where one can also subscribe to the useful Fiji Fleet GRIBS

Passage plans.

If I want a full passage plan I obtain one from [Bob McDavitt](#). Bob uses Expedition software. Expedition has been developed for racing, not cruising so it is important to give Bob the maximum wind strength (according to direction) that I am happy with.

Barometer notes.

I use the digital barometer on my hand held chart plotter or watch. Every trip I check the reading for accuracy before I depart. I want to watch trends but also know where I am in a system so a calibrated barometer is essential.

Reading Weather Fax Charts

From the Marine Prediction Center's Radiofax Users Guide

Surface Analyses Surface analyses are generated four times per day, at 0000Z, 0600Z, 1200Z, and 1800Z (Zulu, UTC, or Greenwich Mean Time) for each ocean. Analyses consist of isobaric pressure observations at four-millibar (mb) contour interval spacing, labeled every eight mb. Central pressure mb values of low and high-pressure systems are depicted in bold three or four digits, underlined, and placed adjacent to or under the "H" or "L." Surface analyses also consist of abbreviated, automated ship plots of wind direction (eight points on the compass rose), wind speed in knots, present reported weather, and cloud coverage. The product is issued in two parts, which overlap by some 10 degrees of longitude (between 165W and 175W in the Pacific Ocean, and between 50W and 60W in the Atlantic Ocean). Both parts will project the low or high-pressure systems' forecast position with an arrow to the 24-hour position. These will be labeled with an "X" for lows and a circle with an "X" in the middle for highs, with a bold two-digit mb central pressure value underlined under or adjacent to the 24-hour position label (e.g., 1050-mb high would be written as a 50 and a 960-mb low would have 60). Significant weather systems have labels depicting whether the system has gale or storm conditions as noted by ship and buoy observations, Special Sensor Microwave Imagery (SSM/I), satellite, or computer model guidance. If 24-hour forecast gale or storm conditions are expected, the appropriate area has the label "developing gale" or "developing storm." Used in conjunction with a 500-mb analysis, a 24-hour forecast position of synoptic scale weather systems will aid in determining a weather system's motion and intensity trends.

The hand-drawn surface analyses depict isobars, surface winds, frontal systems (occluded, stationary, cold, and warm), low and high-pressure center positions, and central pressure. The 24-hour track history and 24-hour forecast position of each synoptic scale system's position and central pressure are displayed on all 48-hour surface forecasts. Systems having or expected to have synoptic scale gale or storm conditions are labeled in bold capital letters. Similarly, systems expected to develop gale or storm conditions in 24 hours have labels of developing gale or developing storm. Surface low-pressure falls of 24 mb or greater during a 24-hour period are denoted in large capital letters as RAPIDLY INTENSIFYING. For tropical cyclones, the alphanumeric description of the analyses or forecast time are displayed in bold capital letters adjacent to the tropical cyclone's position with the appropriate cyclone symbol in the following manner:

Standard abbreviations:

INTSFY - INTENSIFY
Q-STNRY - QUASI-STNRY

DSIPT - DISSIPATE
STNRY - STATIONARY
WKNG - WEAKENING
RPDLY - RAPIDLY
FRMG - FORMING
MOVG - MOVING
INLD - INLAND
DVLPG - DEVELOPING
COMB - COMBINED
DCRS - DECREASE
INCRS - INCREASE

TYPHOON or HURRICANE or TROPICAL STORM "NAME"

LATITUDE ___ LONGITUDE ___

MAX WINDS ___ KT G (GUST) ___KT

MOV DIR ___ (DEGREES) ___KT

24-Hour Surface Forecast Surface forecast charts feature low and high-pressure center positions with bold three and four-digit central pressure values underlined under or adjacent to the L or H. An arrow displays direction of movement, with the system's speed shown in knots depicted adjacent to the head of the arrow. Significant systems have labels denoting whether the system is expected to have GALE or STORM conditions. If 24-hour forecast gale or storm conditions are expected, the appropriate area has the label DEVELOPING GALE or DEVELOPING STORM. Also displayed on this surface forecast chart are frontal systems (occluded, warm, and cold) and when appropriate, associated areas of fog, signifying areas of potentially restricted to visibility. Isobars are depicted in increments of four mb, except for deep systems which are depicted in eight-mb increments. The 1000-mb contour will be dashed to separate four-mb from eight-mb contour spacing.

48-Hour Surface Forecasts These surface forecast products are generated twice each day at 0000Z and 1200Z for each ocean. Products show surface isobars every four mb with labeling of two digits in increments of eight mb. Central pressure millibar values of synoptic scale lows and highs in bold three or four digits are underlined adjacent to or under the L or H. The 24-hour forecast position and future 72-hour forecast position of lows and highs have vector arrows with an X for low centers and a circle with an X inside by the head for high centers. An underlined bold two-digit mb central pressure value will be placed under or adjacent to the 24/72-hour position label (e.g., 1050-mb high would be written as a 50 and a 960-mb low would have 60). The 48-hour surface forecast depicts wind speeds in knots (wind barbs in increments of five or 10 knots), and frontal systems (occluded, warm, and cold). Significant systems have labels depicting whether the system is expected to have gale or storm conditions. If 72-hour forecast gale or storm conditions are expected, the appropriate area has the label DEVELOPING GALE or DEVELOPING STORM.

24-Hour Wind/Wave Forecasts This forecast product depicts 24-hour forecasts of wind, in increments of five knots, and significant wave heights, in isopleths of combined sea and swell in three-foot intervals. During appropriate weather conditions such as Gulf Stream "North Wall" episodes, substantially higher wind/wave height values are highlighted. Arrows will point to a superimposed hatched area. Wave-height values are depicted by solid contours in increments of three feet. Superstructure icing, displayed by a half moon with one or two lines crossing through the center, will depend on the forecast for light or heavy accumulation of ice.

Sea State Analysis Sea State Analyses are issued once a day per ocean at the time of the greatest number of ship observations (1200Z in the Atlantic and 0000Z in the Pacific) and analyze ship's synoptic reports for sea state in meters. The sea state analysis has solid one-meter contour intervals along with primary swell direction arrows. Where appropriate, maximum and minimum combined wave-height values (approximately 1/3 the height of the wind wave added to the height of the swell wave) are centrally depicted and underlined with the abbreviation of MAX or MIN under, or adjacent to, the values. The primary swell direction arrows are based on actual ship observation reports. During winter cold months, ice edges are displayed as a bold jagged line. Sea state analyses highlight where the most significant combined sea and swell wave heights prevail and when viewed with surface analyses, provide a complete picture of surface weather conditions.

48-Hour Sea State Forecast These forecasts are generated twice daily, at 0000Z and 1200Z, and are based on significant wave forecast model runs. Combined sea heights are depicted in solid contours of one-meter increments with a maximum or minimum combined sea state value underlined with the abbreviation of

MAX or MIN, adjacent to the values. Ice edge is displayed as a bold jagged line during winter months. These forecasts provide a complete picture of surface conditions when used in conjunction with the 48-hour surface forecasts. Our tropical cyclone symbol forecast position will be depicted on all surface analyses. Both 24-hour and 72-hour tropical cyclone positions will appear on the 48-hour surface forecasts. Mariners are strongly advised to rely on the latest warnings from the Tropical Prediction Center's (TPC) National Hurricane Center (NHC) which covers the Atlantic and Eastern Pacific Oceans east of 140W; the Central Pacific Hurricane Warning Center (PHNL) covering the Eastern and Central Pacific Ocean west of 140W to the international dateline (180); and the Joint Typhoon Warning Center (JTWC), covering the Western Pacific west of 180.

Tropical Eastern Pacific Analysis Streamline analyses covering the tropical East Pacific Ocean are issued twice daily for 1200Z and 1800Z. Coverage is from 30N to 20S and between 78W and 155W. Bold streamlines with arrows indicate prevailing general wind direction with actual or derived wind reports from ships and satellite. This chart includes all pertinent synoptic features (lows, highs, fronts, troughs) along with their direction and speed of motion. All tropical systems have internationally recognized symbols: a circle with a dot inside represents a tropical disturbance, a circle with an X inside represents a tropical depression, an open circle with two spiraling arms indicates a tropical storm, a closed circle with two spiraling arms denotes a hurricane. All tropical cyclones analyzed have the latest TPC advisory, location, intensity, and the direction and speed of motion.

Two types of surface wind data (barb format) are plotted on this analysis: ship reports, denoted by a circle at the end of the barb, and boundary layer winds from the latest numerical model run. Boundary layer winds are included to supplement the sparse data in the region. All regions of significant showers/thunderstorms on the Tropical Eastern Pacific Analysis are delineated by scalloped lines and labeled by coverage (SCT - scattered, ISOLD - isolated) and intensity (MOD - moderate, STG - strong). This analysis includes all appropriate synoptic features, i.e., lows, highs, fronts, and troughs. All tropical waves and tropical cyclones are displayed with the name and latest TPC advisory position of each tropical cyclone. This information is followed by a six digit tropical cyclone code with general system information.

Regional Products—General information Regional surface graphic charts cover both coastal and high-seas areas. There are two products—the first encompasses the western Atlantic Ocean west of 50W and north of 30N, which includes the US east coast, and the central Florida coast. The second covers the eastern North Pacific Ocean, from the Baja peninsula, south to Cabo San Lucas, and north to the Gulf of Alaska, which includes Prince William Sound as far west as 150W. Regional products consist of 24-hour surface forecasts and wind/wave forecasts and are issued twice daily per ocean for 0000Z and 1200Z.

These short-range forecast products depict synoptic and mesoscale features of surface low and high-pressure systems, isobars with frontal features, areas of reduced visibility, wind speeds, and significant wave height as generated by the synoptic and mesoscale weather systems within 1,000 miles of the coasts. The wind speeds are derived from Special Sensor Microwave Imagery (SSM/I) received from a US satellite from oceanic areas. This state-of-the art data input represents a significant enhancement in analyzing wind conditions in the marine environment. SSM/I is especially important in areas sparse in data, where ship and buoy reports are not available. SSM/I aids short-range prediction in the 24-hour forecast by enabling marine meteorologists to compare initial data from forecast model outputs and make necessary adjustments to near-term forecast solutions.

500 MB Upper Air Charts The 500-mb charts are produced from a computer model of the atmosphere. These products are automated, unmodified computer outputs that depict height contours above the earth's surface (geopotential heights) at 60-meter intervals. Wind speeds of 30 knots and greater are shown with wind barb increments of five or 10 knots. Embedded within the 500-mb height field are short wave troughs, generally 50 degrees or less in longitude. These are drawn on the charts as bold dashed lines. These short-wave troughs

assist the mariner in locating surface low-pressure systems or developing lows on frontal waves. The 500-mb winds approximate the speed of surface extra-tropical lows (often about 1/3 to 1/2 of the 500-mb wind speed) and surface wind force (approximately 50 percent), particularly in colder SW quadrants. The 5640-meter height contour is highlighted since this height contour is widely used by mariners for general surface storm track direction and the southern extent of Beaufort Force 7 (28 to 33 knot) or greater surface winds in the winter, and Force 6 (22 to 27 knot) winds in summer. Analyses are generated twice a day at 0000Z and 1200Z, and depict synoptic scale flow patterns, location, and amplitude of long and short waves. Synoptic scale features can be compared with previous analyses to determine the movement and trends of the upper air pattern. They can be used in conjunction with the surface analyses, sea state analyses, and meteorological satellite imagery, which are valid at the same synoptic time.

12-Hour 500-mb Forecasts These products can be used to compare changes in flow patterns from the latest 500-mb analyses to follow the progression of short waves. A 500-mb 48-hour forecast should be used in conjunction with surface and sea state 48-hour forecast products, and comparison of previous 48-hour 500-mb forecasts with the most current 500-mb analysis can establish confidence in subsequent forecasts.

Weather Fax Schedules

HONOLULU, HAWAII

Effective 6/06

CALL SIGN FREQUENCIES TIMES EMISSION POWER

KVM70 9982.5 kHz 0519-1556 F3C 4 KW

11090 kHz CONTINUOUS F3C 4 KW

16135 kHz 1719-0356 F3C 4 KW

TIME CONTENTS OF TRANSMISSION RPM/IOC VALID MAP

TIME AREA

0519/1719 TEST PATTERN 120/576

0524/1724 SIGNIFICANT CLOUD FEATURES 120/576 03/15 D

0535/1735 CYCLONE DANGER AREA 120/576 03/15 E

0555/1755 STREAMLINE ANALYSIS 120/576 00/12 B

0615/1815 SURFACE ANALYSIS 120/570 00/12 C

0635/1835 EAST PACIFIC GOES IR SATELLITE IMAGE 120/576 06/18 G

0649/1849 SW PACIFIC GOES IR SATELLITE IMAGE 120/576 06/18 H

0701/1901 24HR SURFACE FORECAST 120/576 00/12 A

0714/1914 48HR SURFACE FORECAST 120/576 00/12 A

0727/1927 72HR SURFACE FORECAST 120/576 00/12 A

0740/1940 WIND/WAVE ANALYSIS 120/576 00/12 B

0753/1953 24HR WIND/WAVE FORECAST 120/576 00/12 B

0806/2006 24HR WIND/WAVE FORECAST 120/576 00/12 4

0816/2016 48HR SURFACE FORECAST 120/576 00/12 1

0826/2026 48HR WIND/WAVE FORECAST 120/576 00/12 1

0836/2036 48/96HR WAVE PERIOD,SWELL DIRECTION 120/576 00/12 1

0846/2046 rebroadcast/ 96HR SURFACE FORECAST 120/576 1200 1

0856/2056 rebroadcast/ 96HR WIND/WAVE FORECAST 120/576 1200 1

0906/2106 PACIFIC GOES IR SATELLITE IMAGE 120/576 06/18 5

0917/2117 SURFACE ANALYSIS (PART 1 NE PACIFIC) 120/576 06/18 2

0930/2130 SURFACE ANALYSIS (PART 2 NW PACIFIC) 120/576 06/18 3

0943/2143 TROPICAL GOES IR SATELLITE IMAGE 120/576 06/18 Y

0954/2154 TROPICAL SURFACE ANALYSIS 120/576 06/18 Z

1008/2208 24HR TROPICAL WIND/WAVE FORECAST 120/576 06/18 Z

1042/2242 CYCLONE DANGER AREA 120/570 09/21 E

1102/2302 48HR WIND/WAVE FORECAST 120/576 00/12 B

1115/2315 72HR WIND/WAVE FORECAST 120/576 00/12 B

1128/2328 SEA SURFACE TEMPS 120/576 LATEST F

1141/2341 rebroadcast 24HR WIND/WAVE FORECASTS 120/576 00/12 B

1154/2354 STREAMLINE ANALYSIS 120/576 06/18 B

1214/0014 SURFACE ANALYSIS 120/576 06/18 C

1234/0034 EAST PACIFIC GOES IR SATELLITE IMAGE 120/576 12/00 G

1248/0048 SW PACIFIC GOES IR SATELLITE IMAGE 120/576 12/00 H

1300/0100 SCHEDULE PART I 120/576

1320/0120 SCHEDULE PART II 120/576

1340/0140 SYMBOLS OR PRODUCT NOTICE BULLETIN 120/576

1400/0200 24HR TROPICAL SURFACE FORECAST 120/576 12/00 Z

1410/0210 48HR TROPICAL SURFACE FORECAST 120/576 12/00 Z

1420/0220 72HR TROPICAL SURFACE FORECAST 120/576 12/00 Z

1430/0230 48/72HR TROPICAL WAVE PERIOD,SWELL DIR 120/576 12/00 Z

1440/0240 TROPICAL SEA STATE ANALYSIS 120/576 12/00 Z

1450/0250 24HR TROPICAL WIND/WAVE FORECAST 120/576 12/00 Z

1500/0300 48HR TROPICAL WIND/WAVE FORECAST 120/576 12/00 Z

1510/0310 72HR TROPICAL WIND/WAVE FORECAST 120/576 12/00 Z

1520/0320 rebroadcast/SEA STATE ANALYSIS 120/576 0000 1
1530/0330 SURFACE ANALYSIS(PART 1 NE PAC) 120/576 12/00 2
1543/0343 SURFACE ANALYSIS(PART 2 NW PAC) 120/576 12/00 3
1556/0356 TROPICAL SURFACE ANALYSIS 120/576 12/00 Z

MAP AREAS:

A. 30S - 50N, 110W - 130E B. 30S - 30N, 110W - 130E Honolulu Forecast Office
C. EQ - 50N, 110W - 130E D. 30S - 50N, 110W - 160E Honolulu Forecast Office
E. EQ - 40N, 80W - 170E F. EQ - 55N, 110W - 160E Honolulu Forecast Office
G. 05S - 55N, 110W - 155E H. 40S - 05N, 130W - 165E Honolulu Forecast Office
1. 20N - 70N, 115W - 135E 2. 20N - 70N, 115W - 175W Ocean Prediction Center
3. 20N - 70N, 175W - 135E 4. 18N - 62N, EAST OF 157W Ocean Prediction Center
5. 05N - 55N, EAST OF 180W Ocean Prediction Center
Y. 05N - 32N, EAST OF 130W Z. 20S - 30N, EAST OF 145W Tropical Prediction Center

HONOLULU, HAWAII

STREAMLINES ARE LINES OF CONSTANT WIND DIRECTION.

WIND SPEEDS ARE GIVEN BY WIND BARBS INDEPENDENT OF STREAMLINES.

THE SIGNIFICANT CLOUD FEATURES CHARTS DEPICT CLOUD FEATURES BASED UPON IMAGES FROM THE VARIOUS GEOSTATIONARY AND POLAR ORBITING SATELLITES OVER THE PACIFIC.

ABBREVIATIONS ON THESE CHARTS INCLUDE: AC - ALTOCUMULUS;

AS - ALTOSTRATUS; BKN - BROKEN; CB - CUMULONIMBUS; CC - CIRROCUMULUS;

CI - CIRRUS; CS - CIRROSTRATUS; CU - CUMULUS; FEW - FEW; ISOL - ISOLATED;

LYRS - LAYERS; NS - NIMBOSTRATUS; OVC - OVERCAST; SC - STRATO-CUMULUS;

SCT - SCATTERED; TCU - TOWERING CUMULUS; TSTM - THUNDERSTORM

RADIOFAX FREQUENCIES ARE ASSIGNED FREQUENCIES. TO CONVERT TO CARRIER FREQUENCIES, SUBTRACT 1.9 KHZ FROM THE ASSIGNED FREQUENCIES.

PT. REYES, CALIFORNIA

Effective 5/06

CALL SIGN FREQUENCIES TIMES EMISSION POWER

NMC 4346 kHz NIGHT F3C 4 KW
8682 kHz CONTINUOUS F3C 4 KW
12786 kHz CONTINUOUS F3C 4 KW
17151.2 kHz CONTINUOUS F3C 4 KW
22527 kHz DAY F3C 4 KW

TIME CONTENTS OF TRANSMISSION RPM/IOC VALID MAP

TIME AREA

0140/1400 TEST PATTERN 120/576
0143/1403 NE PACIFIC GOES IR SATELLITE IMAGE 120/576 00/12 6
0154/1414 PACIFIC GOES IR SATELLITE IMAGE 120/576 00/12 5
0205/1425 TROPICAL SEA STATE ANALYSIS 120/576 00/12 4
0215/1435 TROPICAL 24HR WIND/WAVE FORECAST 120/576 00/12 4
0225/----- TROPICAL 48HR WIND/WAVE FORECAST 120/576 0000 4
0235/----- TROPICAL 72HR WIND/WAVE FORECAST 120/576 0000 4
0245/1445 500MB ANALYSIS 120/576 00/12 1
0255/1455 SEA STATE ANALYSIS, WIND/WAVE ANALYSIS 120/576 00/12 1/8#
0305/1505 PRELIM SURFACE ANALYSIS(PART 1 NE PAC) 120/576 00/12 2
0318/1518 PRELIM SURFACE ANALYSIS(PART 2 NW PAC) 120/576 00/12 3
0331/1531 FINAL SURFACE ANALYSIS(PART 1 NE PAC) 120/576 00/12 2
0344/1544 FINAL SURFACE ANALYSIS(PART 2 NW PAC) 120/576 00/12 3
0357/1557 CYCLONE DANGER AREA* or HIGH WIND/WAVES 120/576 03/15 10
0408/1608 TROPICAL SURFACE ANALYSIS 120/576 00/12 4
0655/1840 TEST PATTERN
0657/----- 2033Z REBROADCAST (96HR 500MB) 120/576 1200 1
0707/----- 2043Z REBROADCAST (96HR SURFACE) 120/576 1200 1
0717/----- 2053Z REBROADCAST (96HR WIND/WAVE) 120/576 1200 1
0727/----- 2103Z REBROADCAST (96HR WAVE PERIOD) 120/576 1200 1
-----/1842 SST ANALYSIS 120/576 LATEST 9
-----/1852 SST ANALYSIS 120/576 LATEST 6
0737/1902 TROPICAL GOES IR SATELLITE IMAGE 120/576 06/18 7
0748/1913 WIND/WAVE ANALYSIS 120/576 06/18 8#
0758/1923 24HR 500MB FORECAST 120/576 00/12 1
0808/1933 24HR SURFACE FORECAST 120/576 00/12 8#
0818/1943 24HR WIND/WAVE FORECAST 120/576 00/12 8#
0828/1953 48HR 500MB FORECAST 120/576 00/12 1
0838/2003 48HR SURFACE FORECAST 120/576 00/12 1
0848/2013 48HR WIND/WAVE FORECAST 120/576 00/12 1
0858/2023 48HR WAVE PERIOD/SWELL DIRECTION 120/576 00/12 1
-----/2033 96HR 500MB FORECAST 120/576 1200 1
-----/2043 96HR SURFACE FORECAST 120/576 1200 1
-----/2053 96HR WIND/WAVE FORECAST 120/576 1200 1
-----/2103 96HR WAVE PERIOD/SWELL DIRECTION 120/576 1200 1
0908/2113 PACIFIC GOES IR SATELLITE IMAGE 120/576 06/18 5
0919/2124 SURFACE ANALYSIS (PART 1 NE PACIFIC) 120/576 06/18 2
0932/2137 SURFACE ANALYSIS (PART 2 NW PACIFIC) 120/576 06/18 3
0945/2150 TROPICAL SURFACE ANALYSIS 120/576 06/18 4
0959/2204 TROPICAL 24HR WIND/WAVE FORECAST 120/576 06/18 4
1009/2214 CYCLONE DANGER AREA* or HIGH WIND/WAVES 120/576 09/21 10
1120/2320 TEST PATTERN 120/576
1124/2324 BROADCAST SCHEDULE (PART 1) 120/576
1135/2335 BROADCAST SCHEDULE (PART 2) 120/576
1146/----- REQUEST FOR COMMENTS 120/576
1157/----- PRODUCT NOTICE BULLETIN 120/576

1208----- TROPICAL 48HR WIND/WAVE FORECAST 120/576 1200 4
 1218/----- TROPICAL 72HR WIND/WAVE FORECAST 120/576 1200 4
 1228/2346 TROPICAL 48HR WAVE PERIOD/SWELL DIR 120/576 12/00 4
 -----/2356 TROPICAL 72HR WAVE PERIOD/SWELL DIR 120/576 0000 4
 * Tropical Cyclone Danger Area chart replaced by High Wind/Wave Warning chart
 Dec 01 - May 14

Effective May 16, 2006 at 1900 UTC, map area 8 will change from a polar stereographic to a Mercator projection as follows:
 MAP AREAS: 1. 20N - 70N, 115W - 135E 2. 20N - 70N, 115W - 175W
 3. 20N - 70N, 175W - 135E 4. 20S - 30N, EAST OF 145W
 5. 05N - 55N, EAST OF 180W 6. 23N - 60N, EAST OF 150W
 7. 05N - 32N, EAST OF 130W 8. 18N - 62N, EAST OF 157W
 9. 40N - 53N, EAST OF 136W 10. 0N - 40N, 80W - 180W
 NOTES: 1. CARRIER FREQUENCY IS 1.9 kHz BELOW THE ASSIGNED FREQUENCY

CHARLEVILLE, AUSTRALIA

CALL SIGNS FREQUENCIES TIMES EMISSION POWER

VMC 2628 kHz 0900-1900 F3C 1 KW
 VMC 5100 kHz CONTINUOUS F3C 1 KW
 VMC 11030 kHz CONTINUOUS F3C 1 KW
 VMC 13920 kHz CONTINUOUS F3C 1 KW
 VMC 20469 kHz 1900-0900 F3C 1 KW

CHARLEVILLE & WILUNA, AUSTRALIA

TIME CONTENTS OF TRANSMISSION RPM/IOC VALID MAP

TIME AREA

-----/2315 Casey Eastern and Western High Seas (H+48) 120/576 1200
 1130/----- Asian Sea Surface Temp Anal (Weekly) 120/576 LATEST E
 -----/2330 Australian MSLP Prog (H+36) 120/576 0000 AUST
 -----/2345 Indian Ocean MSLP Prog (H+48) 120/576 1200 IO
 1145/----- VMC/VMW Information Notice 120/576

NOTES:

1. ALL WEEKLY OCEANOGRAPHIC PRODUCTS, SUCH AS SEA SURFACE TEMPERATURE CHARTS, WHICH WERE BROADCAST ONLY ONE DAY A WEEK, ARE NOW BROADCAST EVERY DAY. HOWEVER, NOTE THE CHARTS ARE ONLY UPDATED ONCE A WEEK, BUT BROADCAST EVERY DAY UNTIL A NEW CHART IS AVAILABLE TO REPLACE THE OLD CHART.

MAP AREAS: A: 30N - 35S, 120E - 180, B: 30N - 35S, 070E - 130E, C: 30N - 35S, 070E - 180
 D: 43S 110E, 34S 155E, 34N 142E, 29N 096E, E: 23N - 23S, 100E - 170E, H: 25N - 25S, 080E - 180
 AUST: LAMBERT 10S 090E, 50S 080E, 10S 170E, 50S 180
 SEAUST- MERCATOR 31S - 40S, 148E - 156E
 SWAUST MERCATOR 25S - 37S, 110E - 120E
 RSW - MERCATOR 0S - 50S, 100E - 180
 IO - POLAR 10S - 90S, EQ - 090E - 180
 SWP - POLAR 20S - 90S, 150E - 180 - 90W
 SH - POLAR 10S - 90S, ALL LONGITUDES
 (Schedule Effective ??????)
 (INFORMATION DATED 2004) http://www.bom.gov.au/nmoc/rad_sch/

WILUNA, AUSTRALIA

CALL SIGN FREQUENCIES TIMES EMISSION POWER

VMW 5755 kHz 1100-2100 F3C 1 KW

VMW 7535 kHz CONTINUOUS F3C 1 KW

VMW 10555 kHz CONTINUOUS F3C 1 KW

VMW 15615 kHz CONTINUOUS F3C 1 KW

VMW 18060 kHz 2100-1100 F3C 1 KW

TIME CONTENTS OF TRANSMISSION RPM/IOC VALID MAP**TIME AREA**

-----/1200 Australian MSLP Prog (H+36) 120/576 1200 AUST
0015/1215 VMC/VMW Schedule Page 1 of 2 120/576
0030/1230 VMC/VMW Schedule Page 2 of 2 120/576
0045/----- [VMC/VMW Information Notice](#) 120/576
0100/----- IPS Recommended Frequencies for VMC (Charleville)) 120/576
0130/----- IPS RECOMMENDED FREQUENCIES FOR VMW 120/576
-----/1245 Indian Ocean MSLP Prog (H+36) 120/576 1200 IO
-----/1300 Australian Sigwx Prog Valid 120/576 0600 RSW
-----/1315 South Pacific Ocean Total Waves (H+48) 120/576 0000 SWP
-----/1330 Indian Ocean Total Waves (H+48) 120/576 0000 IO
-----/1345 Pacific Ocean Sea Surface Temps (Weekly) 120/576 LATEST SWP
-----/1400 Indian Ocean Sea Surface Temps (Weekly) 120/576 LATEST IO
0200/----- Australian MSLP Prog (H+24) 120/576 0000 AUST
0215/----- Australian Sigwx Prog 120/576 1800 RSW
0230/----- Asian Current Warnings Summary 120/576 LATEST H
-----/1415 Casey Eastern and Western High Seas (H+48) 120/576 0000
0245/1430 Australian MSLP Anal (Manual) 120/576 00/12 AUST
-----/1445 Asian Current Warnings 120/576 LATEST H
0300/1500 Australian 500 hPa Anal 120/576 00/12 AUST
0315/----- Voice Broadcast Information for VMW (Wiluna) 120/576
-----/1515 Australian MSLP Prog (H+36) 120/576 1200 AUST
0330/1530 Asian Sigwx Prog Valid 120/576 12/00 D
0400/1600 Australian 500 hPa (H+24) Prog 120/576 00/12 AUST
0430/----- Australian MSLP 4-day forecast, Days 1 and 2 120/576
0445----- Australian MSLP 4-day forecast, Days 3 and 4 120/576
-----/1630 IPS Recommended Frequencies for VMC (Charleville) 120/576
-----/1700 IPS Recommended Frequencies for VMW (Wiluna) 120/576
0600/1800 Asian (Part A) Gradient Level Wind Anal (Manual) 120/576 00/12 A
0623/1823 Asian (Part B) Gradient Level Wind Anal (Manual) 120/576 00/12 B
0645/----- Asian MSLP Anal (Manual) 120/576 0000 C
0715/1900 Australian Sigwx Prog 120/576 00/12 RSW
0730/1915 Indian Ocean MSLP Anal (Manual) 120/576 00/12 IO
0745/1930 Australian Wind Waves Ht(m) Prog 120/576 00/12 AUST
0800/1945 Australian Swell Waves Ht(m) Prog (H+24) 120/576 00/12 AUST
0815/----- Asian Current Warnings Summary 120/576 LATEST H
0830/----- South Pacific Ocean MSLP Anal 120/576 0000 SWP
0845/----- Australian MSLP Anal (Manual) 120/576 0600 AUST
-----/2000 South Pacific Ocean MSLP Anal (Manual) 120/576 1200 SWP
-----/2015 Casey Eastern and Western High Seas (H+24) 120/576 1200
-----/2030 Australian MSLP Anal (Manual) 120/576 1800 AUST
-----/2045 Asian Current Warnings Summary 120/576 LATEST H
0903/2100 Asian 200 hPa Streamline Anal 120/576 00/12 C
0923/2120 Asian 500 hPa Streamline Anal 120.576 00/12 C

0941/2140 Asian 700 hPa Streamline Anal 120/576 00/12 C
 1000/2200 Asian Sigwx Prog 120/576 18/06 D
 1015/----- Casey Eastern and Western High Seas (H+24) 120/576 0000
 -----/2215 Casey Eastern and Western High Seas (H+36) 120/576 1200
 1030/2230 S.H. 500 hPa Prog (H+48) 120/576 00/12 SH
 1045/2245 S.H. MSLP Prog (H+48) 120/576 00/12 SH
 1100/----- Casey Eastern and Western High Seas (H+36) 120/576 0000
 1115/2300 S.H. 500 hPa Anal 120/576 00/12 SH

WELLINGTON, NEW ZEALAND

CALL SIGN FREQUENCIES TIMES EMISSION POWER

ZKLF 3247.4 kHz 0945-1700 F3C 5 KW
 5807 kHz CONTINUOUS F3C 5 KW
 9459 kHz CONTINUOUS F3C 5 KW
 13550.5 kHz CONTINUOUS F3C 5 KW
 16340.1 kHz 2145-0500 F3C 5 KW

Single transmitter used. Times below reflect broadcast times at 5807 kHz

Add 15 minutes for 9459 kHz, 30 minutes for 13550.5 kHz and 45 minutes for 3247.4 and 16340.1 kHz

TIME CONTENTS OF TRANSMISSION RPM/IOC VALID MAP

TIME AREA

0000/1200 SOUTHWEST PACIFIC 30HR SURFACE PROG (MSL) 120/576 00/12 SWP
 0100/1300 SOUTHWEST PACIFIC 48HR SURFACE PROG (MSL) 120/576 00/12 SWP
 0200/1400 SOUTHWEST PACIFIC 72HR SURFACE PROG (MSL) 120/576 00/12 SWP
 0300/1600 TASMAN-NEW ZEALAND MSL ANALYSIS 120/576 00/12 TNZ
 0400/1600 SOUTHWEST PACIFIC MSL ANALYSIS 120/576 00/12 SWP
 0900/2100 TASMAN-NEW ZEALAND MSL ANALYSIS 120/576 06/18 TNZ
 1000/2200 SOUTHWEST PACIFIC MSL ANALYSIS 120/576 06/18 SWP

1100/2300 TRANSMISSION SCHEDULE

MAP AREAS: TNZ - TASMAN SEA - NEW ZEALAND

SWP - SOUTHWEST PACIFIC

(INFORMATION DATED MAY 2002) <http://www.metservice.co.nz/default/index.php?pkey=191620&ckey=229167>

ern Hemisphere, winds ahead of the front will be southwest and shift into the west with frontal passage.

Warm front The leading edge of a relatively warmer surface air mass that separates two distinctly different air masses. The gradients of temperature and moisture are maximized in the frontal zone. Ahead of a typical warm front in the Northern Hemisphere, winds are from the southeast, and behind the front, winds will shift to the northwest.

Stationary front A front that has not moved appreciably from its previously occupied position.

Frontal occlusion The union of two fronts formed as a cold front overtakes a warm front or quasi-stationary front refers to a cold-front occlusion. When a warm front overtakes a cold front or quasi-stationary front, the process is termed a warm-front occlusion. These processes lead to the dissipation of the front in which there is no discontinuity in temperature and moisture.

Frontolysis The weakening or dissipation of a front occurs when two adjacent air masses lose contrasting properties, such as density and temperature. It is the opposite of frontogenesis.

Frontogenesis The formation of a front occurs when two adjacent air masses with different densities and temperatures meet and strengthen the discontinuity between the air masses. It occurs most frequently over continental land areas, such as the eastern United States, when the air mass moves out over the ocean. It is the opposite of frontolysis.

High An elongated area of relatively high pressure that is typically associated with a cyclonic wind shift.

Low, or Trof An elongated area of relatively low pressure that is typically associated with a cyclonic wind shift.

Low- and high-pressure systems and miscellaneous key terms

Pressure with a number such as 99 means 999 millibars (mb), and with 03 means 1,003 mb. High pressure with a number such as 25 means 1,025 mb.

Tropical low A low-pressure center that refers to a migratory frontal cyclone of middle and high latitudes. Tropical cyclones occasionally evolve into extratropical lows losing tropical characteristics and become associated with frontal discontinuity.

Low pressure An area of low pressure identified with counterclockwise circulation in the Northern Hemisphere and clockwise in the Southern Hemisphere. Also defined as a cyclone.

High pressure An area of higher pressure identified with a clockwise circulation in the Northern Hemisphere and a counterclockwise circulation in the Southern Hemisphere. Also defined as an anticyclone.

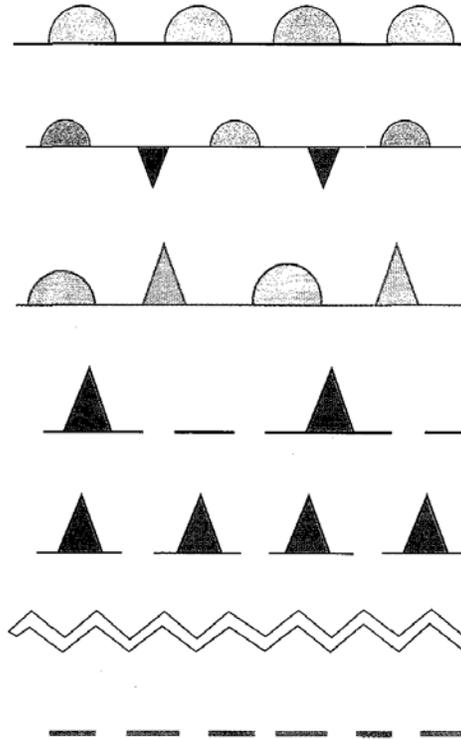
This term may be used in lieu of a forecast track position of a high- or low-pressure center when the center is expected to form at a specific time. For example, a surface analysis may depict a 24-hour position of a new low-pressure center with an X at the 24-hour position, followed by the term New; the date and time in UTC indicate the low is expected to form by 24 hours.

Rapidly intensifying Indicates an expected rapid intensification of a cyclone with surface pressure expected to drop by at least 24 mb within 24 hours.

Sudden wind increase A sudden wind increase characterized by a duration of minutes and followed by a sudden decrease in winds.

Fog Over the marine environment, the term fog refers to visibility greater than or equal to 0.5 nautical miles and less than three nautical miles. Fog is the visible aggregate of minute water droplets suspended in the atmosphere near the surface.

Wind speed and direction Arrows point in the direction wind is blowing and "feathers" indicate force in 5-, 10- and 50-knot increments.



Low Pressure



High Pressure



Light Fog



Heavy Fog



Chapter 4-

Radio Communications

Chapter Overview

- Radio Seminar with Radio Rob – February 2009
- Pacific Seafarer's Net 14.300 USB
- Net Control Guide... Puddle Jump 2009
- Radio Check in Report form
- SSB/Ham Radio Net Info
- Russell Radio – Bay of Islands info
- Quick list of radio nets
- Don Anderson's Radio Schedule
- Ham and Marine HF frequencies and Nets
- World Nets Schedule
- Nets in Mexico
- Voice of America & BBC schedules
- Email across the Pacific: Winlink & Sailmail
- Daylight Savings Time
- Medical stations to call for help
- FM radio for FP & Samoa

Note: See Weather Chapter for Weather Fax Radio Frequencies

Notes from Radio Seminar with Radio Rob – February 2009

1. Things to do before you go

- a. Test your radio, learn how to use it, ask questions.
- b. Check into ham nets, become familiar with net protocol.
- c. Make sure EPIRB info is up to date, and battery is good.
- d. Think about emergency antenna, before you need one.
- e. EPIRB update: WWW.BEACON.REGISTRATION.NOAA.GOV

2. Things to do underway

- a. Report your position daily.
- b. Check into nets, know positions of nearby boats.
- c. Monitor channel 16 on VHF 24/7.
- d. Monitor weather using, WEFAX, GBRIB Files.

3. Emergencies

- a. Don't panic
- b. Set up emergency antenna
- c. Report emergency and position ASAP using WinLink SailMail.
- d. Declare emergency on Net and ask for assistance.

4. Keeping in touch

- a. Winlink/Sailmail.
- b. Phone Patches.

5. What to do when you get there?

- a. Meet local hams.
- b. Use 2 meter VHF to go on local repeaters.
- c. Use Echolink to talk to hams back home.



The Maritime Mobile Service Network

"Serving Maritime Mobiles and Deployed Military Since 1968"
12:00 p.m. - 10:00 p.m. ET on 14.300.00 MHz

[Home](#) | [Marine Weather](#) | [MMSN Newsletter](#) | [Schedule](#) | [Guest Book](#)

[Net Control Information](#) | [Net Controllers Area](#)

IMPORTANT INFORMATION CONCERNING THE PACIFIC SEAFARERS NET

EFFECTIVE FEBRUARY 1, 2006, THE PACIFIC SEAFARERS NET (PacSea Net) WILL COMMENCE NET OPERATIONS ON 14.300MHZ. SAME TIME, DIFFERENT FREQUENCY!

The Net Manager of the PacSea Net, Mike VK7ACQ, and other long time members of the PacSea Net, have agreed that this move would be beneficial to the maritime amateur community by consolidating the two most prominent 20 meter maritime nets onto the same frequency. Along with the Intercontinental Traffic Net, each net will compliment the other, provide greater coverage, improved co-operation, better intercommunication and provide an improved "emergency watch" throughout the day and night for the maritime mobile stations.

The Intercontinental Traffic Net will open the day at 07:00 Eastern until 12:00 Eastern time. They will then hand-off to the Maritime Mobile Service Network, who in turn, will hand the frequency to the PacSea Net at the end of their session. The PacSea Net will then run it's warm-up session and roll call, as normal.

As you can see, the nets are attempting to standardize 14.300 MHz. as THE maritime mobile frequency on the 20-meter band. We invite other maritime nets in the Indian Ocean, African and Mediterranean areas to join with us on 14.300 MHz. and establish a 24-hour maritime net that follows the sun around the globe.

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Last updated: January 3, 2006

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Pacific Seafarer's Net

14.300MHz daily at 0300UTC

The Pacific Seafarer's Net is an Amateur Radio net that provides support and assistance to boats at sea. All licensed Amateurs are welcome to take part.

The net is in two parts, beginning with an informal 25-30 minute 'warm up' session to exchange news, answer questions and solve problems.

Puddle Jump Net 2009

Purpose: To provide organized and efficient communication for all cruisers on their way from North or Central America to the South Pacific and beyond. Primary focus will be sharing of weather and sailing conditions along with significant events that will improve safety and comfort.

Format:

- Net control will open the net and check for emergency traffic.
- Update weather will be read by net control for a designated station
- Net control will do a roll call of those on frequency, relays will be required.
- After contact is established, each boat should provide the following information:
 - Current position, boat speed and course (True)
 - Current weather which includes
 - Wind direction and strength
 - Swell direction and height
 - Percent of cloud cover
 - Barometric tendency over the last three hours
- Unusual occurrences (floating debris, cargo container ships, nets etc)
- If traffic is requested.
- At the end of the roll call, net control will check for additional check-ins
- Net control will then handle vessels with traffic
- Net control will then determine net controller for next day and close net.

It is possible since the fleet will be spread out over time, two net times will be used, one for the western half of the fleet and one for the eastern half of the fleet.. The latter time can be used beyond French Polynesia, down to New Zealand and Australia. The times are chosen not to conflict with important times when Fax's are being received.

Time and Frequency:

Western fleet	1830Z on 8.188 MHz., USB
Eastern Fleet	0500Z on 8.188 MHz, USB
Gossip Net	2300Z on 4.033 MHz, USB
	Or 4.045 MHz, USB
Chat Net (airmail)	1400Z on 13.550 MHz, USB

To contact a commercial vessel :

Hail them on VHF channel 16

If they do not respond, try channel 70 (DSC calling channel)

If you need to call Mayday: If you are unable to contact anyone when declaring mayday, go to 11.282

USB. This is the Airline control net for planes from Oakland to Honolulu.

SSB/HAM Radio Nets – Recommend use UTC Time for everything

SSB/HF radios are wonderful and mysterious. The radio needs tender love and care and lots and lots of patience and attention to really benefit from its' capability to enable you to communicate with other puddle jumpers, handling emergencies, getting news, getting weather, getting real weather, from other cruisers as well as the official sources. The HF radio works best when it is in charge of the ship. It transmits in just about any condition (affecting other systems on your vessel depending on the frequency) but if you would like to hear others talking to you, it wants the inverter off and refrigeration off while you are listening and it will give you much better reception and clarity that you might even understand. The SSB/HF radio really likes to communicate best in the twilight hours early morning and early evening. Reception is affected by sun spot activity.

You must use your SSB/HF radio now. Get your General Ham license if at all possible because it allows you greater use of the frequency spectrum. You must start using the HF radio and learn on the local nets. The more you use it the more comfortable you become with it. Log on to the Pacific Seafarer's Net 14.300 MHz as soon as you can so that you will be comfortable with the net and the procedures on the net. Ideally, like any new net, you will tune in the frequency and listen to the net for a few days to get familiar with their procedures and then log on to the net. The more you are on the net the more comfortable you will be and the Net Control Station (NCS) will get to know you.

The DSC capability of your SSB/HF radio is amazing and extremely valuable particularly in the event of an emergency. Depending upon your radio you should have your MMSI (Marine Mobile Service Identifier) programmed into the radio and then be able to have the MMSI of your fellow cruisers programmed into your radio. Once these elements are accomplished and programmed into your radio with the DSC (Digital Selective Calling) capability you will always be in touch with your sailing companions. It can provide you with routine position updates of the other vessels as well as notify you of emergency situations. The DSC transmits digital information to all selected stations which is an extremely reliable means of communication. This is accomplished without a computer or modem so it is a little slower to program but it works.

The greatest capability of the SSB/HF radio is when connected to a pactor modem and computer. Once this is accomplished the new system can communicate with other HAM stations on the same frequency similar to instant messaging in a chat format. It is digital communications which are much more reliable and faster than voice. With this system configuration and airmail software installed on your computer you can receive hard copy weather FAX, e-mail, send and receive Morse code (encrypt and decrypt automatically) maintain good communications with other Puddle Jumpers.

The Puddle Jumper Net for 2009 should come on line on Tuesday, 6 March 2009, at 1300 UTC, operating on frequency 8188 kHz. There should be different net controller for each day – spreading the work load and reducing individual power consumption as well as giving the participants an opportunity to get to better know several personalities.

1. Select an appropriate frequency for the time of day. The initial frequency of 8188kHz will be used. Participants that are farther east will get cut off if their time is much past 9am. .
2. Optional world news headlines by one boat five minutes before the official net starts
3. Start with emergency/medical/priority traffic request, then read the preferred weather report for the area, then roll-call for boats on passage, then close the net and open the frequency for boat-to-boat traffic. Roll call would re-call boats that missed their check-in at the end and also call for new boats.
4. Roll call would provide lat/lon, course, speed, wind direction/speed, swell direction/height, cloud cover percentage and barometer/trend.
5. The net can be more like a radio call-in show.

For Hams, there is also the option of calling in to the Pacific Seafarer's Net on 14.300 at 0300 UTC. There is a warm-up session for about 30-60 minutes before the net. Call in during the warm-up to get signed up. You must be a US General Class HAM or equivalent to use this service and they do confirm this. This net is well-done.

Russell Radio

Russell Radio based in Opuia, NZ provides a daily check-in service for cruisers. This is a non-profit service and it is expected that if you use the service you provide a donation to help keep the service running for future cruisers. The marina in Opuia had a donation box and Des welcomed us to visit him in Pahia. You can see pictures of him and his office on our web site. Read more about Russell Radio below.

Passage nets

In addition to the nets you have checked into during your crossing, many boats check in with Des at Russell Radio. Des uses 4.445 and 13.101 for frequencies. Check with other cruisers to get the latest times and frequencies for his net and like other nets, listen in to a couple check-ins to get a feel for what he's looking for from you. Try checking in with him from Rarotonga and have a good rapport developed by the time you start your passage.

Des has been around for many years and knows what can happen out there. He won't tell you what to do, but will provide you with a 24-hour synopsis of what to expect at your exact area based on the weather faxes and reports from other cruisers.

Bay of Islands Marine Radio Association Inc

Operators: Des Renner Lynda & Ritchie Blomfield

SSB Sked times

	Des				Ritchie	
4445	0730 - 0800	1900 - 1930	/	4417	0700 - 0715	1900 - 1930
13101	0800 - 0830	1600 - 1630	/	6516	0715 - 0730	1930 - 1945
(Will carry on until all vessels on the list have checked in)						
				6513	0730 - 0800	1945 - 2000

4445 & 6513 are special ship to shore frequencies allocated to Russell Radio only, for position reporting, weather reports & emergency traffic.

VHF Channels: Channel 16 – calling & emergencies
 Channel 63 – calling & working
 Channels 17, 68, 71, 74 working

Hours of watch 0700 – 2230

Coastal Weather Forecasts, Tides & messages - Channel 63 – 0930, 1330 & 1750

All times are NZ times, other times & frequencies by arrangement

Quick Reference to Radio nets

Marine

Coconut Breakfast Net, French Polynesia-	8188 kHz at 1730Z (English)
Coconut Breakfast Net, West of French Polynesia-	12353 kHz at 1830Z (English)
French Net -	13940 kHz at 0300Z (French)
Pacific Maritime Net -	21412 kHz at 2200Z
Rag of the Air Net-	8173 kHz at 1900Z
Amigo Net	8122 KHz daily 14:00Z
Baja Net	7238 KHz daily 16:00Z
Blue Water net	6516 KHz daily 02:00Z

Ham

Pacific Seafarers-	Net 14300. 0230Z informal chat followed by roll call at 0325Z
Maritime Mobile-	Net 14300 - 14313 kHz 24h/day in different languages

DON ANDERSON----My Radio Schedule beginning June 20, 2009

Don Anderson
 N6HG
 SUMMER PASSAGE RADIO WPXU557
 "SUMMER PASSAGE" Valiant 47 WBX8756
 Oxnard, CA

Time Freq
UTC kHz

1330	3968 LSB	Sonrisa Net. I monitor for weather reports and any emergency traffic
1415	8122	Amigo Net. My Forecast, Mexico Pacific Coast and Sea of Cortez.
1430*	7249 LSB	I monitor 8A for weather questions. For vessels more than 1500 mi from me I move up to 12C (12359.0). For vessels less than 500 mi I move to 6D (6516.0) or 4A (4146.0).
1515	7260 LSB	Baja California Maritime Service Net. My forecast San Diego to Puerto Vallarta including Sea of Cortez. Weekdays only. I am backup for AA6TP if needed on weekends.
1530*	12359	I monitor 12C for weather questions usually 500 to 2500 miles from my station.
2245*	12359	I monitor 16C for weather questions from vessels out to 2500 mi from my station.

<u>Time</u>	<u>Freq</u>	
<u>UTC</u>	<u>kHz</u>	
2315*	16534	I monitor 16C for weather questions from vessels North and South Pacific , out to 6000 mi from me. 18840, 22165 and 25115 are alternate frequencies, especially for vessels beyond 3000 mi.
0000		classified Navy-Marine Corps MARS traffic nets.
0105	6516	Southbound Net. Brief summary on 6D of any significant weather since the Amigo net.
0300	14313	Pacific Seafarers' Net. I monitor for weather questions. If requested I usually move off after roll call to 14283.

*If nothing heard after 15 minutes I close down.

Ham and Marine HF frequencies and Nets

Compiled February 2006

Frequency	Time (UTC)	Type	Name	Notes
5000 kHz	48 min past each hour	Weather- storm warnings	WWVH - Hawaii	Voice weather
10000 kHz	48 min past each hour	Weather- storm warnings	WWVH - Hawaii	Voice weather
15000 kHz	48 min past each hour	Weather- storm warnings	WWVH - Hawaii	Voice weather
8803 kHz	2100	F.P. weather forecasts	Mahina Radio	Voice weather
	0640, 2100	F. P. weather warnings	Mahina Radio	Voice weather
4372.9	0033, 0433, 0803, 1203, 2003	South Pacific Forecasts	Suva Radio	Voice Weather
6746.8	0033, 0433, 0803, 1203, 2003	South Pacific Forecasts	Suva Radio	Voice Weather
6224	0303, 0903, 1503, 2103	N.Z. forecasts for SW Pacific	Taupo Maritime Radio	Voice Weather
8297	0333, 0933, 1533, 2133	N.Z. forecasts for SW Pacific	Taupo Maritime Radio	Voice Weather
12356	0303, 0903, 2103	N.Z. forecasts for SW Pacific	Taupo Maritime Radio	Voice Weather
16531	0903, 2103	N.Z. forecasts for SW Pacific	Taupo Maritime Radio	Voice Weather
6224	0303, 0903, 1503, 2103	Weather- F.P to Australia	Bob McDavitt Weather	Voice Weather
12356	0303, 0903, 1503, 2103	Weather- F.P to Australia	Bob McDavitt Weather	Voice Weather
8297	Sent 30 min after above	Weather- F.P to Australia	Bob McDavitt Weather	Voice Weather
16531	Sent 30 min after above	Weather- F.P to Australia	Bob McDavitt Weather	Voice Weather
3247.4	Between: 2300-2359	Maps sent of above area	Bob McDavitt Weather	Maps- weather
5807	Between: 2300-2359	Maps sent of above area	Bob McDavitt Weather	Maps- weather
9459	Between: 2300-2359	Maps sent of above area	Bob McDavitt Weather	Maps- weather
13550.5	Between: 2300-2359	Maps sent of above area	Bob McDavitt Weather	Maps- weather
16340.1	Between: 2300-2359	Maps sent of above area	Bob McDavitt Weather	Maps- weather
4445	0730-0800, 1900-1930-NZ time	Weather in NZ & Pacific -Bora Bora to Australia	Russell Radio - - will carry on until all vessels on the list have checked in	Voice Weather - Des
13101	0800-0830, 1600-1630	Weather in NZ & Pacific	Russell Radio	Voice Weather - Des

	NZ time			
4417	0700-0715, 1900-1930 NZ time	Weather in NZ & Pacific	Russell Radio	Voice Weather -Ritchie
6516	0715-0730, 1930-1945 NZ time	Weather in NZ & Pacific	Russell Radio	Voice Weather -Ritchie
6513	0730-0800, 1945-2000 NZ time	Weather in NZ & Pacific	Russell Radio	Voice Weather -Ritchie
12353	0400	Marine	Russell Radio	Shifts with DST. Meets twice a day
4483	1020 UTC, 0650 local	Weather	Mersey Radio - Lionel	
6227	1025	Weather	Mersey Radio	
8294	1030	Weather	Mersey Radio	
14300 (14313)	0230	Ham	Pacific Sea Net	Informal chat
	0325	Ham	Pacific Sea Net	Roll call begins
14300-14313	24/7	Ham	Maritime Mobile	Different languages
21412	2200	Marine	Pacific Maritime Net	
13940	0300	Marine	French Net	In French
8188	1730	Marine, French Polynesia	Coconut Breakfast Net	English
12353	1830	Marine, West of F.P.	Coconut Breakfast Net	English
14315	0800- 0830	Ham	Pac Inter-island Net	
3968 LSB	1400	Ham	Sonrisa Net	
4030	1400	Marine	Papaguayo Net	
14340	1900	Ham	Manana Net	Mon-sat
14116	0300	Ham	Australian Travelers Net	
12356	0400, 1945	Marine	Onerahi Yacht Club	Weather from NZ
2480	0530, 1903	Marine	Onerahi Yacht Club	
4445	0600, 1915	Marine	Onerahi Yacht Club	
14318	0400	Ham	Arnold's Net	Includes weather from Cooks to NZ
8815	0430	Marine	Arnold's Net	
12214	0630, 1930	Marine	Arnold's Net Wefax	
2207	0815, 1815	Marine	Cook Islands	weather
14315	1000, 2300	Ham	Robby's Net	
	2100	Ham	Tony's Net, South Pacific Will warm up @ 2030	+/- QRM. Position reports & weather
11825	1600	Ham	International SW Pacific, Tahiti	Operates 1600-0900
7299	1700	Ham	South Pacific Sailing	Daily
7082	2135	Ham	The weather net	From Australia
28313	0130-0300	Ham	10M Maritime Mobile Net	East pacific, Hawaii
21200	0500	Ham	UK/NZ/African Net	
3820	0715	Ham	Bay of Islands Net	NZ, Australia, Pacific
14329	1900	Ham	Bay of Islands Net	
7076	1800	Ham	South Pacific Cruising Net	Informal
14285	1900	Ham	Kaffee Klatch Un-Net	MWSat, Hawaii, Tahiti, new & maritime mobile
14305	1900	Ham	Confusion Net	
7080	2000	Ham	New Zealand WX Net	Weather fax
7095	2000	Ham	Harry's Net	

World Nets by Region in Time Sequence

Freq kHz	Band	Time(s)	Time Zone	Net Name	Area	Notes
Region 0 - Worldwide						
2182	Marine	0000Z		International Distress	All	24-hour coverage
14325	HAM	As Needed		Hurricane Net	Atlantic and Pacific Coasts	As needed. Both coasts
Region 1 - Atlantic, N. Europe, US						
3968	HAM	0000Z	Eastern	Chesapeake Bay Nautical	Chesapeake Bay	Shifts with DST. All hams welcome
3968	HAM	0000Z		Chesapeake Bay Nautical Net	Chesapeake Bay	Shifts with DST. Local time 1900.
2582	Marine	0035Z		Bermuda Harbor Radio	Atlantic	Six nets/day. Initial calls on VHF 16 and 2182, then switches to net frequency. Navigation information, weather, bridge opening times.
14334	HAM	0200Z		Brazil Net	East Coast	
2582	Marine	0435Z		Bermuda Harbor Radio	Atlantic	Six nets/day. Initial calls on VHF 16 and 2182, then switches to net frequency. Navigation information, weather, bridge opening times.
14303	HAM	0800Z		United Kingdom Maritime Mobile Net	UK waters, Mediterranean & Atlantic	Meets twice per day. May change +/- for QRM.
8152	Marine	0830 local		Cruiseheimer's Net	E. Coast	
2582	Marine	0835Z		Bermuda Harbor Radio	Atlantic	Six nets/day. Initial calls on VHF 16 and 2182, then switches to net frequency. Navigation information, weather, bridge opening times.
4003	Marine	1055Z		Bahamas Air Sea Rescue Weather Net	Bahamas	
3696	Marine	1115Z		Bahamas Weather Net	Bahamas	
7050	HAM	1200Z	Eastern	Waterway "Slow CW"	East Coast	Mon, Wed, Fri. Shifts with DST.
7050	HAM	1200Z	Eastern	Waterway "Fast CW"	East Coast	Thu, Sat, Sun. Shifts with DST.

14118HAM	1200Z	Le Reseau Du Capitaine Net	Atlantic, Caribbean, and Pacific	French Canadian net. Most operators are bilingual. Also open at 1830 for emergency traffic and wx reports. May be one hour earlier during daylight time.
8748Marine	1205Z	Rogoland Radio	Norway	In English. Also broadcasts on 13158.
3696HAM	1220Z	Eastern Bahamas WX	Bahamas	Shifts with DST. Bahamas hams only - not a US frequency
2582Marine	1235Z	Bermuda Harbor Radio	Atlantic	Six nets/day. Initial calls on VHF 16 and 2182, then switches to net frequency. Navigation information, weather, bridge opening times.
7268HAM	1245Z	Waterway Radio & Cruising Club	Atlantic coast, Bahamas Europe, Mediterranean,	Daily, 1145Z summers
14121HAM	1245Z	Mississauga Net	Atlantic, Caribbean, and Central America	Canadian stations and relays
21400HAM	1300Z	Trans Atlantic Net	Atlantic	Weather and third party relay.
8152Marine	1330Z	Cruiseheimer's Net	East Coast	Time shifts with DST
7268HAM	1345Z	Eastern Tech Net	East Coast	Sundays, after Waterway Net. Shifts with DST.
7268HAM	1345Z	Eastern Computer Net	East Coast	Fridays, after Waterway Net. Shifts with DST.
7268HAM	1345Z	Eastern Landcruisers Net	East Coast	Thursdays, after Waterway Net
7272HAM	1400Z	Eastern United States Power Squadron		Tue. Shifts with DST.
7292HAM	1400Z	Florida Net	Florida	
14173HAM	1530Z	Eastern Chesapeake Nautical Net	East Coast	Mon - Fri "Chesapeake Chat." Shifts with DST.
14313HAM	1630Z	German Maritime Mobile Net	Germany & Europe	Daily
2582Marine	1635Z	Bermuda Harbor Radio	Atlantic	Six nets/day. Initial calls on VHF 16 and 2182, then switches to net frequency. Navigation information, weather, bridge opening times.
1845HAM	1700Z	FL Amateur Radio Transmitting Society	Florida	Daily
14300HAM	1700Z	USCG Aux - First net		Sat only
14303HAM	1800Z	United Kingdom Maritime Mobile Net	UK waters, Mediterranean & Atlantic	Meets twice per day. May change +/- for QRM.

14313 HAM	1800Z		USCG Aux - Second net		Sat only.
12359 SSB	1945Z		Herb Hilgenberg's Weather	US Atlantic Coast & Caribbean	
12359 Marine	2000Z		Herb Hilgenberg's Southbound II Net	Atlantic & Caribbean, then Pacific	Detailed weather forecasts for cruisers.
12359 Marine	2000Z		Herb Hilgenberg's Southbound II WX Net	Atlantic	Check-ins begin at 1930Z. Detailed wx for Atlantic, Caribbean, and later for Pacific
2582 Marine	2035Z		Bermuda Harbor Radio	Atlantic	Six nets/day. Initial calls on VHF 16 and 2182, then switches to net frequency. Navigation information, weather, bridge opening times.
7295 HAM	2100Z		Waterway Cocktail Hour	US East Coast & Bahamas	Shifts with DST.
7295 HAM	2130Z	Eastern	Waterway "Cocktail Hour"	East Coast	Shifts with DST.
14300 HAM	2200 local		Mobile Maritime	UK & Trans Atlantic	twice daily
8748 Marine	2305Z		Rogoland Radio	Atlantic	In English. Also broadcasts on 13158.

Region 2 - Caribbean, Gulf Coast, S. America, Panama Canal

7158 Marine	0000Z		Caribbean Net	Caribbean Sea	
3935 Marine	0100Z		Gulf Coast Hurricane Net	US Gulf Coast	As needed.
4357 Marine	0200Z		Virgin Island Forecast	Caribbean Sea	Several times per day
14303 HAM	0800Z		Caribbean - UK Net	Caribbean Sea	3 times per day
6227 Marine	0845 local		Diver Dan Weather	Bahamas	
8143 Marine	0900 local		Panama - Pacific Net	Caribbean Sea	
8164 SSB	0900 local	04	Patagonia Net	Patagonia	Covers from Mar del Plata, Argentina through Valdivia, Chile
4357 Marine	1000Z		Virgin Island Forecast		Several times per day
3815 Marine	1035Z		West Indies Weather Net	Caribbean Sea	
7162 HAM	1035Z		Antilles Emergency & Weather Net	Caribbean Sea	
6215 Marine	1100Z		Antilles Cruiser's Net	Caribbean Sea	
7230 HAM	1100Z		Caribbean Marine	Caribbean	

7241 HAM	1100Z	Caribbean Maritime Mobile Net	Caribbean	Daily. Check-ins and weather
14283 HAM	1100Z	Caribus	Caribbean Sea	
3930 HAM	1110Z	Puerto Rico/Virgin Islands Weather	Caribbean Sea	twice daily
7086 HAM	1125Z	Caribbean Weather Net Details	Caribbean Sea	WeFAX on request
8161 Marine	1130Z	Trinidad Net & Weather	Caribbean Sea	
4003 Marine	1200Z	Bahamas Weather Net	Bahamas	
14303 HAM	1200Z	Caribbean - UK Net	Caribbean Sea	3 times per day
4003 Marine	1215Z	Caribbean Weather	Caribbean Sea	
8104 Marine	1215Z	Caribbean Safety & Security Net	Caribbean Sea	Safety information for cruisers in Caribbean
3696 HAM	1220Z	Bahamas Weather Net	Bahamas	varies with daylight time
8104 Marine	1230Z	Caribbean Safety & Security Net	Caribbean Sea	David Jones' weather. Continues on 12362 kHz.
8152 Marine	1230Z	Cruiseheimer's Net	US East Coast & E. Caribbean	One hour earlier during daylight time.
7085 HAM	1300Z	Central American Breakfast	Central America from 20°N to 20°S	
12362 Marine	1300Z	Caribbean Weather Net	Caribbean Sea	David Jones' weather. Continues from 1230 schedule.
8107 Marine	1330Z	Panama Canal Connection Net	Pacific from Mexico to Galapagos, Atlantic from Belize to Colombia	Emphasis on SW Caribbean
8107 Marine	1330Z	Panama Canal Connection net	Panama	Emphasis on SW Caribbean. Covers out to Galapagos, and to Belize and Colombia.
4030 Marine	1400Z	Papaguyo Net	Central/South America	
7083 Marine	1400Z	Breakfast Club Cruisers Net	Central/South America	
8143 SSB	1400Z	Panama Pacific	W. side Central America	
8188 Marine	1400Z	Northwest Caribbean Cruisers Net	Mexico to Colombia	From Mexico to Colombia
14300 HAM	1600Z	Maritime Mobile	US Atlantic Coast & Caribbean	Coverage 1600 - 0200Z
14303 HAM	1800Z	Caribbean - UK	Caribbean Sea	3 times per day

7086HAM	2030Z		Net Cocktail & Weather Net	Caribbean Sea	
21404HAM	2200Z		Central American Net		Alt freq 21410
8107Marine	2215Z		Caribbean Weather Net	Caribbean Sea	Hurricane Season
3815HAM	2235Z		Antilles Emergency & Weather Net	Caribbean Sea	
3930HAM	2310Z		Puerto Rico/Virgin Island Weather	Caribbean Sea	
3930HAM	2310Z		Puerto Rico/Virgin Islands Weather	Caribbean Sea	twice daily
3815HAM	2330Z		Barbados/Trinidad Net	Caribbean Sea	

Region 3 - Mediterranean Sea

8122SSB	0530Z		Med Cruisers SSB Net	Mediterranean	Summer sailing season
7085HAM	0700Z		Mediterranean Maritime Mobile Net	Mediterranean	

Region 4 - E. Pacific, Hawaii, Mexico

3865HAM	0000Z	PDT	British Columbia Boaters		Summer only - all welcome
14305HAM	0200Z		California - Hawaii Net	Pacific Ocean	
21402HAM	0200Z		Jerry's Happy Hour	Pacific Ocean	Net Control in California
14313HAM	0230Z		Pacific Seafarers Net	Pacific area	Alt freq 14300
4051Marine	0230Z		Cruisers Southbound Net		
21404HAM	0230Z		California - Hawaii Pacific Net	Pacific Ocean	Weekdays
14115HAM	0400Z		DDD Net Pacific for Canadians	Pacific Ocean	Twice Daily
14313HAM	0430Z		Pacific Maritime Net	Pacific Ocean	
7278HAM	0750 local		Great Northern Boaters' Net	West Coast	
7238.5HAM	0800 local		Baja California Maritime Net	California	
14315HAM	0800Z		Pacific Interisland Net	Pacific	
3865HAM	0900Z		British Columbia Boaters Net		Summers only. Shifts with DST.
3865HAM	1400Z	PDT	Port Ludlow Yacht		Summer only - all welcome

		Club		
3968 HAM	1400Z	Sonrisa Net		
4030 Marine	1400Z	Papaguayo Net		
7294 HAM	1430 local	Chubasco Net	E. Pacific & Mexico	
3865 HAM	1500Z	Pt. Ludlow Yacht Club Net		Summers only. Shifts with DST.
7294 HAM	1530Z	Chubasco Net		
7238 HAM	1600Z	Baja California Maritime Net	Southern California	1500Z in summer
14115 HAM	1700Z	United States Power Squadron Net		Saturday
14115 HAM	1730Z	DDD Net Pacific for Canadians		Twice Daily
14305 HAM	1900Z	Confusion Net		Mon - Fri
14340 HAM	1900Z	Manana Net	Sea of Cortez, the coast of mainland Mexico, South America, Alaska, and into the Pacific	Mon – Sat
21412 HAM	2200Z	Pacific Maritime Mobile Service Net	Pacific/Worldwide	early bird check-in at 2130Z
14285 HAM	2300Z	California to Caribbean		Mondays

Region 5 - South and West Pacific

14116 HAM	0300Z	Australian Travellers Net	Australia	For land-based and cruising hams
12353 Marine	0400Z	Russell Radio	Bora Bora to Australia	Shifts with DST. Meets twice per day.
12356 Marine	0400Z	Onerahi Yacht Club		Weather. From NZ.
14313 HAM	0400Z	Pacific Maritime Mobile Net		
14318 HAM	0400Z	Arnold's Net		Includes weather. From Cook Islands, NZ
8815 Marine	0430Z	Arnold's Net		Includes weather. From Cook Islands, NZ
2480 Marine	0530Z	Onerahi Yacht Club		Weather. From NZ.
4445 Marine	0600Z	Onerahi Yacht Club		Weather. From NZ.
12214 Marine	0630Z	Arnold's Net WeFax		Weather, from Cook Islands, NZ
14180 HAM	0630Z	Pitcairn Net		
14310 HAM	0700Z	Mariana - Guam Net		

4445 Marine	0730 local	Russell Radio - NZ	New Zealand	twice daily
13101 Marine	0800 local	Russell Radio - NZ	New Zealand	twice daily
14315 HAM	0800Z	Pacific Inter Island Net	Pacific - Micronesia up to Hawaii	Daily roll call
2207 Marine	0815Z	Cook Islands Arnold's Emergency Weather Net		Weather Only when typhoons threaten in the Pacific basin
4450 Marine	0900Z	Robby's Net		Twice Daily
14315 HAM	1000Z	Russell Radio - NZ	New Zealand	twice daily
13101 Marine	1600 local	International SW Tahiti	Pacific	Operates 1600Z - 0900Z
7299 HAM	1700Z	South Pacific Sailing	S. Pacific	Daily
2207 Marine	1815Z	Cook Islands		Weather
14340 HAM	1900Z	Mariana Net		Mon - Sat
2480 Marine	1903Z	Onerahi Yacht Club		Weather. From NZ.
4445 Marine	1915Z	Onerahi Yacht Club		Weather. From NZ.
12214 Marine	1930Z	Arnold's Weather Fax		Weather, from Cook Islands, NZ
12356 Marine	1945Z	Onerahi Yacht Club		Weather. From NZ.
13176 Marine	2000Z	Don's Maritime Mobile Net		Net may be discontinued due to death of net control
12359 Marine	2030Z	Russell Radio	Bora Bora to Australia	Shifts with DST. Meets twice per day.
14315 HAM	2100Z	Tony's Net	South Pacific	+/- QRM. Position reports and weather.
12353 Marine	2115Z	Russell Radio	Bora Bora to Australia	Shifts with DST. Meets twice per day.
7082 HAM	2135Z	The Weather Net		from Australia
14320 HAM	2200Z	Pacific Maritime Mobile Service Net		from California
14315 HAM	2300Z	Robby's Net		Twice Daily

Region 6 - Indian Ocean, Red Sea, Africa, Asia, South Atlantic

14320 HAM	0000Z	Southeast Asia Maritime Mobile Net		Alternate frequency 7045 kHz
7085 HAM	0030Z	Southeast Aziz Maritime Mobile Net	Southeast Asia	Continuation of 14320 kHz net at 2400Z
21407 HAM	0100Z	Pacific - Indian Ocean Net		

14316HAM	0500Z	Tony's Net	Indian Ocean and Red Sea	from Kenya
14316HAM	0630Z	South African Maritime Mobile Net	Indian Ocean & South Atlantic	Moves to 7045 afterward
14320HAM	1115Z	Roy's Net	North & West Indian Ocean	Weather warnings, and then covers boats in Indian Ocean. QSY to SA m/m net at 14316 khz
7045HAM	1130Z	South African Maritime Mobile Net	Indian Ocean & South Atlantic	Continuation of 14316 khz net at 0630Z
14316HAM	1130Z	South Africa Maritime Mobile Net		Twice daily. Alternate frequency 7045 kHz
14297HAM	1900Z	Italian Maritime Mobile Net	Atlantic & S. Atlantic between Africa & Brazil	1900Z between 30 Mar & 20 Oct
14320HAM	2400Z	Southeast Asia Maritime Mobile Net	Southeast Asia	aka Rowdy's Breakfast Show. Moves to 7085 afterward
14316HAM		Tony's Net	Indian Ocean & Red Sea	Tony is a Silent Key. Net may not be in operation.

28-Aug-03

DockSide Radio

1368 Willet Court Punta Gorda, FL 33950 941.661.4498

Nets in Mexico

Mexico Nets

Revised 5/16/2003

Baja Calif. & Mainland Mexico

Daylight Savings Time Schedule (Summer Time)

UTC (GMT)	PDT West Coast US	MDT Cabo, LAP, MZT	CDT PVR,ACA	FREQ kHz Pri/Sec	Upper/Lower Sideband	Net Name
14:00	7:00	8:00	9:00	8116/8119	USB	Amigo
14:00	7:00	8:00	9:00	3968	LSB	Sonrisa
14:30	7:30	8:30	9:30	7294	LSB	Chubasco *
15:00	8:00	9:00	10:00	7260	LSB	Baja CA Maritime
15:00	8:00	9:00	10:00	6212	USB	Picante
19:00	12:00	13:00	14:00	14340	USB	Mañana *
22:00	15:00	16:00	17:00	21402	USB	Pacific Maritime
2:00	19:00	20:00	21:00	4054/4060	USB	Southbound
0:00	17:00	18:00	19:00	3968	LSB	Happy Hour
0:00	17:00	18:00	19:00	14313	USB	Almost 24-hour Mairtime Net coverage

Blue (***Italic Bold***) = Marine SSB (Note: All Marine SSB nets are conducted on USB).

Green (normal type) = HAM (Note: USB is used on 14mHz {20M} and up; LSB is used on 7mHz {40M} & below).

* Net warm-up & co-ordination sessions frequently begin 10-15-min prior to the published net opening time.

Standard Time Schedule (Winter Time)

UTC (GMT)	PDT West Coast US	MDT Cabo, LAP, MZT	CDT PVR,ACA	FREQ kHz Pri/Sec	Upper/Lower Sideband	Net Name
14:00	6:00	7:00	8:00	8116/8119	USB	Amigo
15:30	7:30	8:30	9:30	7294	LSB	Chubasco *
15:00	7:00	8:00	9:00	6212	USB	Picante
14:00	7:00	8:00	9:00	3968	LSB	Sonrisa
16:00	8:00	9:00	10:00	7238	LSB	Baja
19:00	11:00	12:00	13:00	14340	USB	Mañana *
22:00	14:00	15:00	16:00	21402	USB	Pacific Maritime
2:00	18:00	19:00	20:00	4054/4060	USB	Southbound
0:00	16:00	17:00	18:00	3968	LSB	Happy Hour
0:00	16:00	17:00	18:00	14313	USB	Almost 24-hour Mairtime Net coverage

Blue (***Italic Bold***) = Marine SSB (Note: All Marine SSB nets are conducted on USB).

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* Net warm-up & co-ordination sessions frequently begin 10-15-min prior to the published net opening time.

Serving boaters coast to coast.

Broadcast to Caribbean, Mexico, & Latin America

0000-0100 UTC# 5995 6130 7405 9455 9775 11695 13790

0100-0130 UTC# 5995 6130 7405 9455 9775 13790

0130-0200 UTC# 5995 6130 9455

1000-1100 UTC 5745 7370 9590

Broadcast to Pacific (Far East Asia, South Asia, Oceania)

0000-0030 UTC 1575 7215 9890 11760 15185 15290 17740 17820

0100-0300 UTC 7200 7255 9850 11705 11820 15250 15300 17740 17820

0800-1000 UTC 11995 13605 15150

1000-1100 UTC 5985 11720 15250 15455

1100-1130 UTC\$ 1575

1100-1200 UTC 5985 6110 9645 9760 11705 11720 15250 15455

1200-1230 UTC 1143 6110 9645 9760 11705 11715 15250 15455

1230-1300 UTC 6110 9645 9760 11705 11715 15250 15455

1300-1400 UTC 6110 9645 9760 11705 15480

1400-1500 UTC 1143 6110 7125 9645 9760 11705 15395 15480

1500-1600 UTC 7125 9645 15395

1600-1700 UTC 1143 6110 7125 9645 9760 15395

1700-1800 UTC 6110 7125 9645 15395

1700-1800 UTC* 1143 1575 5990 6045 9525 9795 11955 12005 15255

1900-2000 UTC 9525 11870 15180 **1900-2000 UTC*** 9840 11720 11970 15410

2100-2200 UTC 9670 11870 15185 17735 17820

2200-2400 UTC 7215 9770 9890 11760 15185 15290 15305 17735 17820

2230-2400 UTC> 1575

Broadcast to Europe, Middle East, North Africa

0400-0500 UTC 7170 15205

0500-0530 UTC 792 7170 9700 11825 15205

0530-0600 UTC 7170 9700 11825 15205

0600-0630 UTC 792 1197 5995 7170 11825 11930 15205

0630-0700 UTC 792 5995 7170 11825 11930 15205 **0700-1400 UTC** 1197

1400-1500 UTC 1197 15205

1500-1600 UTC 1197 9575 15205

1600-1630 UTC 9575 15205

1630-1700 UTC 1197 9575 15205

1700-1800 UTC 6040 9760 15205

1800-1830 UTC 6040 9760 9885

1830-1900 UTC 1197 6040 9760 9885

1900-1930 UTC 1197 9690 9760 **1900-2000 UTC*** 5965 15205

1930-2000 UTC 9690 9760

2000-2030 UTC 1197 6095 9690 9760

2030-2100 UTC 6095 9690 9760

2100-2200 UTC 1197 6040 6095 9595 9760

Broadcast to Africa

0300-0330 UTC 909 1530 4960 6035 6080 7265 7290 7340 7415 9575 9885

0330-0400 UTC 909 1530 4960 6035 6080 7265 7290 7415 9575 9885

0400-0430 UTC 909 1530 4960 6080 7290 7415 9575 9775 9885

0430-0500 UTC 909 4960 6080 7290 7415 9575 9775

0500-0600 UTC 909 6035 6080 6105 7295 11835 13710

0600-0630 UTC 909 1530 6035 6080 6105 7295 11835 11995 13710

0630-0700 UTC\$ 909 1530 6035 6080 6105 7295 11835 11995 13710

1600-1700 UTC 909 1530 6035 13710 15240 15485 17715 17895

1700-1730 UTC 909 13710 15240 15445 17895

1730-1800 UTC 13710 15240 15445 17895

1730-1800 UTC* 909

1800-1900 UTC 909 6035 11975 13710 15240 15580 17895

1900-2000 UTC 909 4950 6035 7415 11975 13710 15240 15580 17895 **1900-2000 UTC*** 13725

2000-2030 UTC 909 1530 4950 6035 7415 11855 11975 13710 15240 15580 17885 17895

2030-2100 UTC 909 1530 6035 7415 11975 13710 15240 15580 17885 17895

2030-2100 UTC\$ 4950

2100-2200 UTC 909 1530 6035 7415 11975 13710 15240 15580 17895

2200-2230 UTC* 909 1530 6035 7415 11655 11975 13710

All times and dates are in Coordinated Universal Time (UTC), same as Greenwich Mean Time, or Zulu (Z).
Frequencies are in kilohertz (kHz).

All programs/frequencies are daily unless otherwise noted by the following:

* - Monday through Friday

> - Friday and Saturday

- Tuesday through Saturday

\$ - Saturday and Sunday

BBC - British Broadcasting Corporation

Central/South America

BAHAMAS - 1st Sunday in April to last Sunday in October.
 BERMUDA - 1st Sunday in April to last Sunday in October.
 BRAZIL - 2nd Sunday in October to 3rd Sunday in February.
 CHILE- 2nd Saturday in October to 2nd Saturday in March.
 CUBA- Last Sunday in March to last Sunday in October.
 FALKLAND ISLANDS - 2nd Saturday in September to 3rd Saturday in April.
 GUANTANAMO BAY NAVAL STATION - 1st Sunday in April to last Sunday in October.
 MEXICO - 1st Sunday in April to last Saturday in October.
 PARAGUAY- 1 October to 1 April.
 TURKS and CAICOS ISLANDS - Last Sunday in April to last Sunday in October.

Pacific/Australasia/Antarctica

AUSTRALIA, except states in WESTERN AUSTRALIA, QUEENSLAND, and NORTHERN TERRITORY -
 4th Sunday of October until the 1st Sunday of March
 BRITISH INDIAN OCEAN TERRITORY, DIEGO GARCIA NSF - Year round
 FIJI - 1 November to 28 February
 NEW ZEALAND - 1st Sunday of October until 3rd Sunday of March
 EASTER ISLAND - 2nd Saturday in October to 2nd Saturday in March
 SRI LANKA - Year round
 VANUATU - 4th Saturday in September to 4th Saturday in March.

United States

Daylight saving time is in effect from 0200 local time the first Sunday in April to 0200 local time the last Sunday in October.
 CANADA and all US CONTERMINOUS STATES observe daylight saving time, except ARIZONA and that portion of INDIANA in the EASTERN STANDARD TIME ZONE.
 MEXICO observes daylight saving time the first Sunday in April to the last Saturday in October.

Medical stations to call for help

You find yourself in the middle of the ocean and want to consult a Medical Doctor, a dentist or a Vet, for your pet?

Rest assured, a specialized team is available to you, all hams, all with experience in blue water sailing:

N7RHH - Dr. Michael H. Morrell (May not be able to contact)

E-Mail: n7rhh@winlink.org

Radio : N7RHH (for WL2K users)

- Mike is an orthopaedic surgeon and he and his wife Nancy are sailing s/v 'Serenity', presently in Georgia.

Check latest 'CMM' bulletin for updated position.

NX2T - Charles L. Starke MD, FACP

E-Mail: starke@cloud9.net or cstarke@alumni.princeton.edu

Homepage: www.drstarke.com

Office phone: 914-762-4460

Office fax: 914-762-4478

Captain: s/y Dawnpiper, Trintella 45, built 1985.

- Charles is an internist (specialist in adult diseases)

with a lot of emergency experience including ship's

doctor on 34 cruises, including two trips to each Antarctica and the Arctic.

He holds a 100 ton Captain's license (sail and power), and able seamen under sail, enjoys ocean sailing, and has taken part in numerous races and ocean cruises, including the Rolex 2005 Transatlantic Race.

A cd of health and emergency information for use at sea is available at

www.cdbaby.com/cd/cls

OE4RYC - Dr. Rudolf Wendrinsky(I was unable to contact him)

Radio: OE4RYC @ OE4XBU.AUT.EU

E-Mail: oe4ryc@aon.at

- Rudi is an orthopaedic surgeon in a hospital in Austria.

He is SysOp of one of the major WL2K MBO's in Europe, enjoys sailing on a lake near his home and in the Med. during the summer holidays.

W5AA - Dr. Richard J. Brown(I was unable to contact him)

E-Mail: rjbro@bellsouth.net

- Dick is a doctor of Veterinary Medicine.

Board certified in pathology.

Also a USAF pilot as well as veterinarian, C-119 and C-130 Clinician for the Chipanzees that the USAF and NASA put in space.

Worked in aviation/space medicine and tropical medicine in Florida, Taipei and Jakarta.

Belongs to a club which owns a sail boat used for charters out of Quepos, Costa Rica.

You can contact any of the Doctors listed above, all of whom have general medical qualification as well as specialties.

Direct your request for medical assistance to either the listed E-Mail Address, using the Radio-E-Mail service, or to the Radio Address.

Make the subject line 'Medical' or 'Urgent Medical'.

State in your message: sex of the patient, age, temperature, and pulse and complaints/symptoms, as detailed as possible.

Also indicate the type of International Medical Chest, if any.

The land based physicians may well consult colleagues to get the full spectrum of opinions and ideas.

This service is free of charge and messages will be treated with the highest possible confidentiality.

Disclaimers: Each of the physicians provides advice as a public service and "good Samaritan" and they accept no liability for the outcome of any advice given.

ZS5S accepts no liability or responsibility for the accuracy of information passed between users.

Joost, ZS5S (ex PA0LO/MM)

FM Radio for French Polynesia & Samoa

French poly- radio

Info	Call Sign	Frequency	City	Format	School
	Radio 1 (La Grande Radio)	98.7 FM	Papeete, Tahiti	Unknown Format	
	Star FM			Unknown Format	
	Tiare FM	104.2/105.5 FM	Papeete, Tahiti	Unknown Format	

Samoa

Info	Call Sign	Frequency	City	Format	School
 	KSBS	92.1 FM	Pago Pago	Unknown Format	

AMIGO NET PREAMBLE

Is this frequency in use? Good Morning. This is _____(vessel) _____(call sign) with _____ aboard. We're currently located in/at _____. Our weather is _____. This is the Amigo Net for (date) _____. Before we open the net, is there any **emergency, medical, or priority traffic? Any relays for emergency, medical or priority traffic?**

This is the Amigo Net operating on this frequency, 8122.0 KHz USB. We may move to other frequencies (8116, 8119, or 8125) if needed for clearer communication. We meet daily at this time, 1400Z. Order of business is **Vessels Underway, Weather, Announcements, and then general check-ins and general traffic.** This is a controlled net – all contacts are to go through Net Control and Today current, that's _____(vessel) _____(call sign). On initial contact, give your boat name only. Relays, please identify yourself – this helps me pick the best relay if there's more than one. In marinas or crowded anchorages e-mailing on any frequency at high power can interfere with the net.

First order of business is **Vessels Underway.** Come initially with your boat name only. If I don't repeat your name, assume that I didn't hear you. When I have a working list, I'll call each boat in turn. At that time, come with your **boat name, call sign, crew names, location, weather, and advise if you have traffic.** If your traffic might last longer than 30 seconds, or does not pertain to ship's business or safety, you must move off to another frequency. If you do move off frequency and fail to make contact, return to the net and **say RECHECK with your vessel name** and we'll assist you in reconnecting. Vessels underway **ONLY**, please come back now.

Recap the name of vessel underway and ask if anyone wishes to contact this vessel.

Next order of business is weather. **SUMMER PASSAGE, this is** _____(vessel) _____(call sign).

(After Don has Completed His Report)

Does anyone have questions or require a fill concerning the weather forecast? Remember, for requests for more specific information or personal routing issues beyond what has been presented in the forecast, please talk directly to Don at the times and frequencies that he specifically listens in on for this purpose. If you don't have these, please ask for them **AFTER THIS NET.** He monitors each frequency for only about 10 minutes. You must call as he only listens – he does not announce his presence. **Many thanks as always to Don on Summer Passage.**

For ID purposes this is _____(vessel) _____(call sign), Amigo Net Control

Do we have any **messages of general interest or QST's** for the Amigo Net?

Let's move on to **General Check-ins and general traffic for the net.** Again, I'll take a list of boat names. Call with your boat name only. If I don't repeat your name, assume I did not hear you and come again. When I have a working list, I'll call each boat in turn. At that time, come with **your boat name, call sign, crew names, location, any significant weather and advise if you have any traffic.** If your traffic might last longer than 30 seconds or does not pertain to ship's business or safety, you must move to an alternate frequency for your contact. Again, those frequencies I mentioned earlier should be used for your traffic. If you do move off frequency and fail to make contact, return to the net, call **RECHECK with your vessel name** and we will assist you in reconnecting. General check-ins, please come back now.

CLOSING THE NET

Number of check-ins: _____ Vessels underway: _____ Traffic passed _____

Sign off: This is _____(vessel) _____(call sign). Many thanks as always to Don on Summer Passage and to all the relays and volunteers out there for their assistance this morning. The Amigo net is now closed. This frequency is now clear (or if a vessel asked for priority call them and tell them that they may proceed with their traffic.)

SOUTHBOUND NET PREAMABLE

1. Is this frequency in use? Is this frequency in use? Good evening, everyone. Welcome to the South Bound Net for [DAY, DATE]. This is [NAME OF NET CONTROL FOLLOWED BY NAMES OF PEOPLE ABOARD] aboard [BOAT], [BOAT CALL SIGN]. We are located in [WHEREVER AND GIVE A LITTLE WEATHER]. I will be your host for the South Bound Net tonight. Before opening the net, let's all listen for a moment for any emergency or priority traffic. Are there any relays for emergency or priority traffic? With nothing heard, let's proceed.
2. The South Bound Net meets nightly at 0045 Zulu and operates on this frequency, 6516 kilohertz or 6D with an alternate as directed by net control. The net manager is Anita on Liberty Call II. Any comments about the net should be directed to her. The South Bound Net is a controlled net, which simply means that all contacts go through net control. Please do not transmit until asked to do so. When first coming to the net, come with your boat name only. If I do not recognize you, assume that I did not hear you and call again. I always welcome relays to help me out.
3. The order of business tonight will be: vessels underway, announcements or QSTs, general check in's and traffic. We will break at 0100 Zulu for Don Anderson of Summer Passage Radio.
4. Let's begin with vessels underway. Please tell us the persons aboard, your lat and long, your destination and give us a brief synopsis and let me know if you have traffic. If you don't say so, I will assume you do not. Any vessels underway within the sound of my voice wishing to check in with the South Bound Net, please call now...Any relays? [Ask for incoming traffic for each vessel]
5. [Just before 0100] It's almost time for Summer Passage. If you have not tuned up yet, please do so now. [Pause] Summer Passage, Summer Passage....
6. [After his report] Don, thank you very much and please stand by for weather fills...I will ask now if anyone did not hear you well. I ask that callers please refrain from asking personal routing questions. If you have any such questions, remember that Don monitors 12C (that's 12359) at 1630 and 16C (16534) at 1700 and 0015. Also those vessels heading to Central America, please listen to the Pan Pacific net on 8143 at 1400; their Don does weather at 1415. So, let's proceed. Did anyone not copy the weather and would like a repeat? please call now...

7. Now we move to general announcements or QSTs. If anyone has an item of interest for the Net, please call now. Any relays?
8. Let's go to general check-ins. Please come with your boat name only first. I'll take a short list and then go back and then do individual check in's. When coming to the net, please come with your boat name, call sign, persons on board, location, and let me know if you have traffic tonight. Please consider moving to an alternate frequency if your traffic will be much longer than 30 seconds. If you want to return to the net, please do so by saying "recheck" and your boat name and wait to be recognized. Anyone wishing to check into the South Bound Net, please call now. [Acknowledge each check in as you hear them.] Okay, let's work this list... [Remember to ask for incoming traffic for groups of boats, not individually.]
Do we have anyone else for the South Bound Net? Please call now?
Do we have any relays?
9. Last call, last call for anyone having anything for the South Bound Net, please call now.
10. Thanks to everyone for participating. We had about ___check-ins and passed about ____ pieces of traffic. Thanks for all the relay help and buenas noches. This is [BOAT, CALL SIGN]. The South Bound Net is now closed, and this frequency is clear.

Tips for net controllers:

- * *Power up. Make sure your batteries are fully charged so that you have adequate power for your transmitter.*
- * *Speak up. Speak as if you are in a crowded room: loudly, clearly and directly into the mike.*
- * *Use relays. Ask for relays continually and if you are having trouble hearing or being heard, ask for another boat to take the weather from Summer Passage Radio or ask another boat to put out calls for check-in's - or even ask someone to take over the net if you are having too much hearing. Another good suggestion is to ask for a radio check a couple of minutes in advance to see how far you are transmitting and to see if you can identify boats that might help relay. And, this probably goes without saying, but please remember to help your fellow net controls when they need it.*
- * *Familiarize yourself with Mexican geography. Doing so will help you in two primary ways: with understanding Don's weather (he uses certain locations frequently) and with helping callers get their weather.*
- * *Set up a system for taking calls and for taking the weather. (Attached are samples you might want to use as is or adapt.)*
- * *Regarding weather, I have added to the preamble Don's time and frequencies when he answers specific questions. We to stop personal weather routing questions. If someone says "I'm going from Cabo to Muertos," the net control should either repeat the southern sea forecast (if that seems appropriate), or tell them to contact Don on his watch schedule. This will keep things moving. Also, I have changed wording so that we don't ask for weather fills anymore.*
- * *Be prepared for emergency situations. The basic information you need to get in order to pass on either to the U.S. Coast Guard or to Don of Summer Passage Radio is:*
 - Name of vessel and of caller*
 - Location and destination*

Nature of problem

Number of persons aboard

*Description of boat: type (power or sail,
sloop or ketch, etc.),*

length, color, any distinguishing characteristics

** Have emergency contact numbers available. (Attached is a resource list.)*

** And lastly, remember Let the Net controllers know that they should keep the net moving. Though some controllers might like chatting, they should understand that their responsibility is to pass the most information and traffic as efficiently as possible and in the least amount of time. Tips for net controllers:*

** Power up. Make sure your batteries are fully charged so that you have adequate power for your transmitter.*

** Speak up. Speak as if you are in a crowded room: loudly, clearly and directly into the mike.*

** Use relays. Ask for relays continually and if you are having trouble hearing or being heard, ask for another boat to take the weather from Summer Passage Radio or ask another boat to put out calls for check-in's - or even ask someone to take over the net if you are having too much hearing. Another good suggestion is to ask for a radio check a couple of minutes in advance to see how far you are transmitting and to see if you can identify boats that might help relay. And, this probably goes without saying, but please remember to help your fellow net controls when they need it.*

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CHAPTER 5- VISAS & COUNTRY PROFILES

CHAPTER OVERVIEW:

VISAS

- Foreign Entry Requirements
- Blank Application for a short stay (Schengen) visa
- Long Term Stay Visa for French Polynesia
- (Long stay visa available <http://www.info-france-usa.org/visitingfrance/usvisas.asp>)
- Sample sailing itinerary letter
- Sample letter from the Coconut Milk Run doc. for extending your visa
- Email letter from Past Cruisers
- PYS - Polynesia Yacht Services & Rates for 2009

COUNTRY PROFILES

- Receiving Noonsite Text Docs Via Email
- South Pacific Logistics 2/07 from Noonsite
- Country Profiles from Noonsite
 - Tahiti Nui (French Polynesia)
 - Cook Islands
 - American & Western Samoa
 - Tonga
 - Fiji
 - New Zealand
 - Australia
- Gifts & Trading Ideas from the Coconut Milk Run doc.
- First Timers Guide to New Zealand from the Coconut Milk Run doc.
- Tahiti Ocean- A service agency for large vessels
- Royal Cruising Club Foreign Port Information 2002

Foreign Entry Requirements for the South Pacific Islands

Valid as of December 2008

http://travel.state.gov/travel/tips/brochures/brochures_1229.html#f

*Some countries require that your U.S. passport be valid at least six months or longer beyond the dates of your trip. Check with the Embassy or Consulate of the country you plan to visit for their requirements.

AUSTRALIA - *Passport, Electronic Travel Authority (ETA) or non-electronic label visa, proof of onward or return ticket, and sufficient funds are required. An ETA or non-electronic label visa is required for tourist or business stays of up to 3 months. An ETA is an electronically stored authority to travel to Australia and can be obtained online at www.ETA.immi.gov.au or through participating travel agencies or airlines. Minors not accompanied by a parent or traveling with only one parent need notarized written parental consent from the absent parent(s). HIV test required for permanent resident visa for applicants age 15 and older; tests taken in the U.S. are acceptable. More information about entry requirements to Australia (including for longer stays) is available on the Embassy of Australia's website at <http://www.austemb.org>. Alternatively, visa inquiries may be directed to the Australian Visa Information Service on toll-free 1-888-990-8888.

COOK ISLANDS - *Passport, proof of sufficient funds, and onward/return ticket required. Visa not needed for visit up to 31 days. For longer stays and additional information, contact the Consulate for the Cook Islands, Kamehameha Schools, #16, Kapalama Heights, Honolulu, HI 96817 (808/847-6377).

ECUADOR (including the Galapagos Islands) - *Passport with minimum validity of six months required. Visa not required for a stay of up to 90 days. For more information, contact the Embassy of Ecuador, 2535 15th St., NW, Washington, DC 20009 (202/234-7166) or nearest Consulate General: CA (323/658-6020 or 415/957-5921/22), FL (305/539-8214/15), IL (312/329-0266), LA (504/523-3229), MA (617/738-9465/68), NJ (201/985-2959/60), NY (212/808-0211/12), or TX (713/572-8731).

FIJI - *Passport with minimum validity of 3 months remaining, proof of sufficient funds, and onward/return ticket required. Visa not required for stay of up to 4 months. All visitors over age 12 are required to pay \$25 departure tax (tax must be paid in Fijian currency). HIV testing required for stays exceeding 6 months. For more information, contact the Embassy of the Republic of the Fiji Islands, 2233 Wisconsin Ave., NW, #240, Washington, DC 20007 (202/337-8320). Internet: www.fijiembassy.org

FRENCH POLYNESIA - (includes Society Islands, French Southern and Antarctic Lands, Tuamotu, Gambier, French Austral, Marquesas, Kerguelen, Crozet, New Caledonia, Tahiti, Wallis and Furtuna Islands.) *Passport required. Visa not required for visit of up to 1 month. For stays between 1 and 3 months visa required. Visa requires 1 application for short stay (Schengen) visa, valid passport and photocopy, onward/return ticket (or sailing itinerary), proof of accommodation, proof of valid health/accident insurance and 1 copy, proof of sufficient funds (last 2 bank statements and 1 copy), 2 photographs, and appropriate fee. Business travelers require a letter from employer guaranteeing travel expenses. Minors traveling alone must have notarized parental authorization signed by both parents or by non-accompanying parent. For additional information, contact the Consulate General of France (202/944-6200). Internet: www.info-france-usa.org

Note: Visa extensions are solely at the discretion of the French High Commissioner and in 2008, visa extensions were not granted to US citizen puddle jumpers. Canadian and other NON US citizens were granted extensions.

KIRIBATI (formerly Gilbert Islands) - *Passport (with minimum validity of six months), onward/return ticket, proof of sufficient funds, and visa required. Visa requires 1 application form and a visa fee of \$25 for a single-entry visa or \$40 for a multiple-entry visa. For more information, contact the Consulate of the Republic of Kiribati, 95 Nakolo Place, Room 265, Honolulu, HI 96819 (808/834-7604).

MARSHALL ISLANDS, REPUBLIC OF THE - Passport, sufficient funds for stay, and onward/return ticket required for stay of up to 30 days (extendible up to 90 days from date of entry). Departure fee \$15. Health certificate required if arriving from infected areas. HIV test may be required for visits over 30 days, U.S. test accepted. Check information with the Embassy of the Marshall Islands, 2433 Massachusetts Ave., NW, Washington, DC 20008 (202/234-5414) or Permanent Mission to the U.N., 220 East 42nd St., New York, NY 10017 (212/983-3040) or the Consulate General in Hawaii (808/545-7767). Internet: www.rmiembassyus.org

NEW CALEDONIA - (See French Polynesia.)

NEW ZEALAND - *Passport and arrival card (to be completed upon arrival) required. Visa not required for tourist or business meeting or consultations stay of up to 3 months, must have onward/return ticket, visa for next destination and proof of sufficient funds. Visa requires 1 visa application, 1 recent passport photo, proof of sufficient funds, and onward/return ticket. For additional information, contact the Embassy of New Zealand, 37 Observatory Circle, NW, Washington, DC 20008 (202/328-4800) or the Consulate General in Los Angeles (310/566-6555). Internet: <http://www.nzembassy.com/usa>

NIUE - *Passport, onward/return ticket, and confirmed hotel accommodations required. Visa not required for stay of up to 30 days. For more information, consult the Embassy of New Zealand (202/328-4800).

SAMOA - *Passport and onward/return ticket required. Visa not required for stay of up to 60 days. Departure tax is \$30. Anyone applying for work, study or staying more than 12 months must submit a medical report (may include HIV testing). For more information, contact the Independent State of Samoa Embassy, 820 2nd Ave., Suite 800, New York, NY (212/599-6196) or the Honorary Consul in Hawaii (808/677-7197).

SOLOMON ISLANDS - *Passport, onward/return ticket, and proof of sufficient funds required. Visitors permit issued on arrival for stay of up to 3 months in a 1-year period. For further information, consult Solomon Islands Mission to the U.N., 820 2nd Ave., Suite 800A, New York, NY 10017 (212/599-6192/93). Internet: www.commerce.gov.sb

TONGA - *Passport and onward/return ticket required. Visa not required for stay of up to 30 days. HIV testing required for stays exceeding 6 months. Tonga collects a departure tax. For additional information, consult the Consulate General of Tonga, 360 Post St., Suite 604, San Francisco, CA 94108 (415/781-0365).

TUVALU - *Passport, onward/return ticket, and proof of sufficient funds required. Visitor permits valid for up to three months are issued upon arrival. Visitors permit issued on arrival. For more information, consult British Embassy (202/588-7800).

VANUATU - *Passport and onward/return ticket required. Visa not required for stay of up to 30 days. Visa requires one blank page in passport. For further information, consult the Vanuatu Mission to the UN (212/593-0144 or 0215). Internet: www.travelchinaguide.com/embassy/vanuatu

WESTERN SAMOA - (See Samoa)

French Visa Application from Mexico

Our personal experience (s/v Sol Searcher), as **U.S. citizens** applying for a **90-day visa** prior to sailing to French Polynesia, went as follows. The “official” French Consulate is in Mexico City, but they allowed us to go to their office at 484 Lopez Mateos – Norte, No.1, Guadalajara (only a 5 hour drive from Puerto Vallarta). We were given the following list of documentation to be presented:

- Original and 1 copy of the Application for Schengen Visa [application form](#) .
- Original and 1 copy of your U.S. passport
- A copy of your current Mexican Visa or FM-3.
- 2 passport sized pictures: 3.5cm wide by 4.5cm high. Picture of face must be 2.3cm ear to ear, and 3.0cm from chin to top of head.
- Itinerary for your time in French Polynesia.
- Copies of official boat documentation, including Mexican boat importation document.
- Bank statements for 2 months confirming financial capability.
- Proof of health insurance.

Their representative in Guadalajara reviewed all of our documents, charged us \$300 pesos and sent everything (including your original U.S. passport) to Mexico City by DHL. She also had us sign an authorization to charge our credit card for the fees that will be assessed in Mexico City. Your original passport and French tourist Visa will be returned by DHL either to their Guadalajara office or to an address of your choice.

Other alternatives are to apply at the French Consulate in your home state in the U.S., if you fly home prior to departing from Mexico. Or, you can wait to get to the Marquesas (or wherever your first landfall is) and use Polynesia Yacht Services (see more information below). Or you can just go there, get the first 30-day tourist visa and then work it out!

Other information, as of January 2006, from the website below:

<http://www.info-france-usa.org/visitingfrance/usvisas.asp>

The Consular Administration has full authority to appreciate and request more documents than those listed on this page, please visit the website of [the nearest Consulate](#) to verify the requirements and obtain the amount of the visa fee before sending or bringing in your application.

SHORT STAY VISA

If you are a U.S. citizen and would like to travel to France or an Overseas Department for a short stay (up to 90 days)

You **DO NOT** need visa (only a valid passport), except for: Holders of diplomatic or official passports on mission, Crew members & Journalists on assignment

The applicants above must submit 1 [application form](#) for a short stay visa, a valid passport + 1 photocopy, a cover letter from the appropriate U.S. agency, embassy or from their company + 1 passport size photo.

Diplomatic or official passport holders must apply at the Consulate General of France in Washington DC, New York, Los Angeles or San Francisco depending on their jurisdiction.

- Artists, researchers and **anyone having a paid activity** in France (please refer to the section on [work visas](#))
- students (please refer to the section on [student visas](#)).
- Short stay and long term Visa Applications are downloadable from the above website.

LONG STAY VISA

If you are a U.S. citizen and would like to travel to France, Monaco, an Overseas Department ([DOM](#)) or [Territory](#) or New Caledonia for a long stay (over 90 days)

You **DO** need a visa.

Please submit:

- a passport signed and valid 3 months after the last day of stay + 3 photocopies (The consulate will not keep the passport, only the copies)
- 4 [long stay visa application forms](#) signed and legibly filled out.
- 5 recent passport-size photographs .
- Financial guarantee such as:
 - a formal letter of reference from the applicant's bank showing account numbers and balances or recent bank, savings or brokerage account statements + 3 copies
 - for people wishing to retire in France, proof of sufficient income: pension, dividends, savings, bond and brokerage account statements + 3 copies
- Proof of medical insurance with coverage valid in France + 3 copies
- Police clearance: document obtained from the Police Department of the place of residence in the United States stating that the applicant has no criminal record + 3 copies
- Letter from applicant certifying that he/she will not have any paid activity in France
- Visa fee

<http://www.info-france-usa.org/visitingfrance/usvisas.asp>

website has form needed for long stay. It will also be uploaded to puddle jump website

SAMPLE SAILING ITINERARY LETTER

DATE

Consulate General of France in XXXXX

ADDRESS

CITY, STATE

Attention: Visa Department

The intention of this letter is to specify the itinerary through French Polynesia for CREW MEMBERS aboard their personal sailboat, YOUR BOAT NAME. Please note that dates are approximate and are subject to wind and weather conditions at the time of departure and arrival.

<u>DESTINATION</u>	<u>VIA</u>	<u>ESTIMATED ARRIVAL DATE</u>	<u>ESTIMATED DEPARTURE DATE</u>
Marquesas	Sail	XXXXXXX	XXXXXXX
Tuamotus	Sail	XXXXXXX	XXXXXXX
Tahiti	Sail	XXXXXXX	XXXXXXX

Sincerely,

CREW SIGNATURES

Letters From Past Cruisers About FP Visas

Checking in at French Polynesia

Some time around the spring of 2005, we were hearing rumors about mysterious check in procedures in French Polynesia. We were quite confused and some would be puddle jumpers spent considerable effort to get visas approved before departure. San Francisco French Consulate turned out to be the most user-friendly and did approve 90-day visas without much fuss (upon providing financial documents, etc.). Among various scenarios, we were also told that check in procedures at French Polynesia had been different every year. That may well be true still, so take what I am writing here for what it is worth. I am only reviewing what I have gathered to be the situation for puddle jump 2005.

Upon arrival in the Marquesas, either at HivaOa or at Nuka Hiva, most boats checked in on their own. At Nuka Hiva (Taiohae Harbor), there is the option of using the Polynesia Yacht Services (PYS) which answers to Channel 17 on the VHF. For those who checked in on their own, all had to pay the bond upon arrival which is equivalent to the cost of one way tickets back to their home country for everyone on board; whether one had a visa or not did not make any difference. As it turned out, everyone had to pay the bond; the few that didn't pay the bond initially upon arrival had to pay when they arrived in Tahiti. For a boat with a family of four, that could add up to several thousand dollars. The bank also charges a fee equivalent to around US\$40 per person for processing the bond. If the funds are in US dollars, they had to be exchanged to French Polynesian Francs before paying the bond. One family was quite stressed out because the ATM machine had a daily limit well below what they needed for the bond; they had to go to the bank ATM multiple times over several days to gather enough money for the bond. (Most ATM machines we encountered allowed only one try at the ATM each day with a lower limit than our usual daily amount). We found out later that our Wells Fargo Express ATM card is also a debit card and we could go

inside the bank with a photo ID and draw funds directly from our checking account at much higher limits, but we could only use the card once each day. (I am certain other banks have similar type of cards). The biggest shock of all for those who paid the bond (when the US dollar was at an all time low) was when they received the money back upon checking out after the French Polynesian Franc had devalued. The bond was paid in Francs and returned in Francs; depending on the timing and the exchange rate, it represented a substantial loss. One boat with three on board told me that they lost US\$850 in the process. Of course the devaluation presumably won't happen every year, but there is always the risk of currency fluctuation which can work in either direction.

We used the services of PYS which provided us with a letter guaranteeing repatriation in lieu of the bond. We didn't have a visa upon arrival, but PYS got us the 90-day visa extension right away. That way we didn't have the uncertainty of getting a 30-day visa then requesting an extension when we arrived in Tahiti. Some boats were able to get a 90-day visa on their own upon arrival. It seems the big difference is the luck of the draw; if you get a French Gendarme, he is likely to be difficult. If you get a Marquesan Gendarme, he is likely to be very friendly and in most cases approve a 90-day visa. I got this French Gendarme who was a royal pain in the neck, who would only approve a 30-day visa. I had to call the PYS agent who went back to get the visa extended in about half an hour. This was the only time I had to deal with the gendarme until the checking out at Bora Bora (the official entry/clearance was done at Papeete, but we all had to informally check out at Bora Bora as we departed French Polynesia). We did stop by at the Gendarme with our passports on some other Marquesan Islands, but that was more a courtesy than a requirement. All were expected to check in and out formally at Papeete, but PYS did that for us. At the time, it seemed like we paid a lot of money for some thing that we could have done by ourselves. However, some of the services we received on top of not having to pay the bond made me feel that we did OK.

Mail forwarding by PYS was very reliable. We had boat parts shipped to Papeete in care of the PYS agent in Tahiti. The shipping was delayed in California, but the agent made sure the package was forwarded to us in Moorea and delivered to our boat at the anchorage in Cook's Bay. We also had prescription medicines shipped from US to Papeete, which inexplicably took two months to arrive; the agent forwarded the medicine to us by Tahiti Air to Bora Bora just days before we were departing French Polynesia. The medicine was something we couldn't do without and receiving it was very important to us. We also needed a fiberglass door made for the boat to replace the one that was washed away by a big wave somewhere around Tuamotus. The labor cost in Tahiti was prohibitive (and outrageous), but the agent found a cruiser in Moorea to do the job at a fair price. The PYS fees we paid in the Marquesas at check in covered all the official paper work in Papeete, but I am not sure if it included the mail forwarding. For services other than checking in and out at Papeete such as getting someone to carry out repairs, etc., the agent in Papeete will charge an additional minimum fee. That needs to be

discussed ahead of time to avoid any confusion. The services included a separate fee for each of the following: 1. checking in/out, 2. bond exemption letter, 3. visa extension, and 4. papers for duty-free fuel. It amounted to an equivalent of US\$50 to US\$70 per person for each of the items, but it may be best for PYS to provide the current fee schedule and the variety of other services they provide. I don't want to provide any misinformation regarding fees. Laurent of PYS may be reached by email at <pys@mail.pf> and FAX (689) 561879.

Finally, I would be amiss if I do not point out that the PYS agents are not to be confused with "Papermen" in Mexico. The PYS agents are professionals and are genuinely trying to help. The new PYS agent in Nuka Hiva, Alain, has been a cruiser for 30 years. He knows about cruising and has a catamaran in the harbor for charter. He noticed that I was reluctant to back my catamaran to this concrete wall (with a lot of surge) to get fuel; he came on the boat and showed me how easy it was although he said that was not part of the service, just a personal favor. I certainly appreciated the lesson and the fact that he cared. We subsequently were in another anchorage with him by chance and had a fabulous picnic with him and his wife.

We like them and consider them friends. We feel very fortunate to have met someone like Alain at landfall; it certainly set an upbeat tone for us for the rest of the cruise. Laurent, the PYS agent in Papeete, is also very willing to help although he has not been a cruiser.

Howard and Judy Wang;Catamaran Laelia, Ventura, CA; Kennex 420

POLYNESIA YACHT SERVICES
Registered yacht agent in French Polynesia
CONTACT: Laurent Bernaert

***Shipping address : C/O Marina Taina ,Pk 9 Punaauia
 TAHITI / FRENCH POLYNESIA***

***Mailing address : Po Box 3112 Temae
 98728 MOOREA
 FRENCH POLYNESIA***

Ph/Fax : (689) 56 18 79 Gsm: (689) 77 12 30

***E-mail : pys@mail.pf
yachtservices@mail.pf***

Dear Yachters,

Ia Orana and welcome in French Polynesia ...As registered yacht agent, PYS will be happy to assist you during your stay in our waters. You will find below main services that we use to provide:

- **Official formalities** (entrance, inter-islands and departure clearances), **Customs and Immigration clearances, consultancy in regulations.**
- **Bond exemption letters** for non EEC crew members (avoiding bank deposit).
- **Duty free fuel formalities** (cruising and export duty free fuel).
- **Advanced Port, marina, shipyard reservation** (in Tahiti or Leeward Islands).
- **Laundry, refill gas bottles**
- **Customs broker service and transportation for import / export orders.** (duty free as ship's spares in transit). **Forwarding to outer islands.**
- **Maintenance and repairs** (reliable network with English speakers. Sail repairs, carpentry, reefer and mechanic engineering, electronic, electricity, welding, watermaker, A/C, computer technician...).
- **Local GSM SIM Cards with itemized billings, fax services, internet WIFI,**
- **Boat cleaning and underwater works....**
- **Parts and ship's chandlery at reduced price**

- Nautical charts for French Polynesia, Cook, Tonga, Fiji,
- Local and international Air tickets, travel arrangements.

Reduced tariffs :

- * Car rental (10 to 15% with HERTZ),
- * Shipyard (5% with Raiatea Carenage Services)
- * Hotel accomodations (up to 25%) with SOFITEL and INTERCONTINENTAL resorts
- * Dive centers (10%) Contact us for quote and booking

Service Fees 2009 :

1) Official Formalities / Immigration, Customs, Papeete Port (Minimum contract)

<i>Official clearances :</i>	<i>7.000 Cfp per clearance (In, inter islands, departure)</i>
<i>Bond exemption letter:</i>	<i>7.000 Cfp per passport (For non EEC Citizens)</i>
<i>Duty free fuel formalities</i>	<i>7.000 Cfp once</i>
<i>Visa extension (up to 90 days)</i>	<i>5.000 Cfp per passport</i>

2) All other services

<i>Services fees :</i>	<i>3.500 Cfp per hour OR</i>
<i>Weekly lumpsum:</i>	<i>15.000 Cfp per week</i>
<i>Buying commission:</i>	<i>10% on goods and services provided</i>
<i>VAT:</i>	<i>10% local tax has to be added on services fees</i>

POLYNESIA YACHT SERVICES
CONTACT : Laurent Bernaert

**Shipping address : C/O Marina Taina ,Pk 9 Punaauia
TAHITI / FRENCH POLYNESIA**

**Mailing address : Po Box 3112 Temae
98728 MOOREA
FRENCH POLYNESIA**

Ph/Fax : (689) 56 18 79 Gsm: (689) 77 12 30

**E-mail : pys@mail.pf
yachtservices@mail.pf**

Our references : SY Ruling Angel, SY Bravado, SY Medusa, SY Integrity, SY Swan Lake, SY Van Diemen, SY Sea Bear, SY Scarlet Muse, SY Glass Slipper, SY Sarava, SY Cosmos, SY Fruity Fruits, SY Emerald, SY Emerald Jane, SY Echoes, SY Senoiki, SY Laelia, SY R.Tucker Thompson, SY Indra, SY Chardonnay II, SY Jamboree, SY Safari, SY Redwood Coast II, SY Kalevala, SY Medusa, SY R. Factor, MV Searcher, MV Done dreamin, MV Shorleave, MV Gentle Wind, MV Ice Dancer ...

RECEIVING NOONSITE TEXT DOCS VIA EMAIL

Welcome to the system that allows you to retrieve any information on Noonsite as plain text documents via email, without the need for web access. You can request any page if you know the address, by sending 'get' followed by the page to text@noonsite.com, however there are some additional features for retrieving country pages.

In order to receive the list of Noonsite countries, send an email with the following message:

To: text@noonsite.com

Subject: (leave blank)

get Countries

This will return an alphabetical list of countries. Choose the country you are interested in, and send an email as follows:

> To: text@noonsite.com

> Subject: (leave blank)

>

> get CanaryIslands

>

> You will next receive an email with the index to that country. To

assist downloading over a slow link, all country and port pages are divided where possible into subsections less than 5 kilobytes.

The Country Index will indicate the size of the whole Country, as well as the size of each subsection. For example, the Canary Islands Index:

> CanaryIslands/All (8.2kB)

> CanaryIslands/Profile (3.3kB)

> CanaryIslands/Formalities (3.2kB)

> CanaryIslands/LasPalmasdeGranCanaria/All (20.5kB)

> CanaryIslands/LasPalmasdeGranCanaria/Profile (2.7kB)

> CanaryIslands/LasPalmasdeGranCanaria/RepairFacilities (4.2kB)

> Countries and ports of less than 5 kilobytes will not be divided, and

a request can be made for the whole document (eg get CanaryIslands/Arrecife/All). If a page is subdivided, then getting '/All' is identical to requesting each subsection listed below it in turn.

>

> It is possible to request up to 10 pages in one email, by placing

Multiple 'gets' in a document, one on each line. For example:

>

> To: text@noonsite.com

> Subject: (leave blank)

>

> get CanaryIslands/Profile

> get CanaryIslands/Formalities

> get CanaryIslands/LasPalmasdeGranCanaria/RepairFacilities

>

> If you have any problems, we can be contacted at help@noonsite.com. A crude attempt at filtering spam means any messages over 4kB are silently dropped. This is an experimental service, so any feedback will be gratefully received.

South Pacific Logistics from Noonsite

As many yachts that are currently cruising in the Eastern Caribbean will soon be heading for the Panama Canal and the South Pacific, the enclosed practical information may be of use when planning such a voyage.

Jimmy Cornell.
Marinas

French Polynesia

Taina Marina, Tahiti: marina@mail.pf
Chantier Naval Raiatea: raiatea.marine@mail.pf
Raiatea Carenage: raiateacarenage@mail.pf

Niue

Niue Yacht Club manages moorings for visiting yachts yachtclub@niue.nu

Tonga

Moorings for visitors in Neiafu harbour are available from:

Moorings : moorings.tonga@kalianet.to
Sailing Safaris : sailingsafaris@kalianet.to

Fiji

Musket Cove Marina: mcy@musketcovefiji.com
Vuda Point Marina: vudamarina@connect.com.fj
Tradewinds Marina, Suva: tradewindsresv@connect.com.fj
Royal Suva Yacht Club: rsyc@connect.com.fj
Waitui Marina, Savusavu: waituimarina@connect.com.fj
Copro Shed Marina, Savusavu: coprashedmarina@connect.com.fj

New Caledonia

Port Moselle, Noumea: port.moselle@sodemo.nc

New Zealand

All marinas: www.nzmarine.com/directory.html

Radio nets

Coconut Breakfast Net, French Polynesia 8188 kHz at 1730Z (English)
Coconut Breakfast Net, West of French Polynesia 12353 kHz at 1830Z (English)
French Net 13940 kHz at 0300Z (French)
Pacific Seafarers Net (ham) 14300. 0230Z informal chat followed by roll call at 0325Z
Maritime Mobile Net (ham) 14300 - 14313 kHz 24h/day in different languages
Pacific Maritime Net 21412 kHz at 2200Z
Rag of the Air Net 8173 kHz at 1900Z

Panama Canal agents

Ingrid Ollar, Panama Yacht Services

Tel: (507) 226-4053, Mobile: (507) 637-5833, Fax: (507) 270-7848

Email: pys@mavclex.com

Pete Stevens, Delfino Maritime

Tel: 507-261-3554, Mobile: 613-1134

Email: delfinomaritime@hotmail.com

Tina McBride

Tel: 507-232-8843, Mobile: 6637-2999, Email: tinamcbride@hotmail.com

Galapagos agents

Ricardo Arenas, ServiGalapagos, pelicanb@gpsinter.net

<http://www.servigalapagos.com.ec/>

Johnny Romero, Naugala Shipping Agency

nautigal@interactive.net.ec

COUNTRY PROFILES

The following printed Country Profiles are from the Noonsite website, updated as of February 2009.

For additional valuable info, see the following US government publications included in the 2009 Puddle Jump CD. Because each pub is over 300 pages, they are not included in the printed version. They are in Acrobat pdf format, so you need Acrobat Reader, available for free on many websites.

PUB. 126 -SAILING DIRECTIONS (ENROUTE);PACIFIC ISLANDS

2005 SEVENTH EDITION; Prepared and published by the NATIONAL GEOSPATIAL-INTELLIGENCE AGENCY; 2005 BY THE UNITED STATES GOVERNMENT; NO COPYRIGHT CLAIMED UNDER TITLE 17 U.S.C.

This 305 page publication is like a free cruising guide to most South Pacific island groups, from French Polynesia to Guam.

PUB. 120**(PLANNING GUIDE) SAILING DIRECTIONS;PACIFIC OCEAN AND**

SOUTHEAST ASIA; 2006 FOURTH EDITION;Prepared and published by the NATIONAL GEOSPATIAL-INTELLIGENCE AGENCY; 2006 BY THE UNITED STATES GOVERNMENT; NO COPYRIGHT CLAIMED UNDER TITLE 17 U.S.C.

This 370 page publication has a few pages of important information on each country that borders the Pacific – the Americas, South Pacific, and Asia.



French Polynesia : Profile

Facts

- French Polynesia covers an area of the South Pacific Ocean about the size of Europe. It is made up of over 100 islands in five archipelagos: the Society Islands, the Marquesas, Tuamotus, Gambiers and Australs, as well as Clipperton atoll, a small French possession off Mexico.
- From the rugged beauty of the Marquesas to the crystal clear waters of the Tuamotu atolls & the lofty peaks of the Society Islands, the variety in scenery & sailing conditions is unsurpassed anywhere in the South Pacific.
- Most yachts make their landfall in the Marquesas, which is a perfect introduction to this vast cruising ground. There are few man-made ports here & the swell can tuck into the anchorages, but this is more than made up for by the beauty of these high islands.
- In complete contrast are the Tuamotus, once called the Dangerous Archipelago on account of its treacherous currents & lurking reefs. Yachts used to avoid this area, but now often stop & visit the low atolls, as the hazards have diminished considerably with the advent of radar & satellite navigation. Negotiating the passes into some of the lagoons can be a difficult operation, mainly because of the strong currents. Generally, the weakest current occurs one hour after low water & one hour after high water. Passes are for the most part well-marked, some even lit at night. However one should still be sure to use careful eyeball navigation, ideally when the sun is overhead & the colour of the water gives a good indication of its depth.
- Entirely off the usual cruising routes are French Polynesia's other two groups, the Austral & Gambier islands. The latter is best visited if coming from Easter Island or Pitcairn, while the former are only a few days' sail away from Tahiti or make a convenient landfall for yachts heading towards Tahiti from New Zealand.
- The best facilities are to be found in Papeete; the only other centre with extensive repair facilities is on Raiatea, where two charter companies have their base. Facilities are on a par with Tahiti, or even better, & have the great convenience of being grouped together. Yet even in the more remote places it is often possible to find someone who can do welding or repair an outboard engine.
- Provisioning is best in Tahiti & adequate in the other Society Islands. Provisions in the Marquesas & Tuamotus are adequate, though expensive.
- Fuel is available in the main settlements, although it is more difficult to find in the Tuamotus.

- There are excellent postal services throughout the islands. At its 54 island branches the post office (OPT) provides a wide range of services besides stamps: phone cards, parcel post, placing collect calls, international calling cards (ATT, France Telecom), sending & receiving money orders.

Weather

The islands have a tropical climate. November to April is warm and rainy, while May to October is cooler and drier, when the islands are under the influence of the SE trade winds. The cyclone season is November to March. Full cyclones rarely hit anywhere in French Polynesia. The 1982-1983 season was quite exceptional with 7 cyclones in 5 months and in most years (including 2000-2001) not even one has approached the area.

Weather forecasts in French are available from Meteo France, BP 6005 - Faaa Tahiti Airport, 98702 Tahiti, Tel:(689) 36 65 08, Fax:(689) 80 33 09, www.meteo.pf
Weather forecasts for the next 24 hours are broadcast every day on VHF channels 27 (Windward Islands) and 26 (Leeward Islands) at 1100, 1200, 2040, 2100 local Tahiti time.

Main Ports

Clipperton

Australs: Mataura, Tubuai *, Moerai, Rurutu *, Raivavae *, Rapa

Gambiers: Mangareva *

Marquesas: Fatu Hiva, Hiva Oa *, Nuku Hiva *, Tahuata, Ua Huka, Ua Pou *

Society Islands: Bora Bora *, Huahine *, Maupiti, Moorea, Raiatea *, Tahaa, Tahiti *

Tuamotus: Fakarava, Manihi Atoll, Rangiroa *, Tikehau Atoll

*Indicates a port of entry.

Clearance

Papeete is the main port of entry & all yachts have to finalize their clearance here. However, because of the distances & sailing conditions, the outer islands have been made informal ports of entry, where yachts may initially clear in.

On arrival in one of the other islands, yachts should report to the local police (Gendarmerie). Failure to report may lead to a fine. The gendarme in the first port of arrival normally issues a document, one copy has to be mailed to Tahiti & one copy has to be presented in every other island visited on the way to Tahiti. Even on islands without a resident gendarme, the captain should take the document to the local police officer to signal his passage. US & Canadian passport holders arriving without a visa are given a 30 day grace period & are expected to clear into Papeete (Tahiti) & complete proper formalities within that period.

It must be stressed that yachts which made their initial clearance into a port other than Papeete will not be able to obtain clearance when leaving French Polynesia, if leaving from another port than Papeete, unless they have obtained their formal clearance from Papeete.

Immigration

... Non-EU citizens arriving without a visa will be granted a 1-3 month stay (depending on nationality). If the initial visa was valid less than 3 months, one can apply for extensions up to a total of 3 months. This extension can be given by the PAF (Police de l'Air et des Frontieres) or the Gendarmes. Note: the High Commissioner's Office in Papeete (DRCL) has nothing to do with stays of less than 3 months. As extensions up to 3 months (if arriving without a visa) are NOT guaranteed, & depend on the decision of the authorities in Papeete, a better alternative is to obtain a 3-month tourist visa (not extendable) in advance from a French consulate outside of Polynesia. Formalities are much simplified if the visa is obtained in advance. If one flies out of French Polynesia & then back in again, one can obtain a new one month stamp which is extendable for another 60 days.

For non-EU citizens wishing to stay longer, they can contact a French consulate & follow the procedure to obtain a "Carte de Sejour" (temporary resident card) to stay more than 3 months in French Polynesia. Reasons will have to be provided as to why you wish to stay longer, as well as having to give an idea of what you plan to do during your stay, submit proofs of financial independence, etc. The consulate will transmit your demand to the High Commissioner in Papeete. The procedure is lengthy but legitimate requests are often granted.

Proof may be demanded of sufficient funds for one's stay in French Polynesia, especially for those arriving without a visa.

Crew arriving by air to join a boat should make this clear on their visa application, also to immigration on arrival at the airport, who should give them both an entrance and an exit stamp in their passport. The exit stamp is needed to clear out by boat.

Customs

Firearms & ammunition must be declared. If staying less than three days they can be kept on board, otherwise must be bonded by the authorities in each island until departure.

Animals on-board: a letter must to be sent to the Minister of Agriculture to ask special authorization for the animal to go ashore at the end of its 6-month quarantine (time at sea counts). You will need to send copies of current vaccinations (rabies vaccination done within the last year), tattoo or micro-chip documents, special vaccination against "Echinococcus Sp." (you can get Drontal or Drontic by mail from Papeete), a vet certificate that the animal is treated against ticks, copies of your exit stamps from the last country where the animal was allowed ashore & from your entry stamp into French Polynesia. The Service de Developpement Rural in Nuku Hiva will help you with these formalities. Then the animal has to be seen by a certified vet before getting permission to go ashore. Since there is no vet in the Marquesas at this time, you have to see the vet from Papeete who only makes the occasional visit. Without that certificate, the animal will not be allowed ashore. Contact Dr Valerie Antras sdevrural@mail.pf at the government service for the current procedure.

Yachts

The import of plants and grains is forbidden. Recently, the transport of fruits between the islands in the Marquesas has begun to be controlled as they have started to have problems with some fruit flies. Check with the local agriculture inspection when landing. Yachts coming from the western Pacific, such as Fiji, Tonga or the Cooks, may have to be fumigated. On arrival they should anchor off & clear formalities before tying to the quay.

Yachts may remain for up to a year in a 2 year consecutive period without paying duty. Time during which the boat is left in dry-storage while the crew is out of the country can be exempted from counting towards the year's stay if prior arrangements are made with customs. Boatyards and marinas may have arrangements with customs to that effect. It is reported that a new cruising permit (to replace the actual import duty - "papelisation") may soon be introduced. Currently, those boats staying over 1 year in any 2 year period are subjected to customs importation tax (15 to 25% of the assessed value of the vessel).

Bringing in spare parts/equipment: French custom law requires that a special custom's approved agent be used in order to deal with them. Except for parcels having a value inferior to about 150 US\$, one must go through an agent and pay their fee (even if one is using companies such as Fedex, DHL). In the past the customs at Faaa airport were more tolerant of visiting yachts but it appears now the law is being more rigorously applied, even to French yachts.

Safe Places To Leave A Yacht (Noonsite 8/06) Here are my recommendations for the best places to leave your boat in the So .Pac. I suppose you will be flying out of those countries so you would like to be as close as possible to an international airport?

Tahiti: you can take a berth at one of the marinas: Marina Taina would be my recommendation. Or you could anchor at Maeva Beach anchorage or outside Marina Taina and have a resident boat there keeping an eye on your boat. Contact: MOANA ROA, BP 4685, 98713 Papeete, Tahiti - Fr. Polynesia. GSM 00689 723.307, <http://www.moanaroa.com/>

Tonga: in Tongatapu, the capital island or in the beautiful Vava'u Group at one of the moorings rented by local companies and they take a local flight to Nukualofa

Fiji: in Nadi, ask a free mooring at the Bekana Island Resort just off Lautoka. For a few dinners and cocktails you get a good mooring. They have ferry service to Lautoka and from there it is only 45 min by bus or taxi to the airport. Or take a berth at one of the local marinas.

Health

French Polynesia is very well covered by health care with hospitals & many doctors, specialists & dentists in the most populated islands, infirmaries with qualified nurses in even remotely populated areas. Emergency air transportation is in place if necessary. Many cruisers have been well taken care off so one should not hesitate to contact medical help if needed.

Staphylococcus infections are prevalent and usually start from a small cut. The cuts should be cleaned out well, covered with an antibiotic cream & treated until healed, which can take as long as two weeks.

Filariasis (elephantiasis) is still known to exist in some islands. There is a preventative medicine, which gives protection for a year (only necessary if you stay over 6 months).

Documents

Foreign yachts may be asked to leave French Polynesia before the start of the cyclone season in November, but preferably earlier.

Bond: Since the end of 1999 citizens of EU countries arriving by yacht are no longer required to post a bond (Article 3 of law no. 590 of 24 November 1999). Each person from a non-EU country on board the yacht must deposit in a French Polynesian bank a sum of money equivalent to a one-way air ticket back to their home country. On arrival, arrangements have to be made immediately to have money telexed or to pay money into a bank. There are banks in the Marquesas (Nuku Hiva and Hiva Oa). If arriving there as one's first landfall in French Polynesia, & if planning to clear in Papeete in less than 1 month from one's first arrival, it may be possible to wait until arrival in Tahiti to post the bond.

Because of currency fluctuation, one should insist that the money is not changed into the local currency (Pacific Franc), but kept in US dollars, so that the refund is made in the same currency as the deposit. This is possible at Banque de Polynesie. There is a handling fee of \$20 and a 1 per cent charge on the total amount.

This money is normally refunded on the day before departure from Tahiti Nui. If the bond is posted in Papeete, and one leaves from Bora Bora, one must obtain a letter from the Papeete immigration officer confirming the bond. The letter and the receipt must be presented for the refund. Refunds can be in cash, or travellers' cheques, although the latter must be ordered in advance.

Yachts staying only a short period (up to one month) may be able to have the bond requirement waived. Buying tickets for flights back to one's own country can avoid the bond. The unused tickets can be refunded, although one may have to pay a handling charge of approximately 5 per cent. If resorting to this solution, one should make sure that the tickets are refundable and also that the issuing agency will actually authorize a refund.

A reciprocal ham license can be obtained on the spot & for free at the phone administration office in many islands (OPT). It can be renewed every 3 months, up to 1 year).

Fees

There is a charge for visas granted on arrival of US\$30 per person. There are port charges (in Papeete harbor).

Restrictions

Charter: Visiting yachts may not charter in French Polynesia. People arriving by air to charter a boat need only a valid passport, return air ticket & a visa where applicable.

The approaches to the atolls of Mururoa, and Fangataufa and the area around them are prohibited areas, classed as military zones.

The movement of yachts is restricted in certain lagoons in the Tuamotus where there are pearl farms. Generally, one should avoid anchoring near oyster beds.

Alcohol consumption is a problem in many of the islands and visiting boats are urged not to dispense drinks freely to locals.

All fruit trees, including coconut trees, are privately owned. Fruit must not be taken without prior permission. Similarly, reefs inside lagoons are owned by families, so fishing should only be done after having asked permission to do so. Often, if asked, they give freely or gladly in exchange for goods or services.

General Info

Time Zone: GMT - 10

Money: Pacific franc (PFR/CFP) with a fixed parity to the Euro (1 €= 119,33 CFP).

US \$ are accepted in many places (at higher exchange rates).

British Honorary Consulate

Propriété Boubée, Route Tuterai Tane, Pirae,
Postal address: BP 1064, Papeete 98714, Tahiti
Tel:424 355 or 419 841, Fax:412 700

US Consul

BP 10765-98711, Paea, Tahiti
Tel:(689)426-535, Fax:(689)508-096/(917) 4647 457

USConsul@mail.pf

Consular Agency, Mr Christopher Kozely.

Events

Festival, three weeks around Bastille Day when there are song, dance and sport competitions including canoe racing.

TAHITI PEARL REGATTA, February 17th-22nd 2004, www.tahitipearlregatta.org.pf

Emergencies

Emergency: Police 17, Fire 18, SOS Medical 42 34 56.

Links

www.tahiti-tourisme.com Official Tourist Office Site

From a Tahiti tourism website:

Public Holidays:

New Year's Day, Good Friday, Easter Monday, Ascension Day, Whitmonday, Assumption Day, Missionary Day (March 5), Labor Day (May 1), Bastille Day (July 14), Internal Autonomy Day (Sept. 8), All Saints Day (Nov. 1), Armistice Day (Nov. 11), Christmas Day (Dec. 25)

Festivals:

January Chinese New Year (mid-Jan. to mid-Feb.)

February Moorea International Marathon (third Saturday)
Cultural Exhibitions (mid-Feb. to mid-Mar.)

March	Arrival of First Misionaries (March 5) Week of the Fish (last week in March)
April	International Triathlon (mid-April) Maohi Sports Festival (late April)
May	Taputapuatea Inaugural Ceremony (early May) Fête de Mère (second Sunday in May) Tahiti Black Pearl Festival (late May)
June	World Environment Day (early June) Miss Tahiti Contest (mid-June) Maire Fern Day (late June) Horue International Pro-Am Surfing Open (late June to early July) International Pro-Open Golf Tournament (late June to early July)
July	Heiva i Tahiti (end of June to end of July)
August	Mini Fêtes (all month) Te Aito (early August)
<i>September</i>	Floralies Day (mid-Sept.) World Tourism Day (late Sept.)
<i>October</i>	Stone Fishing Ceremony (first half of Oct.)
November	All Saints Day (Nov. 1) Hawaiki Nui (early Nov.)
December	Tiare Tahiti Days (first week in Dec.)

FRENCH POLYNESIA - Language

Although the official language of French Polynesia is *French*, the "*unofficial*" language, **Tahitian**, is spoken as much, if not more. It is not uncommon to hear *locals* speaking a combination of Tahitian & French. Because of the way the Tahitian language is pronounced, it is generally easier for Americans to pronounce Tahitian words than it is for them to pronounce words in French. Unlike French (or even English), there are no confusing rules about how words are pronounced. In Tahitian, each letter has a certain sound & that sound remains the same, no matter what the combination of letters.

Before the arrival of the missionaries in the 1700's, the Tahitian language had never been written. The missionaries took the sounds of the language & matched them to letters in our alphabet. As a result, only 16 letters are used: five vowels, A, E, I, O, U; & eleven consonants, B, F, G, H, K, M, N, P, R, T, V. The letters B, G, & K were not originally used when the language was transcribed. The tahitian word for *forbidden* is now **tabu**, but 200 years ago, it was **tapu**.

The vowels follow these rules for pronunciation.

A - pronounced *ah* as in *father*
 E - pronounced *ay* as in *may*
 I - pronounced *ee* as in *be*
 O - pronounced *oh* as in *no*
 U - pronounced *oo* as in *rude*

Pronunciation of the consonants is that same as for English.

Every syllable in the Tahitian language ends in a vowel. There are no silent letters. There are never two consonants together without a vowel between them, but it is quite common for 2 or 3 vowels to be grouped together. In this case, each vowel would be a separate syllable and would be clearly pronounced. There are times when it sounds as though each syllable isn't being pronounced for some words because, as in most languages, syllables are frequently slurred together.

The only difficult part of pronunciation in Tahitian is the *glottal catch*. This is when two vowels are separated by an apostrophe, such as in the name of the town, **Faa'a**. It is the only characteristic that people seem to have trouble with. But it is an important characteristic, because the *break* can change the meaning of a word entirely.

Take, for example, the Tahitian word **hoe**, which means *paddle* or *row*. By adding an apostrophe, **ho'e**, the word becomes *one*, as in the number. **Hoe** would be smoothly pronounced *ho-ay*. **Ho'e** would be pronounced the same way, phonetically, but with a hesitation after the first syllable, kind of like having someone lightly punch you in the stomach at the end of the *ho*.

Another aspect of the language comes from the early contact with the missionaries. There are many Tahitian words that sound very similar to English, such as **Tenuare**, pronounced *ten-oo-ah-ray*, which means *January*, or **Fepuare** (*feh-poo-ah-ray*), which is *February*.

Some Tahitian Phrases

Hello (general greeting) ---> Ia Orana (*yo-rah-nah*)
 How are you? ---> Maita'i oe? (*my-tie oh-ay*)
 I am fine. ---> Maita'i vau. (*my-tie vah-oo*)
 Thank you. ---> Mauruuru. (*mah-roo-roo*)
 Bye bye. ---> Nana. (*nah-nah*)
 What's new? ---> Eaha te parau api? (*ay-ah-ha tay pah-rah-oo ah-pee*)
 Do you speak English? ---> Ua ite oe i te parau Marite?
 (*oo-ah ee-tay oh-ay ee tay pah-rah-oo mah-ree-tay*)
 I don't understand. ---> Aita i papu ia'u. (*eye-tah ee pah-poo ee-ah-oo*)
 Please speak slowly. ---> Faa taere te parau. (*fah-ah tah-ay-ray tay pah-rah-oo*)
 Repeat please. ---> Tapiti. (*tah-pee-tee*)
 What's your name? ---> O vai to oe i'oa? (*oh vah-ee toh oh-ay ee-oh-ah*)
 My name is Chris. ---> O Chris to'u i'oa. (*oh kris toh-oo ee-oh-ah*)
 Where do you live? ---> Ihea oe e faeia ai? (*ee-hay-ah oh-ay ay fah-ay-ee-ah ah-ee*)
 I live in California. ---> I California vau e faeia ai. (*ee California vah-oo ay fah-ay-ee-ah ah-ee*)
 Where are you from? ---> Nohea mai oe? (*noh-hay-ah my oh-ay*)
 I am from America. ---> No te Fenua Marite mai vau.
 (*noh tay feh-noo-ah mah-ree-tay my vah-oo*)
 Show me the way to ... ---> Fa'aite mai ia'u ite e'a ... (*fah-eye-tay my ee-ah-oo ee-tay ay-ah*)
 Let's go! ---> Haere tatou! (*ha-ay-ray tah-toh-oo*)
 Come here! ---> Haere mai! (*ha-ay-ray my*)
 Turn right. ---> Na te pae atau. (*nah tay pah-ay ah-tah-oo*)
 Turn left. ---> Na te pae aui. (*nah tay pah-ay ah-wee*)

Please take me to ... ---> Arave ato'a ia'u ... (*ah-rah-vay ah-toh-ah ee-ah-oo*)

I want to speak to Chris. ---> Hina'aro vau e parau ia Chris.

(*hee-nah-ah-roh vah-oo ay pah-rah-oo ee-ah kris*)

Who is this? ---> Ovai te ie? (*oh-vie tay ee-ay*)

What is the name of this? ---> Eaha tei'oa ote'ie? (*ay-ah-ha tay-ee-oh-ah oh-tay-ee-ay*)

What is the price of this? ---> Ehia moni te'ie? (*ay-hee-ah moh-nee tay-ee-ay*)

What's wrong? ---> Eaha te tumu? (*ay-ah-ha tay too-moo*)

Look! ---> A hi'o! (*ah hee-oh*)

Hurry up! ---> Ha'a viti viti! (*ha-ah vee-tee vee-tee*)

Take it easy! ---> Haere maru! (*ha-ay-ray mah-roo*)

To your health! ---> Manuia! (*mah-nwee-ah*)

This is very good. ---> E mea maita'i roa teie. (*ay may-ah my-tie roh-ah tay-ee-ay*)

Do you want a drink? ---> Hina'aro oe e inu? (*hee-nah-ah-roh oh-ay ay ee-noo*)

Are you hungry? ---> Ua poia anei oe? (*oo-ah poh-ee-ah ah-nay-ee oh-ay*)

Yes ---> E (*ay*)

No ---> Aita (*eye-tah*)

What? ---> Eaha? (*ay-ah-ha*)

Why? ---> No te aha? (*noh tay ah-ha*)

I love you. ---> Ua here vau ia oe. (*oo-ah hay-ray ee-ah oh-ay*)

Merry Christmas. ---> Ia orana no te noere. (*yo-rah-nah noh tay noh-ay-ray*)

Happy New Year. ---> Ia orana i te matahiti api. (*yo-rah-nah ee tay mah-tah-hee-tee ah-pee*)



Cook Islands: Profile

Facts

The Cook Islands are made up of 15 islands, spread over an area of over half a million square miles of ocean. The Southern Group, of which Rarotonga is the main island, also comprises Aitutaki, Atiu, Mitiaro, Mauke and Mangaia. These are high and fertile and most of the 18,500 inhabitants live there.

The Northern Group are the low coral atolls of Penrhyn, Manihiki, Rakahanga, Pukapuka, Nassau and Suvarrow, which is a national park. Also part of the Cooks are the atolls of Manuae, Takutea and Palmerston Island.

As most yachts sail to the Cook Islands from the east, a good time to plan one's passage is after the 14 July celebrations in Tahiti are over, as the first week of August is the time when the Cooks put on their own festivities around Independence Day. Most of the action is in Rarotonga, but the other islands can be visited afterwards. Aitutaki is a popular stop and yachts are always assured of a warm welcome there. This is the case in all of the Cook Islands and as elsewhere in the Pacific, the more remote the island the more enthusiastic the welcome.

Weather

December to March is rainy and also the cyclone season. Generally the climate is warm and sunny, but not too hot. During the winter, April to November, the islands are under the influence of the SE trade winds. However, sudden squalls can occur from other directions with little warning.

Main Ports

Northern Group: [Penrhyn *](#) , [Pukapuka *](#) , [Suvarrow](#)

Southern Group: [Aitutaki *](#) , [Atiu Island *](#) , [Palmerston](#) , [Rarotonga *](#)

*Indicates a port of entry.

Restrictions On Yachts In Avatiu Harbour

Created by [doina](#). Last modified on 2009-01-16

There are some major changes to the wharf and marina area at Avatiu Harbour on Rarotonga. A separate anchorage has been created for fishing boats and yachts which will be away from the mooring for the bigger cargo ships. There are more changes all along the waterfront and beach area.

Reports from January 2007 is that yachts were denied entry into the new facility, all places taken by local fishing craft and a severe depth restriction. Coral heads are present external to the new wharf, an ideal place to anchor. Additionally if you do chance this area you will still be required to move your vessel when a cargo ship arrives. A height restriction is also in place. The harbor master should be contacted for updated information.

Avatiu harbor is convenient for checking in but otherwise fees are high and surge is often a problem, with the harbor even at times untenable.

Clearance

For clearance, the captain must present the passports, clearance from the last port, crew list, as well as a general declaration and details of the yacht.

Yachts may not visit any other islands in the Cooks than those mentioned as ports of entry without permission from customs and immigration. At all these islands, the captain should check in with customs and the resident administrator, if present.

Immigration

If entering in Rarotonga a permit for up to 31 days will be given on arrival. This can be extended, on a monthly basis, up to three months maximum. Fourteen days before the permit expires one should apply for the extension. Proof of adequate funds may be requested for extensions. For longer visits a visa must be obtained from a New Zealand or British consulate before arrival in the Cooks.

In Aitutaki and other ports of entry, a 31 day permit will be given on arrival. Extensions have to be obtained in Rarotonga. If crew disembarks from the yacht, they must notify immigration and provide a baggage declaration.

Customs

A list of firearms must be produced on arrival and these will be impounded until departure.

Animals have to be confined on board until eventual clearance to land by the quarantine officer.

Agriculture: Animals, plants and fruit will be inspected as the Cooks are free of serious diseases and pests, and their economy depends very much on agriculture. Fruit and meat will be confiscated, so it is advisable not to arrive with a lot of fresh supplies. Fortunately good local fruit is available.

Health

Yachts must leave the "Q" flag up until cleared by Port Health, who will visit the yacht and provide pratique.

Fees

Harbour fees in Rarotonga: There is a berthage charge for yachts owned by non-Cook Islands residents. Harbour fees in Rarotonga must be paid before outward clearance is given.

Avatiu Harbour: Yachts must pay a daily fee depending on length, monohulls NZ\$2.00 per metre per day, multihulls NZ\$2.75 per metre per day.

There is also mooring fee of NZ\$5 per day at Aitutaki.

Visa extension fee amounts to NZ\$70 for 3 months per person. There is an exit fee of NZ\$25 per person, NZ\$10 per child (2-11 years).

Overtime is charged before 0800 and after 1600 on weekdays, and all day at weekends and public holidays.

Restrictions

Cruising yachts are not allowed to remain in the islands during the cyclone season, which is from December to March. Harbour masters in Rarotonga and Aitutaki may not even let transiting yachts stay overnight in port during the cyclone season.

To visit Suvarrow atoll national park, one should obtain permission from the resident park administrator.



Cook Islands Tourism Corporation

PO Box 14, Rarotonga

Tel:+682 29435, Fax:+682 21435

[Cook Islands Tourism Corporation Noonsite Page](#), www.cook-islands.com



American Samoa: Profile

Facts

The two neighboring Samoas are very different from each other, American Samoa being a US Territory, while Western Samoa is an independent state. American Samoa comprises all the Samoan islands east of the 171° parallel, that is the main island of Tutuila, as well as Aunuu, the Manua Group, Rose Island, and Swains Island.

This US outpost in the South Seas has been best described as the place sailors love to hate. The features that attract most cruising boats to American Samoa, such as US goods, excellent provisioning and good communications, are those which have contributed to its seamier side. The Samoans have embraced the American way of life wholeheartedly, which has led to a high standard of living compared to their neighbors, but also to high criminality especially in the capital Pago Pago.

It is Pago Pago which attracts most cruising sailors, either to reprovision in its well-stocked supermarkets, or to spend the cyclone season in this scenically beautiful and well protected harbor, which unfortunately has been virtually destroyed by the local fish cannery, which fills the water with effluent and the air with revolting odors.

Apart from the fact that most things American are available and therefore provisioning is better than in neighboring countries, facilities for yachts in Pago Pago are quite limited. Until there is a marked improvement in yachting facilities, Pago Pago is best regarded as a convenient reprovisioning stop and nothing more.

Weather

There is very heavy rainfall all year, especially from December to April, which is the cyclone season. The average temperatures are 24-31°C (75-87°F). May to November are the trade wind months and are less humid.

Main Ports

[Pago Pago *](#)

Indicates a port of entry.

Immigration

American Samoa is considered part of the United States, and US citizens can live and work there, but they should have valid passports for entry.

On arrival other nationalities are granted a 30-day stay. Entry permits are granted to all those who can provide proof of their onward passage and have adequate funds for their stay. For extensions up to a maximum of 90 days, one should apply to the Immigration Office, Executive Office Building, Utulei, PO Box 7, Pago Pago. An exit permit is needed from immigration. It is possible that passports may be held until departure.

The Passport & Visa Office in the Administration building is open 0830-1200 Monday to Friday and can issue US visas.

Customs

A customs entry clearance permit is required for firearms. A Department of Agriculture entry clearance permit is needed for any animals, plants or vegetables. Animals are confined on board.

Replacement Boat Parts and Spare Parts may be brought in duty free providing the boat they are intended for has a transpire. Equipment shipped in as cargo will be subject to 6% Stamp Duty (based on the value of the parts).

Health

Immunizations are required only if a person has been in an infected yellow-fever or cholera area 14 days previous to arrival.

Fees

US\$25 for clearing in and US\$25 for clearing out is payable by visiting yachts as well as monthly harbor fees of approximately US\$12 to US\$15. These must be paid before departure as otherwise customs will not issue an outward clearance.

Restrictions

Rose Island, the easternmost island of the Samoan archipelago, is a National Wildlife Refuge administered by the US Fish and Wildlife Service in Honolulu. Permission from this service is needed to visit the island.



Facts

Samoa, formerly known as Western Samoa, comprises the two islands of Upolu and Savai'i, as well as several smaller islands. Savai'i is the largest, but Upolu is the most developed and centre of government and commerce.

Robert Louis Stevenson was the first in a long line of famous travellers to be seduced by the Samoan way of life, and today's sailors can still find a Samoa whose ways have changed very little during the century since Stevenson lived here.

Cruising along the sheltered northern coast of the two main islands, one can anchor off villages such as Asau on Savai'i, from where one can explore the interior of these verdant islands with their gushing waterfalls and lush rain forests.

Asau is a well-protected anchorage, but only limited supplies are available, so it is better to provision in Apia.

Weather

Samoa has a tropical climate with the more pleasant season being the south-east trade wind season from April to November. During the cyclone season, from December to March, the weather is hotter and wetter. As the Samoan islands are quite high, local weather conditions can be quite varied.

Main Ports

[Apia \(Upolu\) *](#)

Immigration

Immigration grant 30 days on arrival and there is a fee if one wishes to apply for an extension.

A visa or entry permit is required if staying longer and should be obtained prior to arrival from Samoan, New Zealand or British consulates or from the immigration office in Apia.

Customs

Firearms must be declared and will be sealed on board by customs or kept ashore until departure.

Animals are not permitted ashore.

Documents

A cruising permit is required if wishing to visit other harbors besides Apia. An application may be made in writing on arrival, but it is better to do so in advance. Write to the Secretary for Foreign Affairs, PO Box L 861, Apia and send a copy to the Secretary for Transport, PO Box 1607, Apia. The letter should state the yacht's name, port of registry, the names and nationalities of the master and crew, ETA Apia, and a list of places one intends to visit, plus planned duration of stay.

On outward clearance it is possible to get permission to stop in Asau on Savai'i, before continuing on to other destinations.

Fees

Customs: 33 talas (about US\$13 in 2004 when US\$1 = 2,67 Talas) Port fee: US\$25 or 75 Talas.

Restrictions

It is prohibited to enter the ferry terminal ports of Mulifanua and Salelologa, except with special permission from the Ministry of Transport.

Apia: All garbage must be put into sealed plastic bags and given to the quarantine office at the wharf gate for disposal. There is a charge of WS\$1 per bag.



Samoa Tourism Authority

PO Box 2272, Apia, Samoa

Tel: +685 63500 to 63508, Fax: +685 20886

[Samoa Tourism Authority Noonsite Page](#), <http://www.visitsamoa.ws>, info@visitsamoa.ws

*Indicates a port of entry.





Tonga : Profile

Facts

This Polynesian kingdom, situated in the heart of the South Pacific, consists of over 160 coral and volcanic islands, of which only 36 are inhabited.

Best known among sailors is the northern group of Vava'u, whose maze of islets and reefs provides one of the best cruising grounds in the South Pacific.

In spite of Tonga's remoteness, facilities are surprisingly good and the setting up of a small industrial centre near the capital Nuku'alofa has encouraged several boating-related foreign companies to start operations in Tonga.

A dangerous area to avoid by boats on passage to Fiji is Metis Shoal (19°11.4'S 174°51'W), where there has been intense volcanic activity.

Weather

Tonga's climate is warm and humid, although less so than other tropical islands. December to March, which is also the hurricane season, has more rain. From April to November the SE trade winds predominate, although quick sudden squalls can occur from other directions.

Main Ports

[Lifuka \(Ha'apai\) *](#) , [Neiafu \(Vava'u\) *](#) , [Niuafu'ou Island *](#) , [Niutoputapu Island *](#) , [Nuku'alofa \(Tongatapu\) *](#)

*Indicates a port of entry.

Clearance

The Q flag must be flown. The captain should contact the harbor master or customs, who may or may not board the yacht. One must present the outward clearance from the last port.

Immigration

No visas are required for citizens from The EU, Australia, Barbados, Brazil, Brunei Darussalam, Canada, Cook Islands, Dominica, Federated States of Micronesia, Fiji, French Polynesia (New Caledonia, Tahiti, Wallis & Futuna), Japan, Kirabati, Malaysia, Marshall Islands, Nauru, New Zealand, Niue, Norway, Palau, Papua New Guinea, Russia, Samoa, Seychelles, Singapore, Solomon Islands, St Kitts & Nevis, St Lusie, St Vincent & the Grenadines, Switzerland, The Bahamas, Turkey, Tuvalu, Ukraine, USA and Vanuatu for stays of up to 30 days. All other visitors require a visa in advance.

Applications for visa extensions can be made at the Immigration Department, Nuku'alofa, Tonga (tel: 26969 or 26970; fax: 26971; e-mail: visatonga@gmail.com). One must have a valid visa at all times, so one should make sure this does not expire when moving between island groups.

Visa fees, Tongan panga \$40 per month, per person.

Customs

Firearms must be declared on arrival and will be held in custody ashore until departure.

Dogs and parrots may be destroyed. Other pets will be confined on board. Animals, birds and plants need a quarantine certificate. Fresh produce may be confiscated. Garbage must be disposed of officially on arrival.

Yachts may remain in Tonga for longer periods, provided the necessary arrangements have been made with customs. A small daily fee is charged for boats left unattended. Equipment sent to vessels in transit may be imported free of duty.

Documents

Day sailing within the island groups is not restricted, but a Coastal Clearance Permit is required when moving between groups served by customs offices. Customs must be visited to obtain this Coastal Clearance. Harbour dues should be paid as the receipt for this will be requested in the next port. On arrival at the next island group, one must contact customs on arrival. When travelling between Nuku'alofa and Vava'u, or vice versa, one can request that the Coastal Clearance includes Ha'apai if intending to stop in that island group.

Fees

Light dues: T\$0.20 per GRT/month or part month.

Tonnage dues: T\$4 per 15 GRT/month or part month.

Harbour fees: T\$0.30 per GRT/month or part.

On payment of these, a yacht will receive inward clearance for the rest of the islands, which must be shown when visiting elsewhere.

Restrictions

Social customs: Anyone appearing in public without a shirt will be fined. Dress code is very strict as is Sunday observance, when no work (even on your own boat), sporting or other strenuous activities are allowed. Neither should laundry be hung out to dry. Hats should never be worn either in church, or in the presence of a person in authority or someone to whom you wish to show respect. Displaying anger or frustration is considered very bad form in Tonga.

Marine Reserves: There are some underwater sites of particular beauty and these have been designated as marine reserves. These reserves are for viewing only, collection of shells or marine life is prohibited and anchoring is not permitted near or in the giant clam reserves.

There are seven marine and coastal reserves around Tongatapu: Hakaumamoto Reef, Pangaimotu Reef, Malinoa Island and Reef, Ha'atafu Beach, Monuafe Island and Reef, Mounu Reef Giant Clam Reserve (northwest of the yacht harbor) and Muihopohoponga Coastal Reserve on Niutoua.

Three reserves are proposed for Vava'u: the wreck of Clan McWilliam in Neiafu harbor, the coral gardens between Nuapapu and Vaketeitu, the Giant Clam Reserves in Hunga Lagoon, Neiafu Harbour and off Ano Beach. Giant clams are an endangered species and those tagged with a number printed on the shell or an aluminum tag should not be disturbed even outside of the reserves. Visitors are requested to show restraint in collecting other shells, by taking dead shells or buying them and limiting the number taken to one or two of each species. Over-collection of Triton shells has led to an increase in crown of thorns starfish which in abundance can destroy the reef; and visitors are urged not to buy or collect tritons.

Waste Disposal: Throwing rubbish into the harbor or waters of Tonga is forbidden. As there are no refuse containers on the out islands, visitors are expected to carry all rubbish with them on board and dispose of it in one of the refuse containers in Fuaa harbor, on the wharf at Neiafu, or at the Moorings Base.

Report On Checking in at Neiafu, Tonga

Created by [doina](#). Last modified on 2006-11-30 13:52:21

Customs will insist you move your boat to the commercial pier, putting you at great risk of damage. If you picked up a mooring, arriving after hours, customs will still insist you bring your boat to the wharf to be checked in. Pads, designed for large commercial shipping, extend out from the wharf 4 to 6 feet above the water. It is impossible to use fenders. Several people were injured this year and boat damage is common.

Numerous complaints were made this year of customs clearance in Neiafu. Theft is common and you must ensure that someone is always available to chaperone officials while you fill out paperwork. Others had food confiscated, snacks in particular, then watched as the officials ate it on board. Handouts of ropes, tobacco, liquor and fishing equipment were also demanded.

These problems are listed in the Tonga Guide book inaccurately, quoting the problem as occurring in Nuku'alofa rather than Neiafu. Customs in Nuku'alofa has been reported as courteous and professional.

Update To Report On Tonga Islands – Haapai Group islands settling

Created by [doina](#). Last modified on 2006-12-05 13:21:34

Update to report [Sloepmouche report on Tonga Islands August 05](#)

Some of the anchorages listed are no longer tenable due to settling of the islands in the Ha'apai Group, a result of the Tongan earthquake in May of 2006.

For instance the resort listed on Telekivava'u Island is no longer open and the anchorage is untenable due to the reef settling 18 inches, at that location. Erosion of beaches is occurring rapidly on many islands, making landing a dinghy difficult in a few locations.

It is best to check local information before setting out to an island in this group. A good source of information for the Ha'apai Group is Trevor at the Mariners Cafe in Lifuka.



Fiji : Profile

Facts

Fiji is an archipelago of over 300 islands, from coral atolls to large volcanic islands. About 100 are inhabited, while many of the rest are used as fishing bases and planting grounds. The International Dateline runs through Fiji, although most of the islands are just west of 180°.

Fiji has all the ingredients of a perfect cruising destination - beautiful islands, secluded anchorages and welcoming people. This picture of perfection is somewhat marred by a menacing array of coral reefs that almost encircle the entire archipelago. The majority of visiting yachts arrive from the east, which is where the reefs have claimed most victims. Part of the problem is that it is forbidden to stop at any of the eastern islands before clearing in and a careful watch is kept on yacht movement by the Fijian authorities. The location of the few ports of entry complicates the task of cruise planning, especially for those hoping to visit the eastern Lau group to windward of all ports of entry. The most convenient ports for those intending to cruise eastern Fiji are Levuka on the island of Ovalau, or Savusavu on Vanua Levu.

Suva has the best range of repair facilities in the Central Pacific, most of which are concentrated in the vicinity of the Royal Suva Yacht Club.

The traditional way of life is still thriving in the islands and the unthinking attitude in the past of a few visiting sailors has caused offence and animosity, which led to a strict control of cruising permits. Local etiquette should be observed and one is expected to pay a courtesy visit to the chief or headman of the island or village bearing a gift of yagona (kava). A good supply should be taken on board from Suva market. The normal gift is about half a kilogram of kava root. Dress is conservative, and is not appropriate for women to wear swimwear, trousers or shorts when visiting a village or house. Everyone should be covered from shoulder to knee and neither hats nor sunglasses should be worn in the village. Bags and cameras should be carried in the hand, not slung over a shoulder. Fishing rights are strictly allocated to the various villages and permission should be obtained before attempting to catch any, and then only take sufficient for your immediate needs. Gifts of alcohol will be considered discourteous, as its consumption is discouraged.

Traditions are not so strong in the western islands, some of which have been developed as tourist resorts, such as the charming Mamanuca islands, which are a short hop from Nadi airport, convenient for crew changes.

Further west is the Yasawa Group, one of the most popular cruising grounds due to scenic anchorages and clear waters. Pickmere's Yasawa chartlets are essential for cruising the Yasawa group and are available in Lautoka.

Two new marinas, Port Denarau and Vuda Point, have opened on Viti Levu's west coast, both being close to Nadi international airport.

The opening of two marinas in Savusavu, Copra Shed Marina and Waitui, have made it a popular base from which to explore the eastern part of the archipelago.

Rotuma and several smaller islands lying approximately 200 miles NNW of Fiji, form a distinctive group and although administratively linked to Fiji, ethnologically they are very different as Rotumans are Polynesians. The administrative centre is at Ahau, but as Rotuma is not an official port of entry, access to it is only allowed with prior permission from the authorities in Suva.

Weather

Fiji has a mild tropical climate. From May to November the SE trades blow, making it cooler and drier, while the summer months from November to April are wet and humid. Viti Levu and Vanua Levu can have a lot of rain and Suva is renowned for sudden but short torrential downpours. Cyclones occur during the period November to April. There are very few hurricane holes in Fiji and these quickly fill up with local boats.

Fiji Meteorological Service

<http://www.met.gov.fj/>

Main Ports

Kadavu: [Daku Bay](#), [Vunisea](#)

Malololailai Island: [Musket Cove](#)

Ovalau: [Levuka](#) *

Taveuni: [Somosomo](#)

Vanua Levu: [Savusavu](#) *, [Viani Bay](#)

Viti Levu: [Lautoka](#) *, [Port Denarau \(Vuda Point\)](#), [Suva](#) *

Clearance

On reaching Fijian waters one must first call at a port of entry to complete pratique, customs, immigration and quarantine formalities. Working hours for clearance are from Monday to Thursday 0800-1300, 1400-1630; Friday 0830-1300, 1400-1600. Overtime charges will be paid outside of these hours. Documents required prior to arrival are:

1. Clearance certificate from the previous port or country.
2. Crew lists with details of passport numbers, nationality and age.
3. Valid passports.

Vessels in excess of 100 tons must contact a yachting agent prior to arrival. There are many differences in clearance formalities for vessels over 100 tons which must be complied with.

Once cleared into Fiji, those who intend to sail to another port of entry (either directly or via the other islands) must clear out with customs from the port of entry where they cleared in first.

Before proceeding to a port of entry, all vessels are required to communicate with Port Control on Channel 16 to request permission to enter the port, and to obtain information on vessel movements in the harbor. On entering the port, proceed directly to the designated quarantine area indicated on the chart. Fly the international Q flag and await instructions or arrival of the correct authorities. Apart from pratique,

customs, immigration or quarantine officers, no one should be allowed to board the vessel, nor any person or article leave the vessel until all clearances are granted.

Quarantine should be the first official to clear the vessel. The captain will be instructed to await the arrival of the health boat or to proceed directly to the wharf and await the health officer's arrival. The Department of Health levy a fee for this clearance which must be paid at the Divisional Medical Officer's office. The captain should inform the authorities if there are any prohibited items aboard. Foreign vessels are requested to declare on arrival the following:

Foods: (tinned or packaged): meat, sausages, salami, ham, pork, poultry, eggs, fats, milk, butter, cheese, honey.

Plants: vegetables, fruits, nuts, seeds, bulbs, mushrooms, flowers, straw, bamboo or any other articles made of plant materials.

Animals, animal products and soil, or any equipment used with animals or which has come in contact with soil.

Some items will not be permitted to be kept aboard the yacht for the duration of the visit in Fiji. What is allowed to stay aboard will be at the discretion of the quarantine officer at the time of inspection. Everyone needs permission from an immigration officer before they disembark. Port Control should be asked to send out an immigration officer, but if he does not meet the yacht on arrival, a message should be sent via the customs officer repeating this request. The Immigration Department may expect to be reimbursed for the taxi fare to get the officer to the wharf and back.

Prior to departing a port of entry, whether going abroad or to another Fijian destination, one should notify Port Control of the intended destination.

Boats leaving Fiji must clear customs on departure. Clearance will not be granted unless all port and quarantine fees have been paid, so receipts for all these should be kept. Boats must leave within 24 hours of having cleared customs. There is a departure tax of F\$20.

Immigration is the final authority to clear the yacht out of Fijian waters. An appointment should be made in advance of departure advising where the boat is. Immigration insist that boats depart immediately on receiving clearance. It is prohibited to stop at any island once cleared out.

Immigration

Passports must be valid for at least six months from the date of entry.

A visa-free stay for up to four months (provided one has enough funds or an outward ticket) is allowed for United Kingdom, United States, Canada and most European nationals. Visas are required by only a few nationalities. After four months, an extension may be obtained for up to six months.

Crew flying into Fiji to join a yacht, must have a letter of approval from the Immigration Department prior to their flight departure.

Customs

Firearms must be declared and handed over to the police to be kept in bond until departure (48 hours' notice of departure must be given). If one enters at one port and exits at another, the guns may have to be transferred to the port of departure by the police.

A bond declaration must be signed for any animals on board and they must not be allowed to land on any of the islands.

An itinerary of places and dates where one is planning to cruise until departure from Fiji is required for customs clearance.

Yachts may remain one year without paying any duty.

Any amount over 2 liters of spirits and 4 liters of wine must be sealed on board or taken ashore and bonded. Customs often check the seal before departure. Excess amounts of wine, beer or spirits, which are left unsealed for personal consumption, must be declared and import duty paid.

To cruise the outer islands, a Customs Cruising Permit must be filed as well as obtaining a Cruising Permit for the islands. This can be obtained from The Ministry of Fijian Affairs at 61 Carnavon Street, Suva or from the Commissioner's Office in Lautoka, Levuka or Labasa. The advice of a yachting agent is advisable if you wish to visit the Lau group.

Documents

Vessels intending to visit any port, island or anchorage outside of Suva, Lautoka, Savusavu or Levuka need to obtain a cruising permit from customs as well as permission to cruise the islands. This permit acts as a letter of introduction to the *Turaga ni Koro* (the village head), the *Buli* (head of the provincial subdivision), or the *Roko Tui* (provincial head). Cruising permits can be obtained from the Ministry of Foreign Affairs located at 61 Carnavon Street in Suva, or from the Commissioner Western's office in Lautoka, the Commissioner Eastern's office in Levuka, or the Provincial Office in Savusavu. Fijian customs and laws are strong and have to be respected. These will be explained by the Department when the permit is given.

A visit to one specific anchorage in the Lau Group can be arranged through either of the marinas at Savusavu. Otherwise, those who wish to visit the Lau Group must apply for a permit from the President's office. The office is located in Suva. A letter should be prepared beforehand, including the following information: detailed list of islands to be visited, itinerary and dates, reason for visit, crew list with details of ages and passport numbers, name and details of yacht.

Fees

Cruising permit: FI\$5. Lau Group Permit: FI\$1000.

Customs: Overtime will be charged on weekdays after 1630, FI\$16.50 per hour; Saturdays, Sundays and public holidays, FI\$22.50 per hour. After 2000 to 0600 weekdays, and on Saturdays, Sundays and public holidays, there is a three hour minimum charge.

Health clearance fee of \$F33.75.

The Ports Authority of Fiji levies a fee applicable to all vessels entering any of the ports of Suva, Lautoka, Savusavu and Levuka. Vessels up to 100 tonnes pay a maximum of \$F14.45.

Restrictions

Garbage should be put in sealed plastic bags and handed over to be disposed into the port incinerator. Garbage should not be discharged without the permission of the quarantine officer.



New Zealand : Profile

Facts

As the favorite place to spend the cyclone season in the South Pacific, New Zealand has built up a good reputation among cruising sailors as the place where everything can be fixed. Marine facilities are indeed of a high standard in the North Island, particularly around such yachting centers as Auckland, Whangarei and the Bay of Islands.

The Bay of Islands in the north is the favorite place of entry and the cruising here is so pleasant that some visiting yachts never leave this large protected bay dotted with the many islands which gave its name.

Tauranga in the Bay of Plenty has also become popular as a port of entry with yachts arriving from Tonga, as well as a stopover for yachts during the cyclone season.

Sailing south from the Bay of Islands or Whangarei, it is worth taking an offshore tack to call at the Barrier Islands before heading for Hauraki Gulf and busy Auckland. Other highlights of a southbound trip are the capital Wellington and, across Cook Strait, picturesque Picton and the Marlborough Sounds.

Sailing conditions around the South Island are more challenging and those who are short of time can enjoy its majestic scenery by cruising on four wheels. It is particularly difficult to cruise in Fjordland with its deep windy anchorages and the awe-inspiring Milford Haven is best savored from the deck of a locally skippered boat. Nevertheless, the east coast of the South Island has several attractive harbors such as Dunedin, Timaru and Lyttleton, but not one of them matches the beauty of the Marlborough Sounds, which also has the advantage of being more accessible.

Cruising yachts are increasingly visiting Nelson, at the northern end of the South Island in Tasman Bay, which as the country's biggest fishing port has a good range of marine facilities, and also possesses a climate which allows outside work to be carried on all year round.

There are workshops specializing in marine services in most places and the quality of workmanship is usually high. However, one should always insist on being given a written estimate of the cost of the proposed work, as visiting sailors have encountered problems in the past when faced with bills much higher than the verbal estimate they had been first given.

Weather

The climate is varied from the subtropical in the north to snowy mountains and glaciers in the south. The summer from November to March is the more pleasant season, while the winter is wetter and windier. The South Island is generally cooler in both summer and winter. Although out of the tropical cyclone area, occasionally in February or March the tail of a cyclone reaches the North Island. Lying in the westerly wind belt, the east coast is more sheltered and the main yachting centers are along that coast.

Russell Radio, located in the Bay of Islands, provides weather information for the Western Pacific and runs a maritime net on 4445 kHz from 0700 to 0830, 1930 to 2030 GMT, 12353 kHz from 0400 to 0430, 2115 to 2130 GMT, 12359 kHz from 0430 to 0445, 2030 to 2100 GMT. A fee of \$NZ30 is payable for this service on arrival in New Zealand. Channel 16 is monitored during daylight hours.

Metvuw.com/

<http://www.metvuw.com/>

New Zealand and South Pacific weather.

Main Ports

Arrival at any other port requires the written permission of a Collector of Customs.

North Island: [Auckland *](#) , [Gisborne *](#) , [Gulf Harbour](#) , [Napier *](#) , [New Plymouth *](#) , [Opuia \(Bay of Islands\) *](#) , [Tauranga \(Bay of Plenty\) *](#) , [Wellington *](#) , [Whangarei *](#) , [Whangaroa](#) , [Whitianga](#)

Off-lying Islands: [Chatham Islands *](#) , [Kermadec Islands](#) , [Stewart Island](#)

South Island: [Christchurch \(Lyttelton\) *](#) , [Dunedin *](#) , [Greymouth](#) , [Invercargill \(Bluff\) *](#) , [Nelson *](#) , [Picton *](#) , [Timaru *](#)

*Indicates a port of entry.



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Magic Travellers Network is a flexible transport network for the independent traveler. Magic picks up from hostels nationwide around New Zealand and with the freedom of choose you can hop on and hop off the coach anywhere, selecting from a wide variety of activities.



Australia : Profile

Facts

In spite of the large number of yachts in Australia, the number of Australian yachts cruising overseas is surprisingly small and the only explanation for this is that Australia possesses such beautiful and varied cruising grounds that they do not need to go and look for variety elsewhere. From the wind-swept coasts of Victoria and Tasmania to the picturesque harbors of New South Wales, the tropical islands and Great Barrier Reef of Queensland to the huge shallow bays of the Northern Territory, Australia has it all.

The island of Tasmania and the Torres Strait Islands are also part of Australia and there are the overseas territories of [Norfolk Island](#), [Cocos Keeling](#) and [Christmas Island](#)

Facilities in Australia are generally good and anywhere near a yachting centre are excellent. For yachts arriving from the Pacific it is a great relief to find a country where everything is available and virtually anything can be fixed. If in need of a major overhaul or repairs, it is advisable to head for a main centre, such as Sydney, Brisbane, Townsville, Cairns or Darwin, where repair facilities are of a high standard and spares readily available.

Due to the large fishing fleet based in Darwin, there are excellent repair facilities of all types and chandlers in the area around the Mooring Basin. Boats bound for Darwin should join the annual *Over the Top Cruise* organized by the Gove Yacht Club as it includes stops in several places that are normally closed to visitors.

Yacht clubs everywhere are welcoming and are also a valuable source of advice concerning repairs or provisioning. Australian charts are excellent and are continually kept up to date. They are available in any port of significant size.

Weather

The climate varies from one end of the country to the other. It is mainly temperate except for the tropical north and central desert. The north has two seasons, wet from November to March, with the heaviest rainfall after January. The winter months of April to October are drier and more pleasant. The cyclone season is from December to March on both the Pacific and Indian Ocean coasts.

Australian weather: www.bom.gov.au

Main Ports

New South Wales: [Coffs Harbour *](#), [Eden *](#), [Gosford](#), [Lord Howe Island *](#), [Newcastle + Port Stephens *](#), [Port Botany and Kurnell *](#), [Port Kembla / Shellharbour *](#), [Sydney *](#), Wollongong *, [Yamba](#), [Clarence River](#)

Northern Territories: [Darwin *](#), [Gove *](#), [Groote Eylandt](#), [Milner Bay](#)

Queensland: [Abbot Point *](#), [Brisbane *](#), [Bundaberg *](#), [Cairns *](#), [Gladstone *](#), [Gold Coast](#), [Hay Point](#), [Dalrymple Bay *](#), [Lucinda *](#), [Mackay *](#), [Manly *](#), [Mooloolaba](#), [Mourilyan Harbour *](#), [Port Douglas](#), [Rockhampton](#), [Port Alma *](#), [Scarborough](#), [The Whitsunday Islands](#), [Thursday Island *](#), [Tin Can Bay](#), [Townsville *](#), [Weipa *](#)

South Australia: [Adelaide *](#), [Cape Thevenard *](#), [Kingscote](#), [Port Lincoln *](#), [Port Pirie *](#), [Robe](#), [Wallaroo *](#), [Whyalla *](#)

Tasmania: [Burnie *](#), [Devonport *](#), [Hobart *](#), [Launceston *](#), [Strahan](#)

From Coconut Milk Run doc

Gifts and trading

Tonga is the least well-off country we visited. Tonga has always been self-ruled and they are very proud of this fact. However due to this, they do not receive the subsidy that French Polynesia or the Cook Islands receive from France and New Zealand respectively. You therefore may want to save some trading items for Tonga. When we return to Tonga, we will take school supplies to give to the local schools.

Art and Gifts

Marquesas

Don't miss the Tapas in Fatu Hiva (we had friend pick one up for us). Wood carving is an integral part of all of Polynesian cultures. However, in our opinion the Marquesan carving is the very best we've seen. If you want a wood carving buy one there. They are of the best quality you'll see and up to a 10th the cost of what you'll pay for the same quality in Tahiti. We had friends who got beautiful pieces in Fatu Hiva. We bought a piece in Ua Pou and several on Nuka Hiva.

Tuamotus

Pearls, pearls, pearls. Discussed in later section

Society Islands

The Society Islands are expensive. However, many of the galleries have art from the Marquesas. For less expensive souvenirs, check out the main market in downtown Papeete. Cathy bought several pareos and some small souvenirs from a large market they had set up for Fete. Papeete also has jewelry store after jewelry store of beautiful black pearls, but they are extremely expensive. Looking in the stores, although fun, did make us glad we had bought and traded for pearls in the Tuamotus. We did have some pearls set in Papeete which wasn't too unreasonable.

Rarotonga, Cook Islands

Rarotonga, has similar things to what you will have seen in the Societies, but is cheaper. Rarotonga is known for their weaving. They make beautiful fans, purses, etc. There are carvings and Cook Island black pearls that are reasonable in price, but we thought the pearls and carving in French Polynesia were much nicer.

Niue

There isn't much shopping on "The Rock." There is some nice basket work, but if you're going to Tonga, you may want to wait until you get there.

Tonga

Tonga is known for its beautiful basket work. In Vava'u, you'll have locals come out to your boat in boats full of crafts. There's also a market and several shops. The baskets are really wonderful. They also have carvings which are not as refined as what we saw in the Marquesas, but were still interesting. They also have a lot of Tapas which are quite different from those in the Societies. They have some unique 3-dimensional tapas often featuring turtles or whales.

Black Pearls

Save some money for black pearls in the Tuamotus. You may see some in the market in the Marquesas. One woman we talked to in Nuka Hiva, whose parents had a pearl farm in the Tuamotus, had a nice set of pearls at reasonable prices.

However, you will most likely acquire your pearls in the Tuamotus. Most of the atolls in the Tuamotus will have pearl farms. However, if you want to trade and/or buy some pearls you can't be shy. Some people may come to you, but if not don't be shy. Ask around. On Makemo, Cathy talked to five different people (men and women) and traded with three of them. You may want to look around some and not buy from the first person you talk to. The prices were not that different, but the quality was.

There are two types of pearl farms in the Tuamotus. There are large corporate owned farms, and smaller family owned farms. Your best luck for trading for reasonably priced pearls will be with the smaller family-owned farms. The larger farms often will not talk to individuals as the pearls are not owned by the locals.

Cath bought the nicer pearls that she would up with. Black pearls are rated A, B, C, D; A's being the nicest quality. Black pearls are rated based on roundness, imperfections or flaws, and color. She bought some very nice B pearls which were round with good color and only had one small flaw which could easily be hidden in a setting. These were \$20-\$35 per pearl. In addition to the round pearls, there are a wide variety of Keshis (pronounced key-she). These are the irregular pearls. Cath found that she began to like these as much or even more than the round ones. She only traded for these and did not buy any. We were also introduced to carved pearls. She traded for one already carved, and also picked out a pearl and had it carved. These are really unique and beautiful. Ask to see if there are any pearl carvers on the atoll where you're looking at pearls.

What to trade. The pearl farmers may live on remote atolls, but they are not poor. They make a very respectable living from pearl farming. The sorts of things they want to trade are items that are hard to find. However, for large trades for nice pearls you need to have high-end items or just pay cash. Whatever you pay or trade, you will be paying a fraction of what you'd pay in the Society Islands. They wanted DVDs, DVD players, CD Discmans, Music CDs (reggae, particularly Bob Marley will make you very popular), liquor, and VHF handheld radios. Some of the women who trade may be interested in small gold or gemstone earrings for their grand kids. For lesser quality pearls, you may be able to trade sandals, watches, make-up, etc. What they want to trade will depend on the atoll and what sorts of items they have access to on a regular basis.

When you're trading, ask to look at the pearls, pick out what you'd like and then start to offer one trading item at a time. Whatever you pull out of your bag, they will assume is part of the deal. If you dump everything out and ask them to select what they like to add to the trade, they may assume you are offering everything in your bag. In hindsight, it was just as easy to pay cash for the round pearls. The prices seemed really consistent. Have some fun trading for the Keshis.

Enjoy, and whatever you do, don't wait until you get to the Society Islands, unless you expect to spend hundreds or even thousands of dollars.

Checking In to New Zealand

For all the current rules and regulations, pick up a check-in packet in Tonga or Fiji before leaving. We found the packets at Sailing Safaris in Tonga. In this excellent packet you'll find Customs and Immigration information and forms. You'll need to provide Customs with a 48-hour notice of your arrival. Des can do this for you if you're checking in to his net. There are also several forms to fill in and doing these before you arrive can save you time.

Most cruisers arriving in New Zealand check in at Opuia as it is the closest port to the tropics, though if conditions permit, some carry on to their final destination. We arrived in the middle of the night and Des provided excellent directions and waypoints for the entrance to Opuia. We had no problems. The marina in Opuia was not on our charts but was easy to find – it is where the Yacht Club is indicated.

During business hours, contact Customs on VHF 16 for directions. After hours, there are three good options. The Customs dock is a side-tie on your starboard coming in and has room for one boat. If that is occupied, the long breakwater dock on your port side is also marked for quarantine. Lastly, you may anchor out – ensure your quarantine flag is flying. Customs will contact you.

Quarantine

Try to arrive in NZ with no fresh food if you can. The MAF (quarantine officers) were very nice. They were very reasonable on liquor, we had to pull all of ours out but we had over 8 full bottles of liquor and it was no big deal.

They will take:

- all cheese
- fresh and frozen meats
- canned meat from the UK and some other European countries
- all fresh produce
- milk (US dried milk and canned milk was OK)
- opened butter
- all eggs, fresh and dried.
- Nuts only in their shells
- Popcorn
- Honey, unless unopened and made in NZ
- Your trash and vacuum bags – yeah
- They may ask to see your hiking boots to check for dirt – they would clean them not take them
- Bottom paint, unless approved in NZ
- Asked about bug spray, but let us keep our one can of Raid as long as we promised to only use it on the boat.

They did not take

- Canned meat from the any place we had been
- Canned cheese from the US
- Peanut butter
- Tapas, wood carvings and baskets (they asked if we had them, but didn't take or even ask to see them.

First-Timer's Guide to New Zealand

If you've found this guide helpful, look on www.svfelicity.com for our new First-Timer's Guide to New Zealand.

Tahiti Ocean - The first agency dedicated to the service of luxury yachts in French Polynesia.
www.tahiti-ocean.com/

ROYAL CRUISING CLUB

FOREIGN PORT INFORMATION

2002

Disclaimer

This folio was compiled from information supplied to members of the Royal Cruising Club and is amended from time to time from information sent to the Area Editor or the Club by members and others visiting the coast concerned. Information may be incomplete as some harbors, anchorages and channels remain unvisited for considerable periods. In any event, the Club has no means of checking that information is either correct or adequate or that any sheet is up-to-date. The Royal Cruising Club does not purport to supply all the information necessary to visit a port and navigational information is included only to supplement that which can be obtained from charts and sailing directions. Obviously there is a risk in following blindly information, particularly navigational, which may not be up-to-date. FPI folios, supplements and club occasional notes are intended for the exclusive use of members of the Royal Cruising Club, and neither the whole document nor individual pages should be photocopied or otherwise reproduced without the permission of the Hon. Sec. FPI or the relevant Area Editor.

Scope

This folio comprises general information, recommendations concerning books and charts, notes on equipment on board, and port information from the Panama Canal to Tonga, including the Galapagos Islands, Marquesas, Tuamotus, Tahiti and Society Islands.

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I. GENERAL

1. Pre Departure: Read as much as you can about the area. Read old logs (Roving Commissions published by the Royal Cruising Club is a good source). The OCC has excellent port information; join as an associate member before you leave as you will become eligible by the time you get to the Caribbean. The Cruising Association has a very comprehensive library including reports from members. We photocopied over a hundred pages which proved invaluable. Visit museums to get a glimpse of the culture before you arrive. Look at Websites for the countries you are going to visit (especially the smaller countries)

2. Cameras: Expect cameras to have a limited life. Take spares and lots of film. We did underwater filming with video and also still but this was VERY expensive in camera loss. I suspect that the cases sold as "Good for 2 meters" are not up to the job. It does not need much sea water to ruin a video camera. Digital still cameras (see other equipment below) have the great advantage of unlimited capacity and the ability to take, print and give photos to locals the same day (see computers below). A good zoom on any type of camera and UV filter is useful.

3. Computers etc: Like cameras computers suffer from on board life. (we carried two laptops). The computer was used for : Tides, Csat , Weatherfax E mail, logs, crew lists, letters on behalf of locals, on board lists, storage notes, written instructions. Photo processing both from still and video (image capture) Putting photos on disk for e mailing (much appreciated at home)
In addition we carried a cheap and small bubble jet printer (take plenty of cartridges)

With the digital camera we found that the computer was rapidly filling up and also became nervous of losing the lot. The solution was a CD writer which means all our photos are on one disk. A good waterproof and impact proof bag (eg Aquasac) is needed for taking a computer ashore.

4. E mail: We are on Compuserve and initially took the computer ashore to plug in to a telephone line. This became more and more difficult as we travelled west. Acoustic couplers are unlikely to work because of the quality of the phone lines. In virtually every port there was an e mail café (although prices varied considerably) and the solution is to have a readily available server such as "Hotmail". It is possible to convert a Compuserve account to a "POP" account and then use Hotmail. A member of crew who is on "Virgin" at home used "Twigger.com" via the internet to access and send as if from Virgin. It is essential to check these changes out and set them up before you leave home. Having e mail on the boat is very useful. It removes the need to go to a port in search of a café and enables one to keep in touch. We were over three months away from any shore based e mail. On board is very useful for ordering spares, specialized weather forecasts etc.

There are two routes:

a) Using SSB. HAM operators have good facilities. There is also "SAILMAIL" (details are on their web page) (e mail is SYSOP@SAILMAIL.COM) with transmitters in California, Hawaii, Australia. This gives good coverage and was very popular.

b) Satellite. We used Csat. It has 100% coverage and is very reliable. It is expensive (3p or 5 cents a word for in and out). Senders have to be authorized and messages paid for by the skipper. This makes it impossible for commercial transactions.

5. Snorkeling: Buy the best equipment you can and check that you are comfortable with it. Equipment is readily available in the Caribbean and Panama city. A 'shortie' 3mm wet suit is a good idea. The water is cooler than the Caribbean and you will be spending several hours in the water. Choose flippers with which you can wear reef shoes inside as you may have to walk across a reef to get to the snorkeling area.

Have net bags for carrying snorkel gear. A lightweight wet suit or snorkel skin is a worthwhile investment to protect yourself not only from sunburn, coral scrapes, stinging sea lice and cooler water, but also from close encounters with barnacles when cleaning your hull. Available in London from Ocean World under Charing Cross bridge. If you are a diver you may already own a wet suit. If not consider buying one in the US or Venezuela as they are cheaper than in the UK. (KH)

6. Gifts: Gifts for children are easy. Coloring books, pencils, felt pens, lollies, balloons. We wished that we had had a supply of good illustrated books (in French for French Polynesia). We kept coming across schools that were crying out for books. Gifts for adults proved much more difficult and the recommendations that we had read were out of date. I would suggest videos (especially cartoon ones which are universal), CD's and tapes. Also tools, clothing, toiletries, perfume, cosmetics, snorkel masks, seeds suitable for tropic/ dry/ poor soils, drills/ bits, T shirts (large or XL), old glasses, sun glasses, toy binoculars, magnifying glass, body crayons, sparkly stickers, simple balsa gliders. DVD's are now popular and we found that a burner was essential to copy CD's to trade with or simply for gifts. Ever popular music is Bob Marley, Bob Dylan, his old music, as well as country and western type music. We found cosmetics of no use in French Polynesia, but cheap watches and costume jewelery proved useful. Sunglasses, unless they are 'designer' i.e., Ray Bans, Oakley's etc. have absolutely no trading value. Toys and gifts for the children are greatly appreciated. Schoolbooks, crayons and pencils are also appreciated. Gifts for the children, not sweets, are popular and you will be surprised how generous their parents can be. (KH)

The choice of presents to give or trade with in the islands is difficult and always changing. It also varies between island groups. Parts of French Polynesia are sophisticated and CD's or videos are in demand. Other, poorer islands will be delighted with much simpler gifts. This year we were in Cook island and Fiji. For children balloons are always welcome and provide a good introduction to taking photographs. Crayons, pencils, notepads are appreciated by the junior schools. Often we were asked for provisions that they may have run out of e.g. butter, flour, milk powder. reading spectacles were a huge success (either old ones or the "over the counter" type; have a range of magnification. We have a digital camera, computer and printer on board and instant photos of people were much appreciated, but you need a good supply of color print cartridges. (GM)

Courtesy ensigns: We consider these essential although a lot of boats did not fly them. Buying a full set is expensive, but in most cases they can be made (Collins Gem guide Flags gives all the pictures). Sew the simple ones, use acrylic paint for the difficult ones.

Cash: There is no need to carry traveler's cheques which have the big disadvantage of having to pay up front. Bear in mind that your cash is far more secure on a boat than in a hotel. We carried a reserve of U.S. \$ which was useful if we had no local currency but most of it was changed at the bank into local. Do not take French francs, they do not want them in French Polynesia. Cash is available by credit card just about everywhere. There are quite often ATM's, otherwise cash can be obtained in the bank. Visa is the most popular but in some places only Mastercard was acceptable (Galapagos). You will be using cash a lot more than at home. Most restaurants and fuel supplies required cash. Remember that if you have to cancel a card, any joint card gets cancelled at the same time. Carry some cards in individual names. Carry spare cards. Make sure that the expiry date covers your passage. (DHL would not allow a card to be included in a package to us)

Mail: Because of the uncertainty of your itinerary and postal delays this is difficult. The neatest (but expensive) method is to contact your home base when you are firm about a port and time and get mail sent by DHL/Fedex or equivalent. Make sure you have an address in the Port to which the package can be sent.

10. Crew Joining: A number of skippers (including myself) experienced problems with airlines re crew joining. If your crew does not have an onward ticket from the airport where they are to arrive then they will not be allowed on the plane at their departure airport (This happened at Heathrow, Los Angeles and Auckland to my certain knowledge). A letter from the skipper used to be enough but not anymore. It is now necessary to get a letter/document from the immigration department of the country where they are due to arrive plus a letter from the skipper and these have to be faxed to the departure airport. (GM)

11. Medical: There are plenty of books on what to bring and your local travel clinic or G.P can you give you up to date information on injections. MASTA will send you a full list of inoculations and malaria requirements. Nobody in U.K. mentioned Elephantiasis which is endemic in the Marquesas. You can get protection from the local doctor when you arrive.

We found the two best books were : Travellers' Health by Dr. Richard Dawood and The Ship's Captain Medical Guide, H.M.S.O. Get a copy of the BNFL from your local GP, has a lot of useful information as well as 'translation' of drug names. Other books list drugs to take but remember plenty of dressings and tape as injuries are much more likely than illnesses. Real elastoplasts (not waterproof) is impossible to get outside UK and we find it is the best for staying on. "Protect Strips" from 3M are really waterproof and stay on. Melolin sterile dressings pads are good to have. We had a large bottle of iodine (Povidone is non stinging) and used it on coral grazes and other cuts with great success.

Although dengue fever is endemic and should be avoided if possible, we didn't hear of anyone suffering from it this year. The dengue-carrying mosquito bites during the day as well as early morning and evening. Anti bug protection is essential. Deet 50% is the best. Ciguatera is prevalent through the Tuamutos so please check carefully before catching fish in the lagoon. Several people ignored the advice and were extremely ill. (KH)

12. Formalities: We found all the authorities very helpful and easy to deal with. A word of warning: Be very careful with your declaration when arriving in French Polynesia. You may have been lulled into a casual approach by the Caribbean or other areas. We heard of many instances of boats being boarded by the French Customs patrol vessel and being searched. There were several instances of boats being fined/ drink confiscated. If you have a lot of drink it may be sealed, but the risk of this was greater if there were unopened cases. The rules in French Polynesia are subject to interpretation by the local Gendarme. Some insist upon you checking in at their island N.B. Nuka Hiva was very strict. Others did not want to know. For E.U.citizens the 'Bond' has ceased but in theory you are still limited to three months. This could change as French citizens have unlimited time. To get a visa extension apply to the High Commissioner at Papeete immediately after you first arrive (It can take two months +). See earlier OCC notes for application details. To extend your visa, write a letter detailing your proposed itinerary, along with the yachts registration number, your passport number and the date when you checked in to French Polynesia and post to:- Direction de La Reglementation et du Controle de la Legalite, Blvd Pomare. Papeete. It is advisable to do this right away. Note. Visa extensions were being discussed at length whilst we were there and the following year may be different again. (KH)

13. Language: The better you can speak and understand the language the more enjoyment you will get from your voyage. Spanish up to the Galapagos, just a few words will make a tremendous difference. In French Polynesia French is essential. Some boats missed the best islands because they had no French. Brush up your school French. It is easier than talking in France as French is a second language for Polynesians. English is spoken in the Cooks and Tonga, but local greetings and phrases were much appreciated. The Lonely Planet South Pacific phrase book is good and also has advice on etiquette and local customs.

14. Attitude: This is mentioned in a lot of books and guides but it worth repeating. Remember that wherever you are, it is THEIR country. The Customs officer may do things differently from H.M. Customs, smile, answer the questions and fill up the forms. Walking around try not to wear sun glasses; eye contact is very important. Always ask before taking photos (people nearly always say 'yes'. Do not rush at conversations, let the relationship evolve. If you want to buy or exchange take it gently, admire the products, talk about the materials and the person who made them. Get the maker's name written down for you. Take a photo of the maker. Let the local people lead you and it will all happen. If you want to get to know a place or the people a week is nearly always the minimum. The difficulty is that after week you become aware of so much more that it is difficult to move on. When asking questions, try and phrase them so the answer is not "yes" or "no" as people will always want to please and will answer "yes"! Finally, remember the SSCA motto, "Leave a clean wake". Whatever you do will have an impact on the next boat to come.

15. Timescale: This will be determined to a large extent by the weather patterns. Early March is probably the earliest for leaving the Canal. (El Nino years cause hurricanes to move further East). Also the Trade wind is not usually established until end March/April. The Marquesas and Tuamotus are very special. Almost impossible to visit except by your own yacht and then except for the brave and strong only from the East. I would maximize my time in these islands. The people were very friendly and the snorkeling provided a bench mark for everywhere else. The perceived wisdom is not to leave Tonga/Fiji before November for N.Z.

16. Weather and communications: Try and learn about the weather systems before you arrive. Bob McDavitt's book is good. Look at web sites with weather (see Bob's book). Get weather fax from the websites before you leave. Russell Radio in New Zealand (Des) is an excellent contact when on passage and Des will interpret the weather faxes rather better than you are likely to do. Times and frequencies are as follows:-

13,137 at 0800 and 1600

4,445 at 0730 to 0800 and 1900 to 2015

These times are New Zealand clock times and the UTC time will alter when N.Z. moves from summer to standard or reverse. Des now operates a "roll call" system and first contact should be made at the end of the roll call. (GM)

Weatherfax: New Zealand fax is still excellent west of 130 and south of 10. It does not cover the equator.

We used the Fiji forecast (received on Inmarsat). The weatherfax operates as follows:5807 on the hour
9459 at 15 minutes after the hour

13,550.5 at 30 minutes after the hour

16,340.1 at 45 minutes after the hour

The relevant hours are :

SW Pacific analysis 1000 and 2200

30 hour prognosis 1200 and 2400

48 hour prognosis 1300 and 0100

72 hour prognosis 1400 and 0200

Tasman sea analysis 0900, 1500, 2100, 0300

Schedule 1100 and 2300

All times are UTC.

The analyses show fronts and speed of movement of systems

The 30 hour shows fronts

None show wind speed or wave height (GM)

We found that our old ICS software stopped working in the Pacific (or maybe it was the demodulator). Coretex (available from West Marine) is a Windows based system and is excellent. Most people used a

laptop plus SSB. Have the Admiralty 'Radio signals' on board but be aware that schedules are always being altered. We used Hawaii , New Zealand and Australia (Canberra)

Nets: There are a number of nets. In 2002 for the Tonga and Fiji area the "Fastnet" was very good and quick. It gave weather and other important information. No reporting by boats but an opportunity to make contact through the net. It operated on 8104 at 0800 (local time Fiji) (GM)

Specialists: Herb covers West of Panama and sometimes up to Galapagos. He was invaluable for the Curacao to San Blas passage. David Jones covers Caribbean. You will find that the nets have a yachtie specialist who does the weather. We were fortunate in having one who was very good and had done a lot of research and got in much more information than we could possibly have obtained Russell Radio relays forecasts and will give warnings on the N.Z. run of bad weather.

Bob McDavitt will provide 5 day detailed forecasts by fax or e mail. There is also a free weekly output on e mail from him. Having Csat we received detailed text forecasts twice a day (free). It is important to get the weather information every day if one is going to understand what happens.

17. Fishing Technique: With our lack of success I probably should not be writing this. Next time round I would get some heavy line (100 or 200 lbs), decent size hooks and lures, a hand held reel and some old inner tube to give a shock absorber. We used a running bowline around the fish for final hauling in. Old leather gloves are useful for handling fish and protection against spines. A good filleting knife is essential.

18. Photo Album: We made up a photo album of photos from home. This was a very good 'ice breaker' and overcame any language problem. Children loved going through it. Favorites were photos of us in different garb/environment, our children/grandchildren and boats . We have a Thames skiff made of wood and this provoked much interest. I suspect that any interesting UK craft would be of interest.

19. Food and Drink: Here are some of the items we found useful, bear in mind that many are not available in the Pacific:

Dry Yoghurt culture (NA in Pacific)	Tinned ham and meats from UK/Europe are best
English mustard powder (NA in Pacific)	but Corned Beef from NZ is best
Nido or Sunshine dried milk	Vacuum packed cheeses
Teabags	Limes/lemons (buy in bulk when you can)
Marmite/Vegemite (UK Marmite NA in Pacific)	Potatoes
Tinned butter	Honey
Yeast	Olive oil
Soy sauce	Condensed milk
Curry powder, Chilli, Paprika.	Water biscuits
Fresh ginger	Ryvita (NA in Pacific)
Black peppercorns	Muesli
Garlic	Real coffee
Dried foods (rice, pulses, fruit, flour white & brown, ceps/mushrooms, broad beans)	Plain chocolate
	Nuts, crisps, tinned mussels & squid
	Popcorn (use a non stick pan)

I would recommend that what ever your 'junk food fix' is, stock up where and when possible. All kinds of cereal are easy to find. The only sugar free drink we found, but not everywhere, was diet Coke and occasionally sprite. 'Clight' fruit juice drink crystals, sugar free and exceptionally good tasting. Stock up if you see any. Widely available in Mexico and America. Lemon and red grapefruit are our favorites. In French Polynesia in the shops the staples are subsidized and the prices are marked with orange stickers:

rice, butter, pasta flour, potatoes, onions etc. Excellent provisioning available in Tahiti but it is not cheap. Some people advise to wait until Rarotonga to re provision with good meat and wine from New Zealand – at New Zealand prices. Don't forget that weather will determine the possibility of stopping there. There are basic supplies available in Neiafu, Tonga. (KH)

Drink: French Polynesia is horrendously expensive. Stock up in Colon, Rarotonga with as much beer/wine/spirits that you can stow. N.B. See note under formalities re declaring drink. You often have an excess of fruit all ripening at the same time. We used the liquidizer to make drinks (usually with rum added)

Their chateau cardboard (boxed) is OK if desperate. We never met nor were boarded by the customs boats but they do the rounds and do remove or fine heavily any excess alcohol. (KH)

20. Sunglasses: Good polaroid are essential. If you wear glasses normally then get prescription polaroid, they transform navigation in coral. II. BOOKS AND CHARTS Some books are more useful than others whilst some are useless. What you buy will depend upon your budget. This list is in priority order. Unfortunately, some books recommended by other books come into the “useless” category usually because they are far too general.

Charts: Admiralty are excellent, get as many as you can afford. A lot of large scale charts have now disappeared from the catalogue and it is necessary to get the local country's charts. New Zealand charts are listed in the Admiralty catalogue. The French charts for French Polynesia are excellent. They can be obtained from Kelvin Hughes or direct from SHOM (who are very quick), (13, Rue du Chatellier, 29200 Brest, Fax 02 98471142)

We used C-Map electronic vector charts. They are mostly French and are WGS 84. (KH)

Pilots: Get the Admiralty for every area. They have more detail than many of the yacht pilots and will substitute for large scale charts. Cruising Guide to Panama, incl. San Blas & Pacific Isles
Charlies Charts – Very good and now well thumbed Tahiti & Society Islands – Marcia Davock a bit out of date but still very useful Tonga – Moorings Guide – Invaluable Haapai by Phil Creegan. Useful but use with caution
South Pacific Anchorages, Warwick Clay, Imray ISBN 0 85288 4826 (KH)

Background books

Lonely Planet series - get all the books for each area
South Pacific Handbook – Moon publications
Ecuador & Galapagos Handbook Footprint publications

Marquesas and Tuamotus:

Typee - Hermann Melville Fatu Hiva - Thor Heyerdahl
The Kon Tiki Expedition – Thor Heyerdahl

Polynesia:

Happy Isles of Oceania – Paul Theroux

Galapagos:

Floreanna – Margret Wittmer
My Father's Island – Joanna Angermeyer

Early Voyages:

Captain James Cook – Richard Hough

Voyage of the Beagle – Charles Darwin

Life and Death in Eden – Trevor Lummis about Pitcairn (Good for info. on Marquesas)

In search of Tusitala – Gavin Bell (about R.L Stevenson)

Wildlife:

Coral Reef fishes – Collins Pocket guide

Books on Whales, sea life, trees, plants,

Cruising accounts:

e.g. Moitessier, David Lewis, Marcia Pirie, Hiscock,

Paul Gauguin – Letters from Brittany & South Seas

Cookery:

Try and get a book on cooking tropical foods (we did not think of this)

III. EQUIPMENT ON BOARD

The following we found useful or would like to have had:

1. Bimini Hood: Absolutely essential. Make sure the construction will stand up to 30 knots of wind. We keep ours up virtually all the time.
2. Towed Generator: Very useful on passage. We kept it on the stern deck ready for use and streamed it for any passage over 25 miles. Gives 6amps at 6knots. We have an Aquair which has worked without problems. I am going to have a special fitting made up on the stern rail to avoid the rope suspension system.
3. Wind Generator: In a lot of anchorages this gave a very useful input. We have an Aerogen 6 which has been trouble free. Permanent and strong mounting is important.
4. Diesel Generator: (Wish that we had had). Electricity consumption is high when at anchor and often there is not enough wind for wind generator.
5. Csat: The Inmarsat C system was one of the best things on board for communication. It is 100 % reliable with full coverage. E mail to & from friends and relations were excellent but are expensive (3p per word). It is part of GMDSS and twice we used it for distress situations which gave us immediate contact with shore MRCC stations and avoided all the unreliability of SSB propagation. Weather Forecasts come in twice daily free of charge.
6. Good ventilation: have as many opening hatches as you can manage
7. Reliable electric windlass: You can be anchoring in 90 feet +
8. Spares: This is difficult. We carried a lot but one is not that far from civilization. Most places had Fedex or DHL and spares could be shipped in swiftly.

9. Portable Echo sounder: (looks like a torch, available from West Marine). Used from dinghy for difficult approaches and checking swinging circle 10. Self steering: I consider this a must although some boats managed with an auto pilot alone (plus plenty of spares). We used the Monitor and the light wind vane proved invaluable. Down wind was no problem. Hydrovane was also very popular and gives you a reserve rudder if the ship's one should fail.

11. Chain: We carried 80 meters, I will increase this to 100 in N.Z. Make sure chain is in good condition before you start as it will be worn out by the end. Adequate size/strength is vital. One boat was lost when their chain parted and they went onto the reef. Chain will get wrapped around coral so that the scope is very short putting tremendous loads on the chain. We have found that using colored bungee cord + electric ties are the best method for marking.

12. Dinghy and outboard: The dinghy will get very hard use. Sometimes distances are considerable and it must be capable in choppy seas. The dinghy will be your shore link, your supply tender and your excursion vessel for snorkeling. The favorite dinghy is the Caribe (made in Venezuela, available in Trinidad and throughout the Caribbean). It has a hard bottom and big inflated side tubes. Often carried on davits but also on deck. Favorite o/board power was 9HP enabling one to plane, but bear in mind this is heavy, not only to get on deck but also on the beach. One solution is to fit wheels (see West Marine). It must be easy to get on board the dinghy after swimming.

Consider carrying a spare o/bd of say 2HP.

13. Boarding ladder: Getting aboard the main vessel can be tricky in the big swells.

14. Fridge and freezer: You can almost guarantee that any European equipment will be inadequate for the Tropics. The water temperature is 80 degrees F or more and air temperature will be the same. So even water cooling only partly helps. Assume for electricity that the fridge will be drawing power for 60% of the time (this assumes good insulation)

15. Sails and rigging: These are going to get very hard wear. If in doubt, replace before you start. Unless you are dedicated, leave the spinnaker behind but do have a light weight genoa. Furling headsail and easily reefed main are essential. Ability to boom out the genoa is important.

16. Butane/propane: This is readily available. We have USA bottles and fittings which could always be filled. Some boats with European fittings experienced problems. We bought a Camping Gaz cylinder for French Polynesia but it was almost impossible to get it exchanged. With three people on board we carried 50lbs capacity and this was fine. With three people on board we used just over 10lbs per month. Tahiti is the last place in French Polynesia where it is possible to have your gas tanks refilled. Elsewhere you have buy a new tank. (KH)

17. Radar: Several times proved very useful for sighting vessels, rain squalls and arriving at night although we always had daylight for first entry into a harbor.

18. Watermaker: This is very high on the list of 'must have'. Ours is engine driven supplied by Seafresh . The only problem was with the salinity sensor which I wouldn't bother with next time round. An hour produced 12 gallons and this was a bit more than our consumption. Plusses are guaranteed safe water, freedom from having to go to ports for water, showers at sea and in any anchorage.

19. Strobe Light: Although not legal, I consider this a very useful safety device to have fitted. We also had a portable one which we could use in the dinghy/liferaft.

20. Tape Recorder: Get one with a good small mike. (Sony do a good one). We used it for recording weather forecasts & vital broadcasts including emergencies, church music (hidden in a bag), dance performances, chat on the SSB (a nice reminder)

21. SSB: Almost an essential. Very useful for keeping in touch with other boats, nets, weatherforecasts. Try and get one before DSC becomes mandatory. Good installation is the secret. Some boats were always strong & readable. ICOM is the favorite. SSB is also a cheap way of getting Weatherfax and e mail.

22. Bicycle: white LED pulsating light; useful on the dinghy or for someone marooned ashore.

23. Dinghy anchor & line: Essential for snorkeling and holding dinghy off some landing places.

24. Hand Held VHF: (Preferable waterproof) Very useful when coming into harbor, ashore for contacting mother ship and also should be in the grab bag when on passage. Important to have a spare battery.

IV PORT INFORMATION

Introduction:

These notes supplement existing information published in the recommended pilots and the cruising information available from the Ocean Cruising Club.

The following pilots (see separate notes for details of pilots) are recommended together with the abbreviation used in the notes:

Admiralty: AP

NP 7A Trinidad to Colon

NP 7 Balboa to Galapagos

NP 61 Niue, Tonga, Minerva

NP 51 New Zealand

NP 62 Marquesas to Cook

Islands

Charlies Charts CC

Panama Cruising Guide PC

Society Islands SI

Charts used were either Admiralty or French (SHOM). Care should be taken to check numbers against the current catalogue since numbers and coverage are constantly changing. The Admiralty publishes a number of New Zealand charts referred to below.

French charts proved excellent for French Polynesia; they were large scale and up to date.

Curacao

Charts: AC 702

Anchorage: Located in the N.W. of the harbor. After entering from the sea turn to port and head West. There are reefs coming from both the Northern and Southern shores. Do not turn to starboard for the marina, it is a long way from anywhere. Note that it is planned to restrict the anchoring area for the benefit of local yacht racing.

Formalities: Offices are all in town. Get the bus from the anchorage to the bus terminal.

We only had to see Customs and Immigration but some boats had to see Port Captain. The Customs will advise. Customs are located in a new smart building just past the market. Immigration is located in a blue and white building in the cruise liner jetty you need to walk along the jetty parallel to the cruise liners and it is at the end. Both offices have to be visited when checking out. N.B. Customs will not give you an exit clearance document unless you ask (and pay) for it. This is essential for arrival in Panama.

Fuel: We used jerry cans, but it is possible to go alongside at the Yacht club (check depths). Check the opening hours which are rather strange.

Restaurants: Two cheap and reasonable ones in anchorage, one of which, Sarifundy's had some services: showers & laundry. Good selection in town.

San Blas Isles

Pilots: PC

Charts: AC 2417 (This only covers part; get a copy of the USA chart at Sarifundy's, Curacao)

Formalities: We never checked in and this practice was followed by a number of yachts. We were specifically warned not to go to the port on the Colombian border as the last yacht had arrived with bullet holes in the hull.

Colon and Panama Canal

Pilots: AP, PC

Charts: AC 1400

Anchorage: The choice is between the marina or stern to on the wall or anchored on the flats which are a clearly defined area marked by buoys. We opted for the anchorage which involved a lot of dinghy work (sometimes rather wet) but it was fresh and breezy. The marina/wall had the advantage of being able to walk ashore. It was airless, cost money and usually was full up.

Formalities: It is essential to contact the Port Captain by VHF (12) on approach to breakwater as this starts the 'clock' for the canal transit. N.B. The routine for arranging transit is constantly changing. Immediately on arrival talk to other yachts to check up. The next stage is to get ashore, telephone the Port Captain's office and get a time for the Admeasurer to come (unless the yacht has previously transitted). Next get one of the local taxi drivers to take you around all the offices (we used Willie and Walter, who were both fantastic.) Do not use an agent. We did and it cost us \$500. We gained nothing and actually went through later than other yachts who had arrived the same day as us. We saw no sign of 'bumping'. The agent recommended in the OCC notes should be deleted. Phone the office every day to check your position in the queue. You may go through in a few days but we waited two weeks and this seemed to be normal. Do not arrive just after carnival (we did and it took a week

before things were back to normal). I believe the Canal will now take credit cards, but this only came in after our transit. Otherwise you need to draw a lot of cash (US \$1,250) and that is dependent on Bank opening hours. The 'transit clock' stops until you have paid the cash. The deposit was refunded to our home address in three months with no problem. In 2001, the fees for transit were \$500 for boats under 50 feet + a deposit of \$800. All could be paid by VISA, although some cards work better than others. Many people were transitting in one day, which seems to be encouraged at present. Don't break down (i.e. make sure your engine is in good working order)! It can cost in the region of \$2500 for additional pilots, towage, anchorage in canal etc. In theory there is a cruising fee payable per day for Panama (the country). This would be applicable until one departed from Balboa. It would be a lot of money. We heard rumor that boats checking in at Porto Bello were being charged this, but no mention was made of it in Colon. We checked out and got our clearance document at Colon, which is easier than waiting until Balboa.

Fuel: Can be obtained at Marina but much easier at Balboa and you will want to top up before the Galapagos passage.

Gas: Taxi drivers will arrange refill

Laundry: Laundromat in town

Chandlery: Only in Panama City. Fuel cans can be obtained from the supermarket in Colon. We had 40 gallons on deck for the passage to Galapagos.

Provisions: Excellent local market for vegetables, fruit and fish but meat was not good. Two good supermarkets, transport provided by them. It essential to stock up as prices are astronomic in French Polynesia. We did all our stocking up in Colon. Balboa is a long and expensive taxi ride from Panama City. In 2001, those buying eggs in the Galapagos repeatedly found them to be stale. So stock up in Panama. Duty free area for drink, share order with other yachts to save on delivery and admin. Costs. Limited choice but this is the place to stock up with as much as you can afford/pack in. You will not see reasonable prices for beer/wine/ sprits until you reach the Cook islands probably five months away.

Restaurants: The yacht club is the meeting place and serves mainly Chinese food in vast portions very cheaply.

Security: Colon is the only place we have been to where it was not safe to walk and it was essential to take a taxi everywhere. Guards with automatic rifles outside supermarkets are an indication of the state of things.

E mail: Two locations in town. Quite expensive. It was possible to plug in ones own computer.

General: Waiting at Colon is where you will first meet the boats which almost certainly you will be in company with for the next eight months. A visit into Panama City on the bus is a pleasant day out. The canal museum is fascinating and is a must before you transit. There are good restaurants and you can walk around freely. There is a tolerable chandlery and we also managed to get a new gas cylinder with USA fittings at TropiGas

Transit: I would strongly recommend having at least one (we had two) professional line handlers whom the taxi drivers can arrange. They know the system and speak the language. It is also well worth going through on another yacht before your turn to see how things worked. Tires (wrapped in plastic) are available via the taxi drivers (we had eight), also the long lines required can be hired from them. Check your cleats, several yachts had very poor fittings and some pulled out. You will be holding three yachts on your line! When the admeasure comes on board you can choose the method of transit. We had heard of several horror stories about yachts going through with tugs and so opted out of that system. We were fortunate in having an excellent Pilot (Adviser) and went through in one day with no problems. If possible delegate one member of crew to look after drink & food (minimum of six people to be looked after). A high standard is expected by the Pilots. This person can also be photographer as you will not have time for that. The only damage we suffered (and we were not alone) was from the pilot launch hitting our stanchion. There is not much you can do to avoid this problem.

Balboa

Pilots: AP

Charts: AC 1299,1401

Anchorage: You are not allowed to anchor. There is a ready supply of moorings available and the club provide a launch service. It is possible to anchor past Balboa (free) at Flamenco Island, but there is poor access with the tides, so you would want to do almost all your victualling in Colon and only top up in Panama. A new marina is being built on Flamenco Island, not yet completed in 2001.

Formalities: Office at jetty for fees. (We had cleared out in Colon)

Fuel: Very convenient at jetty. Depth was just OK for us but at L.A.T we would have touched.

Provisions: Lots of supermarkets in Panama City a taxi ride away. Taxis were more expensive than Colon.

Restaurants: Plenty in Panama City

E mail: Several good facilities in Panama City especially Star Café in Via Argentina.

Puerto Ayora, Academy Bay, Santa Cruz, Galapagos

Pilots: AP

Charts: AC 1375

Anchorage: Keep on the East side of the bay away from the local boats. Use a stern anchor. Rolling can be a problem but we were quite comfortable. The water taxi service is useful but the skippers do not have VHF so getting one can be difficult by day and impossible by night, it is worth using ones own dinghy.

Formalities: Port Captain located on the seaward side of the main street. Immigration is in the police station a little way further on. You will need a Fumigation certificate. This can be obtained from the Zodiac repair shop located on the street which runs away from the sea. No actual fumigation is involved. Yachts are now welcomed , a three week permission is given and I understand this can be renewed. The Parks authority is at the Darwin Institute. It is necessary to get a pass (\$100 per person) if planning to visit park areas.

Fuel: Brought out by local boat in 50 gallon drums and siphoned in.

Gas: Same as fuel.

Cash: ATM but it only accepts Mastercard and not Visa.

Provisions: Small supermarkets. Excellent open air market once a week.

Essential to get there by 0700.

Restaurants: Several excellent restaurants, all very reasonable.

Wildlife: The Darwin Institute is free and that is the place to see the giant tortoises. By far the best way to see the other islands is by local boat. Yachts arranged exchange "caretaking" services so enabling crew to go off . We did a six day tour on the Tropic Sun which was fantastic. The tour guide was excellent (make sure he speaks English and is high grade [III]). Avoid tours with large groups. Our ship had a large capacity but only a dozen passengers. Take your own alcohol on board as it is expensive. There is a range of tours and prices available. Go to several agents as some only act for one shipping company. It is now possible to visit both Academy Bay and Wreck Bay, as well as Villamil on Isabela in your own boat.

Atuona Bay, Hiva Oa, Marquesas

Pilots: AP, CC

Charts: FR 7355, 7354

Anchorage: Do not go too far in as it shallows. At times a big swell enters the harbor making it very dangerous and if in too shallow water one would hit the bottom. There are two yellow posts on shore and one is not supposed to anchor south of them. We were on the Northern side, which although open was comfortable and safe. In this position it was important to keep south of the rocks off the shore. A stern anchor is essential.

Formalities: One stop only at the Gendarme (you are sure to get a lift into town). N.B. Be very exact with your drink/ tobacco etc declaration. (see general notes). Remember that one copy of the form has to be posted

immediately to Customs at Papeete. The Bond has ceased for E.U. citizens, who get a three month visa automatically for French Polynesia. Fuel: One can go stern to at the fuel station or take the dinghy. Best place to top up with diesel and petrol.

Dinghy landing: This can be very difficult a stern anchor is needed (essential). It is worth trying the rough slipway used by the locals for their canoes (N.E. of washing area just around the little headland). Landing on steps beneath building known locally as 'le frigo', where the local canoes are pulled up on the shore.

Restaurants: One café and one restaurant in town which were OK, others very expensive. We had dinner with John Ozanne (see Lonely Planet guide) who has been inviting yachtsmen for the last 30 years. It was an excellent meal in delightful surroundings and very reasonable.

Bank: There is one bank in town. Allow an hour to get cash as there is always a queue.

Laundry: Arrange through Café Kaupe in town (5Kg 1,500CFP)

General: Do take a tour of the island with one of the drivers. We went with Desiree Kekela (tel: Taaoa 927577) who gave us a wonderful introduction to the Polynesian way of life and food. (He only speaks French). Internet café had just opened in 2001, in a new pension on the way into town.

Baie Hanamenu, Hiva Oa

General: Steep sided bay headed by beautiful white sand beach and run down coconut plantation . Stream in south west corner of bay is best landing and leads to beautiful bathing pool under small waterfall. Bad no no flies. One family living in bay no facilities. Anchorage: in 10 meters on mixed rock and sand. Very roly (TC)

Baie Hahaiapa, Hiva Oa

General: Very beautiful flower filled village a short walk up valley. Home of the so called 'Yacht Club' run by very friendly local Dennis. He will give you vegetables and fruit so have gifts ready for his family. Two churches RC and Protestant in village .

Anchorage: Good anchorage in 15 meters on sand in middle of the bay. Dinghy landing on dock in south east corner, stern anchor may be needed. Facilities: Water from stand pipe on dinghy dock
One small island store with frozen bread . (TC)

Baie Hanamoenoa, Tahuata

Pilot: Warwick Clay (WC)

Approach waypoint: 09° 54.4'S 139° 06.5'W

Anchorage: 09°54.5'S 139°06.3'W. 10m sand. There may be severe gusts at night through the valley. Otherwise a very popular anchorage. (KH)

General: Possibly the most comfortable anchorage in the Marquesas and one of the few off a white sand beach . No village or facilities Anchorage: In 10 meters on sand in the middle of the bay. Good holding.

Baie Vaitahu, Tahuata

Pilot: WC

Approach waypoint: 09°56'S 139°07.90W.

Anchorage: 09°56.112S 139°06.69W 10m in sand Attractive village and friendly people. Visit Kiki the sculptor who lives at the top of the village. There is a small store with basic provisions. (KH)

General: Of historical interest as it is bay where all the early explorers first landed (Mendana, Cook, etc). Very beautiful new Church built in village to celebrate 150th anniversary of arrival of Catholic missionaries.

Anchorage: In 10 meters but not particularly good holding. Very roly and very difficult landing on dinghy dock in north east corner of bay.

Facilities: Water from stand pipe on dinghy dock.

Two well stocked island stores which also sold bread . Fruit can be purchased from the locals. (TC)

Baie des Vierges, Fatu Hiva

General: One of the most stunning anchorages in the world. Make sure you make the 1 hour walk to the waterfall at the back of the village and if feeling energetic the view from the mountain top by the white cross is worth the effort .

Anchorage - in 15 meters on sand in the middle of the bay. Be careful to set anchor well as strong winds gust down from the mountains. Dinghy landing in north east corner of the bay where a small boat harbor was being constructed in May 2002.

Facilities: Water, from stand pipe on the dinghy landing quay. A small 'island' store is up the road on the right where tins, flour, rice and eggs may be purchased . Bread is baked daily by baker on the road opposite the store. Fruit and vegetables may be purchased by approaching any of the locals. (TC)

Hakahetau, Ua Pou.

Pilots: AP, CC

Charts: FR 7353

Anchorage: Can be roly so use a stern anchor. 12 meters mixed sand and rock (TC)

General: The dinghy landing is exciting . Use oars and not outboard. Either lift the dinghy out or use stern anchor. The attraction of this village is Etienne who speaks English and his wife Yvonne who live on the main street. They are exceptionally welcoming and we stayed a week at this anchorage enjoying the island, people and church service. Stunning anchorage with pinnacles above. Village is home of Etienne who goes out of his way to welcome yachts. Two hour walk through village will bring you to Villa Manfred the home of an interesting German and his Polynesian wife

Facilities: Water - stand pipe on quay

Two island shops both selling frozen bread. (TC)

Baie d'Hane, Ua Huka

General: Some of the best wood carving in Polynesia. Not often visited by yachts.

Anchorage: Looks sheltered by really wide open to swell and wind squalls. Head of the bay shelves steeply anchor in 15 meters before this. Difficult dinghy landing at concrete slab on rocks on north east side of bay.

Facilities: Village store, Museum/ wood carving shop. Linked by road to main town of Vaipae which is also the main harbor. Botanical garden is on this road which is well worth a visit . (TC)

Taiohae Bay, Nuka Hiva, Marquesas

Pilots: AP, CC

Charts: FR 7352

Anchorage: A wonderful broad bay with easy entry. We entered at night. Use a stern anchor to cut down rolling.

Formalities: Check in with Gendarme at arrival and departure from the island (OK to go to different anchorages) Gendarme was very unhappy with boats that did not check in immediately. Diesel: At commercial dock. We took jerry cans over in dinghy.

Fuel: It is possible to anchor stern to the jetty if the swell is not too high and take on fuel. The fuel is clean. (KH)

Gas: Available from hardware store up hill.

Bank: The bank was very quick and had a beautiful display of local work.

Laundry: Via shop on quay

Provisions: Stock up on fresh produce here or at Daniel's Bay around the corner. Fresh vegetable and fish market on Saturday mornings at 0400. Be there on time as it is all gone by 0500. There is also a patisserie stall. (KH)

Restaurants: Good selection. The hotel is expensive but has a wonderful view.

Go for a drink if you do not want to spend on a meal.

General: Visit Rose Corser and her museum (in hotel grounds) which has some old artifacts.

Anse Hakatea (Daniel's Bay), Nuka Hiva

General: Daniel no longer lives in eastern arm of the bay but some of his relatives are reestablishing the 'restaurant' and gardens after it was demolished by TV series 'Survivors'. Spectacular anchorage. Western arm of bay leads to third highest waterfall in the world a single cascade through a cleft 488m to a pool below. The walk to waterfall takes about an hour and is possible without a guide. Anchorage: Reasonably protected on sand in middle of eastern arm of bay. Good holding .

Facilities: Water - One of the best drinking water sources in the Marquesas take a gift for family and they will probably also give you pamplemousse (giant grapefruit) from their bountiful tree. (TC)

Baie de Controleur

Pilot: WC

To the E of Baie Taiohae. Calm anchorage, nice village at the head of the river. Time your dinghy exploration to fit with the tides. Good hike up to one of the largest archeological sites on the island. We never found the waterfalls mentioned in Charlies Charts. (KH)

Anahoe Bay

Pilot: WC

On the N coast. Excellent holding, good snorkeling and the beach is bug free. Nice hike along the beach to the next bay. (KH)

Tuamotus

Passes: It is highly desirable to enter and leave the passes at the right time remembering that conditions alter with the weather. In strong south easterlies for instance a lot of sea comes over the windward side of the atoll which must find it's way out so the current of the pass is greater. Consideration should also be given to the alignment of the pass with wind over current creating dangerous overfalls. Finally consideration should be given of the alignment of the pass relative to the angle of the sun. Tide times vary considerably between atolls with quoted times for Ahe(14° 32' S 146° 21'W) being an hour and a half after quoted times for Tahanea (16°52' S 144° 40'W). A further hour can be added for the southern pass when the atoll has one northern pass and one southern one and the distance between them is more than 15 miles(see Fakarava). So the position is very complex. If possible work out the ideal time and arrive an hour before it to look at the conditions before making an entry. Entry should be timed between one hour before high water to one hour after or at one hour after low water. Departure is easier and providing the wind against current is not strong can usually be made between high water and two hours after high water and between one hour before low water and one hour after low water. At all times the sun should be high and overhead or behind you . Allow time once inside to get to your chosen anchorage which can be many miles from the pass . (TC)

Hao, Tuamotus

Pilot:WC

Charts: BA 3664

The pass into the lagoon is narrow and currents run hard. Expect standing waves on the outside with the outgoing current. Slack water is hard to discover especially when there is a heavy swell or strong winds. We approached 1 hour after LW to find 4 knots of ebb. Best time is to enter close to HW or after HW.

The pass itself is clearly buoyed. Anchorage: off the village is sand with a lot of coral heads. 18°06.34S 140°54.57W. Your cable will definitely be wrapped and snorkeling to check and clear will be necessary. This will be a lee shore in bad weather. There is a small boat 'harbor' with the possibility of mooring alongside the

wall for about 3 yachts. This is a comfortable alternative to anchoring off the village especially if bad weather is likely. It is well protected and the water clean enough to run the watermaker. The people are very friendly and the Gendarmerie welcoming. This is not a particularly popular atoll as it is a bit off the beaten track unless coming from the Gambiers. You will be assured a warm welcome and Eric, who works in the post office, is the official licensee pearl seller. His were the cheapest and best quality we found throughout the archipelago. Post office. The shop next to the bakery is quite large and worth a visit just to browse through the most eclectic assortment of stock you will find anywhere, some of which has been on the shelves for the last 50 years! They also sell some fresh veggies and fruit, frozen meat depending on when the supply ship has been. (KH)

Raroia, Tuamotus

Pilots: AP, CC, WC

Charts: FR 6110, also either 5267 or 5878 (check catalogue), BA 3664

Pass entry: We finally decided that calculators were not much help. An hour before H.W. seemed to work out alright. Beware, the Admiralty tide tables use an abbreviation for Rangiroa that looks like Raroia; this caused considerable confusion. The outflow at peak is 8 knots and is bumpy. The passage to the anchorage is well marked with beacons. Anchor just North of the village. The water is dark and deep and a tripping line will enable you to locate the anchor after the chain has wrapped around coral.

Formalities: None, but it is worth meeting the Mayor. (Marcel) General: A delightful introduction to the Tuamotus. Go to the church on Sunday for wonderful singing. Go out with the pearl fishermen and go fishing with them. We bought pearls here which were of better quality and more reasonable than we saw elsewhere. Watch out for the dolphins in the pass.

Enrico met us on the beach. He is the local health care officer and was interesting, entertaining and very generous. He doesn't speak English. The school welcomed French text books and crayons. No supplies, no bakery, no electricity and no tourists but as they are planning to build an airstrip this tranquil and friendly place may well change. (KH)

Makemo

Pilot: WC. CC. RU

Charts: C-Map 51391. BA 3664. The main pass is well marked.

Anchor off the village 16°37.60S 143°34.28W. 10m sand and coral. This is a large village with a bakery where you must order your bread in the morning before 0900 and collect it after 1100. There are 2 shops with good supplies. Some fresh veggies available when the ship has been in. There is a weekly supply vessel that sells apples and cabbages, at a price. The nicest anchorage which is not mentioned in any of the pilots is at the east end of the atoll, 16° 39.23 S 143°23.79W. Leave the anchorage off the village in the morning to have the sun in the right position for spotting the coral heads en route. Anchor in 6m sand with a few scattered coral heads. Exceptionally clear water. The snorkeling was excellent and the fish non-toxic. We caught grouper using a hand line. Good holding and shelter. Jean Marie, a cocotier, (copra harvester) and his small family live ashore and are very friendly. Balloons and small toys for his children were very welcome. He showed us how to husk a green coconut and gave us many to drink. He also will take you lobster fishing on the reef at night when the moon is right. (KH)

Tahanea

Pilots: AP, CC, WC

Charts: FR 6367, 7261, BA 3664

Anchorage: Enter by the Teavatapu pass, turn to starboard and anchor half way along the motu. Anchor before the reef that is visible just East of the anchorage. Anchorage on Eastern side of the pass near the deserted village 16°51.67'S 144°39.90'W. Holding good in sand with scattered coral heads although not as sheltered. Not good for S winds. Snorkeling excellent. (KH)

General: This atoll is uninhabited. It provided the best snorkeling we have ever experienced. A fun expedition is to take the dinghy to the pass and come in on the flood snorkeling and holding onto the dinghy. Keep an eye on the weather; this anchorage can be dangerous if it becomes a lee shore.

Fakarava

Pilot: WC

Charts: FR 7372A

Anchorage: off the dive shop 16°03.8'S 145°37.12'W 10m sand and coral. Good shelter from E.

Two stores and a post office. The shop nearest to the church will change US dollars.

Fresh vegetables and sometimes fruit are available on Mondays at 1500 when the

plane comes in at the big shop the across the road from the dive shop. Be there on time as the cruiser feeding frenzy beats anything seen whilst diving in the pass. The local ladies are also fighting for veggies as well.

Diving in N and S pass is exceptional with lots of large pelagic fish including 3 types of shark. The snorkeling off the reefs is not bad either. (KH)

Entry & Anchorage: Passe Tumakohua (southern pass) - Beacons in the pass are quite clear once you are inside but very confusing looking in. Depths of only

3.5 meters in entrance to pass, very large overfalls on ebb. Note tide times one hour on from northern pass.

Once inside the lagoon approach the anchorage to the north east of small resort by rounding all the visible green beacons to starboard. Anchorage is full of big coral heads and is 15 + meters deep but clear. If possible lay out anchor with a crew member snorkeling to see where it is going. Be prepared to free anchor by scuba diving , the divers in the resort will help in necessary. Facilities: The very small diving resort on the pass (5 cabins) is quite charming. They have a pier with a sort of restaurant on it but do not serve meals or drinks. Diving can be organized here and can be highly recommended as this pass was the best we found. Amazing sharks and fish life. Passe Garue (northern pass) - wide and free of dangers . The channel between the southern anchorage (Passe Tumakohua) and the northern main village Rotoava is well marked but beware firstly that the line between beacons passes very close to many coral patches and in one instance near the village right over a pearl farm! If approaching village from the northern pass beware of several marked coral patches. Anchorage is on sand in 10 meters, good holding and shelter .

Facilities: Super Market! Well stocked but no fresh supplies and still frozen bread.

Post Office Scheduled flights to Papeete (TC)

Toa

Pilot: WC

Charts: FR 6109A

Is inhabited by 10 souls. On the outgoing tide the pass has some fearful overfalls and slack water, or as close as possible to it, is advised. There are leading lights into the lagoon. Anchor in 10m sand 3 miles from the S side of the pass or opposite the village at the N side. Good shelter from SE. (KH)

Kauehi, Tuamotus

Pilots: AP, CC

Charts: FR 6109

Entry & Anchorage: The only pass is straight and free of dangers in its centre. The only settlement on the atoll, Tearavera, is 6 miles from the pass bearing 015°C. with all the shallow patches well marked by beacons. As you approach the village beware of pearl farm buoys , do not be tempted to pass between them as a web of ropes lies below. Anchor in 15 meters on coral and sand between port and starboard beacons about 0.5mile from the

wharf. An alternative anchorage with more shelter from the south can be found behind the northern arm of the village. (TC)

Anchorage: The village is located right across the lagoon. We followed the specified track and were in deep water all the way. The recommended anchorage is off the jetty, however we had bad weather and with the help of the locals moved North of the village in the “inner” lagoon. One needs to skirt the reef but the entry is easy. We anchored with the church at 172 M, the end of the motu (last bush) 226 M. Warning: there is a large coral head just awash with the church at 171 M and the end of the motu at 235 M. This is one of the safest anchorages in the Tuamotus effectively giving protection from all quarters.

General: A delightful and pretty island with very friendly families. Go to church, go with the pearl fishers, go fishing, walk along the reef. We spent 12 days here.

Facilities: Store with frozen bread , cans , rice and wine Airstrip connecting to Papeete Many pearl farms to visit. This is the site of one Michael Yip's ('Prince of Pearls') six farms, it is the large white building on the village waterfront. (TC)

Manihi

Entry & Anchorage: Passe Tairapa by the village of Manihi is the only entry. It is straight but very narrow at its inner end. The charts show 4 meters in the middle of the narrow/shallow area but our echo sounder showed 3 meters. If you are able to tie up to the quay in the pass do it as all the recommended anchorages are in 15-20 meters of cloudy water over huge coral heads. (Nick our scuba diver freed six yachts during the four days we were in the eastern anchorage). This anchorage is a very wet 1 1/2 mile dinghy ride from village.

Facilities: Super Market in village is well stocked but no fresh produce . Baker on the front will sell you petrol for outboard fuel. Manihi Black Pearl Resort by airport on north western side of atoll has expensive restaurant and bar. It puts on a weekly 'island night'. (TC)

Ahe

Entry & Anchorage: Passe Reianui is the only entry into the lagoon and is 5 miles from the main settlement of Tenukupara. There is a 3.6 metre bar at the inner end of the pass which should be spotted from aloft. The channel to the village is well marked as is the narrow channel into the very sheltered little inner lagoon just off the village. Good visibility is essential for getting into the inner lagoon anchor outside if necessary in 20 meters. This is the one of the best anchorages in the Tuamotus in depths of 6 meters on sand between coral heads.

Facilities: Village shop with frozen bread. Visits to pearl farms .

Scheduled flights to Papeete from air strip on the opposite end of the lagoon about 15 miles from the village . (TC)

Rangiroa

Passe Tiputa is straight and free of dangers apart from Motu Fara a sand cay just inside the lagoon by the pass. It is better to take this to starboard coming in. Anchorage: in 10 meters on sand is inside north western arm of the pass close to the beautiful Kia-Ora Hotel.

Facilities: Fuel would certainly be available as this is the main tourist centre for the Tuamotus. Store by the Kia-Ora Hotel or three stores in Tiputa Village on the eastern side of the pass. Diving trips by Kia-Ora Hotel. Snorkeling in the pass was hopeless but excellent on western side of Motu Fara. Several restaurants to choose from . Relais Josephine looking out onto the pass (watch the dolphins jump on the ebb current!) is recommended although you need to organise meal one day ahead. Airport is 4 miles along the motu at the northern western pass. (TC)

Tahiti

Pilot: WC.

Charts: FR 6957, 6955, 6525, 6717A

On the S coast of Tahiti there are a number of anchorages well worth visiting. This is closer to 'old' Tahiti and a gentle way to prepare your self for the big city life to be found in Papeete. We found the people friendly, welcoming and delighted to see a foreign yacht. It would appear that the majority of cruisers make straight for Papeete and don't consider cruising the other parts of the coast. It's an undiscovered paradise! (KH)

Port du Phaeton. Using electronic charts, we approached via the Passe Tapuaeraha as recommended in Charlie's Charts. This pass is possible in the dark as it has leading lights. The channel is marked with unlit but with reflector top marks. A strong torch is recommended. Radar is invaluable for this entry at night. Anchorage in the bay is in 12 m, sand, good holding. There is a small marina where it is possible to land the dinghy and 20 min walk towards the town of Taravao. A Fruit and vegetable stall is close to the Champion super market. (KH)

Pass d' Airirua

Pilot: WC.

Not to be attempted at night. The channel to the recommended anchorage is marked. The least water we saw in the shallowest part of the channel between the two posts shown as yellow on the chart, was 3m. Keep to the starboard side of the channel. The water is clear and someone on the bow is a good idea. Anchorage in sand and mud 17°49.85S 149°07.67W. A most attractive anchorage. (KH)

Passe d Aiurua, Tautira Village

Pilot: WC.

Cook's Anchorage. The pass is straightforward located 1 m N of Pointe Tomotai. This is a beautiful wide bay with protection from the reef although exposed to the N. Gently sloping bottom anchor 7m sand. Ashore there is a store that sells bread as well as general groceries. Le Truck does pass through but times are uncertain. (KH)

Papeete, Tahiti

Pilots: AP, CC, SI, WC

Charts: FR 6685, 7156, 6598

Anchorage: CC shows the alternatives. We anchored off the wall (the "expensive" end). We had electricity and water and easy access to the town. Well worth it. The Quai des yachts in the centre of town is noisy. When the ferries enter the harbor their wash creates severe pitching and rolling for those moored along the wall. The advantage is that there is water and electricity available, (240v) and you are in the centre of town. A good idea for a couple of nights if you have young crew who want a taste of night life. Anchorage at Maeve Beach area gets crowded but the holding good and it's relatively quiet. Arrange laundry through the marina. Land by dinghy landing at the fuel dock and moor it either to the dinghy platform or the other side of the access to the fuel pontoon. You can go alongside for fuel. This anchorage/marina is a five minute walk from the enormous Carrefour (former Continent) with the advantage that you can wheel your trolley back to the marina. Constance is the charming lady who runs the marina and is very helpful. (KH)

Formalities: It is necessary to visit Immigration, Customs and Port Captain in that order on arrival and departure. They are all located together on the waterfront. It is possible to apply in writing to the High Commission in Papeete for a 3 month extension to visas. Give a reply address, the Harbour Captain's office in Papeete is a possibility. Keep a copy of your letter to show to Immigration. (DM).

Fuel: We took fuel at the Yacht club at Maeva beach which was very easy.

Gas: Either dinghy or taxi to the gas depot. Usually they will fill while you wait.

Bank: Plenty of ATM's (But did not appear to take Mastercard).

Laundry: On sea front past the Prince Hinoi, opposite the Tourist Information centre.

E mail: Several in town . We used the café which stayed open to 2300. Located by a roundabout up from the harbor near the Sony centre.

Internet: We found the best one to be at the business centre at the airport. No

children down loading video games, no crowds of 'yachties' and the computers are fast. One has a 'qwerty' keyboard. (KH) Provisions: Superb supermarket "Continent" near Maeva Beach . Take the bus there, but you will need a taxi if you buy as much as we did. Covered market. Sunday morning was the major day but you need to get there early , we arrived at 0700 and everything was closing!

The big covered market in town is open every day as well as Sunday morning. Better value and selection of fruit and veggies than the hypermarket. (KH) Chandlery: Reasonable chandlery in dock area (next to gas depot). With time it was possible to get most marine problems solved.

Restaurants: Large choice, we particularly like L' Auberge (traditional French), located on same roundabout as e mail café. Also Market Café (open early for breakfast near the market)

General: A city to be enjoyed. The 14th July celebrations have been toned down but the Heiva cultural festival with its associated Artisans' show was wonderful. Check the dates and try and arrive at the right time. Hire a car go to the museum, Gauguin etc. (The last bus is at 1630)

The Heiva cultural show lasts for 5 weeks from around 21st June. This is a 'must' see the dancing, the artisan market, javelin throwing and canoe racing. By contrast, Bastille Day is hardly celebrated. The Heiva happens all through French Polynesia not only in Tahiti. Most travel books and other sources are fairly disparaging about Papeete, we found it a fun place to be for a short time. It is expensive. Whilst there, there is the opportunity to take a packet trip to Easter Island for 3 nights 4 days. Reasonable cost.

'Maeva Beach Anchorage', West Coast

General: There are three distinct sections to this excellent anchorage. We would recommend No 3 below . All these anchorages take one away from the noise , dirt and hustle of Papeete but give you easy access to it by the very regular Le Truck service.

Anchorage:

1. In the bay off the Beachcomber Hotel
2. In the bay off the Maeva Beach Hotel
3. Along the sandy strip inside the reef opposite Marina Taina.

Fuel: At Marina Taina (best place to fill up on island), tell them that you are clearing and you will get duty free price of 58CFP/Litre rather than 105CFP.

Water: At Marina Taina fuel dock at no charge if combined with fuel. Your daily dinghy landing fee also includes the ability to fill up cans with water.

Dinghy Dock: At Marina Taina a small charge (which no one seemed to pay) is made for this service.

Carrefour Hypermarket is a five minute walk towards airport .Or Mobil shop 3 minutes the other way for early morning bread. Marina Taina sometimes has room to tie alongside with electricity etc. Restaurants: several to choose from but comments on the one in the Marina were very favorable. (TC)

Moorea

Pilots: CC, WC

Charts: FR 6955, 6657

Vaieri

This is on the N end of the SE coast. A useful anchorage for an overnight stop en route from Tahiti or for dropping off or meeting crew at the ferry. The pass is lit and easy to enter. The anchorage is deep or on the edge of steeply shelving sand. (KH)

Cook Bay

Pilots: CC, WC

Charts: FR 6955, 6657

Spectacular anchorage off the reef. It is said that Cook anchored but never landed here. He went ashore in the next bay around. There is a longer and more interesting walk from here up to the Belvedere. Stores, restaurants, a bank and a very slow internet café. Excellent diving can be arranged through Top Dive.

General: most cruisers seem to prefer this bay perhaps because of the social activity at the very run down Club Bali Hai Hotel?

Anchorage:

1. Off Club Bali Hai Hotel in 20 meters - O.K.
2. On sand in 3 meters close by reef in eastern arm - very nice in settled weather , good snorkeling.
3. In western arm by Papetoai Village

Facilities: Best supermarket on the island at head of bay in Paopao Village

.Several restaurants to choose from around the bay (TC)

Robinson's Cove

Pilots: CC, WC

Charts: FR 6955, 6657

Nice anchorage either on either side of the entrance behind the reef or deep in the bay where the holding is good in mud. This is convenient for going ashore if you want to take the road up to the Belvedere lookout. Beach the dinghy at the head of the bay. It's an hours walk up to Belvedere and there is an interesting Maraes on the way which is worth a visit. (KH)

General: still one of the classic Pacific anchorages although strangely it seems to have gone out of favor with the cruising community. We had the place to ourselves twice apart from the beautiful sunset cruise schooner that is based there. Perhaps because the busy road around the island now goes straight past (this was a dirt track in 1972!)? The traffic almost stops at 1800 hours. Facilities: Good local store in Orufara Cove on western side of bay where water can be obtained if you ask nicely. (TC)

Tiki anchorage

Pilots: CC, WC

Charts: FR 6955, 6657

This is not in any cruising guide: On entering the Tareu pass for Robinson's Cove turn to starboard as if to anchor in the recommended anchorage. Follow the buoyed channel on a heading of about 290° for .75 of a mile. The channel will turn to the south at this point. Anchor in approx 10 m Swim out towards the port hand beacon and you will see 6 Tiki's underwater that were dropped there by some unknown person or persons some years ago. However, although I would not pretend to be any kind of authority, I suspect these Tiki's are genuine 20th Century, circa 1995! It's a fun lunch time anchorage and extra amusing when the boats come out from the hotels with guests and a great long story is told about the legends of the under water Tiki. (KH)

Muto anchorage

Pilots: CC, WC

Charts: FR 6955, 6657

Further to the Western end of the island there are two Mutos. The way point for the entrance of the pass is 17°28'.98S 149°53'.67W. There is a buoyed channel. Good morning light is necessary as the channel is narrow. The minimum depth we saw was 5m. Follow the channel and anchor around 17°29'.31S 149°54'.13W. This is a little known anchorage and limited to about 3 yachts. Good snorkeling. The highlight is the sting ray feeding and playing. On the sand bank you will see the hotel boats gather. Take your dinghy and join in. The rays are gentle and play around and on top of you. They are fed regularly and seem to enjoy being petted by humans. It is an extraordinary sight and worth seeing. When we were there we were given fish by one of the guides to feed. The current runs at about 1.6 knots in the channel and is always in a westerly set. Pretty anchorage in spite of the buzz of pwcs from the hotels. (KH)

Huahine, Society Isles

Pilots: AP, CC, SI

Charts: FR 6434

Anchorage: The pass entry is easy and timing is not critical. Anchor first of all off the hotel as this provides easy access to the village. Well worth moving down to Avae Bay. Beautiful sand to anchor in and great snorkeling. Formalities: Check in with the Gendarme

Bank: ATM

Provisions: A good supermarket and other stores in town. Fuel: Petrol station in the village for filling cans. E

mail: Two locations in the village

Restaurants: Two good ones in Fare and others around island

General: A delightful island. Hire bikes or car to enjoy it.

Baie d'Avea

Anchorage: 16°48'.71S 150°59'.68

Enter the Pass Avapehi and follow the marked channel S until you reach the bay. It is one of the most beautiful anchorages in the area and consequently quite busy but people tend not to stay long as there are no facilities.

There are two hotels, both of which serve good meals. From Hotel Mahana it is possible to rent cars, scooters and bikes. They also have internet access, expensive and dreadfully slow. A trip round the island is well worth considering as the marae on the E coast should not be missed as it is one of the largest in French Polynesia.

There are possible other anchorages along the reef. Clear water and reasonable snorkeling on the reef. (KH)

Baie Haapu

General: Three miles south inside the well marked reef channel to quite a local village . Not much to offer except local store and water. If weather is clear one can con by eye into the southern sandy beach anchorage which is very peaceful in calm trades . Anchorage: Excellent anchorage on mud just off the village wharf . (TC)

Raiatea

Passe Teavapiti is straight forward and suitable in all weather conditions.

Anchor close to Uturoa for access to the Champion store or, if space, tie up alongside the wall.

Gas refill: At the Raiatea Carenage, ½ nm SW of Apooiti marina. Go to the building with the Moorings sign on it. Laundry: available at Apooiti Marina. (KH)

Tahaa

16°38'.54S 151°25'.82

Nice anchorage with the best snorkeling in the area. Shelter from the motu. Snorkel on the S side of the pass close to the fish traps. Further on there is an anchorage to be had with a spectacular view of Bora-Bora at 16°34' .12S 151°31'.83 W. 5m on tongue of sand. Holding good here. (KH)

Bora Bora, Society Isles

Pilots: AP, CC, SI

Charts: FR 6002

Anchorage: There are a considerable number of anchorages. It is very deep off the quay but convenient when arriving or shopping. There is no problem in getting round to the Eastern side and it is well marked. Use the chart and not SI which is out of date.

Formalities: Gendarme was very laid back but we checked in and out.

Provisions: Three supermarkets but all rather small. Some fresh produce from vendors.

Chandlery: In town one run by an American who is happy to order parts.

Bank: ATM (Frequently not working)

E mail: One screen but always seemed to be closed.

Restaurants: Vast selection. Avoid the Bora Bora Hotel where yachties are not welcome. The Meridien on the Eastern side provided a wonderful (but expensive) night out. Topua Motu Anchorage: The southern anchorage marked on most cruising guides is no long recommended as a huge over the water hotel has been built there but the northern bay is the most sheltered anchorage of Bora Bora . No facilities.

Hotel Bora Bora Anchorage

Offers the best snorkeling on the island now that most of the coral on the eastern side has been damaged by an El Niño. Anchorage just off the hotel is also very pleasant in settled conditions . Hotel does not welcome yachties. No facilities .

Bloody Mary's Moorings

There are six moorings in the deep water off Bloody Mary's very convenient wharf . They are really for yachts dining at this famous venue but if you have a drink only they don't seem to mind .

Bora Bora Yacht Club

There are ten moorings off here or one can anchor . The Yacht Club is really just an excellent restaurant but it also offers water and an excellent laundry facility plus a very pleasant bar .

East Coast Anchorages

There are many to choose from as it is very shallow on that side . We anchored in south east corner off Taurare which was very nice. Also just North of 'dog-leg' which was pleasant . Both offered spectacular sunset views of Bora Bora mountain . No facilities. (TC)

Avatiu, Rarotonga

Pilots: AP, CC

Charts: NZ 9558

Green buoy on starboard side for entry. Leading markers and lights – fixed, vertical green – on same bearing, but all other lights have gone. Wharf on east side enlarged to just short of sea wall. Freighters come and go the whole time. All use east wharf and often use their anchor to turn. Navy patrol boat on shorter, west wharf. Navy boats may drop anchor in middle of harbor before backing in. Make sure your anchor is clear. All yachts use anchor and stern lines. Room for max of three yachts off north side of navy wharf, but there is a shallow patch of 1.5m immediately off the north end. After that, the depth drops to more than 4m up to the south wall. (DM) It

would be feasible to enter at night using the green leading lights (some yachts did) but the reef on starboard and rocks to port mean that the line must be kept to.

There is often quite a cross current. (GM)

Anchorage: Normally stern to the jetty but go alongside on the West wall when arriving. The mud is soft so use plenty of chain. Yachts moor to the south wall and it is best to drop anchor south of the seaward wall of the green-roofed warehouse on the east quay. If a northerly wind blows, the southeast corner of the wall is the worst place to be. (DM) Do not believe people who say the harbor is full. The Harbourmaster (Don Silk) is the most helpful and friendly harbourmaster we have ever met and I am sure he will always fit in one more. Don Silk's new office is at the head of the harbor (blue roof & outside steps). WC and showers underneath. The new office should have been ready by September 2001. (DM).

Formalities: Call Harbourmaster before arrival. Harbormaster, Immigration and Customs all in port area. Don Silk has now retired. The new office is in place
Quarantine officer will come on board, but other formalities still through H.M. (GM)

Fuel: A tanker comes once a week; talk to the Harbormaster. Mobil and Triad are both located on the road to the airport. They give similar prices and service. They will deliver 200 liters (with hose and pump) for \$270NZ. (2001 price). Can also order 1000 liters via bowser. Bowser fuel line has valve at receiving end. (DM). Supply all oils and will accept old oil for disposal.

Gas: Available in port area. Kerosene in main stores.

Water: untreated supply. Most people drink it, although government health warning says boil for 10 mins. Seasoned yachties should not have a problem, but wait 48hrs after heavy rain. Some yachts run water makers in harbor. (DM)

Bank: In town. ANZ and West Pac. Only former has ATM – in town and at airport. There is a West Pac in Aitutaki, open two days a week. (DM)

Provisions: Several good and reasonably priced supermarkets. Open 0800-1600 and 0800/0900-1200 Saturdays. Closed Sundays. Open air market close to harbor. Best market on Sat from 0630 and finished by 1200, with organic herbs and veg etc. Also crafts.

Drink: Duty free available on departure. Good selection of N.Z. and Australian wines. Good prices (2001). 1.14l best J&B scotch for \$22 NZ (approx. £7). Bond (name of store). Order before checking out, check out, show Bond clearance papers and return to boat. Bond delivers within the hour. (DM)

Restaurants: Excellent selection. Our favorite was Trader Jacks.

Paulines located by roundabout just before Trader Jacks excellent for lunch with local food (GM)

Cheapest eats at market place on Friday night. Bring own cutlery, unless happy with fingers or small plastic fork. Big helpings for \$6NZ (in 2001). Perfume Factory on Sunday night for roast and veg for \$10NZ. Bar open Thu – Sun. Good cafés for lunch \$9-\$15NZ and healthy snacks. Rarotonga Beach Hotel was good for lunch and PM eats there with Cabinet and guests! On south side of island, so take car/taxi. (DM)

E mail: Excellent service and reasonable located opposite the cinema . There are four others at comparable prices. 25 NZ cents per min in 2001. Pacific Computers will allow laptop connection.

Telephones – use card only. Telephones are only available by the post office and at the Telecom office. Cards are available at most stores. (DM) DHL: located in shopping centre on Cooks Corner. PO box 423, tel (682) 25 101, fax (682) 25 102. E-mail dhl@oyster.net.ck No office at Aitutaki, but will put on plane from Rarotonga.

Weather: good forecast on AM 630 (Radio Cook Islands) at 0625 local time.

Laundry: Arranged via Harbormaster. Laundry is now at laundry on opposite side of road from harbor. Same day processing. Beautifully done. (GM)

Transport: bus service clockwise and anti-clockwise about every hour, but this stops at 1700 midweek (longer Sat and shorter Sun). Single journey for \$2.5NZ. General: An English speaking island which is delightful. Hire motorbikes and enjoy the sights. There is a cinema (we went three times) and good craft shops. Good facilities and reasonable price for learning to dive; much cheaper than French Polynesia.

The NZ High Commission is open from 1030-1430 Mon- Fri for visas. Allow 7 working days (but can take only 4). A 6-month tourist visa, extendable for another 6 months, multiple entry costs \$100NZ. Bring photo and ship's papers. (DM)

Excellent refrigeration repair company: Southcold Refrigeration Tel: 27037 General metal work including welding: Mr. Barrett in shed at end of quay Note: There is no sail repair facility anywhere (GM)

Museums: There are two small museums. Both are worth visiting. One is adjacent to library (turn right after cinema). The other is ? next turning right. Walks: The cross island walk is a must. The bus will bring you back. You do not need a guide. Buy the book in the bookshop (which also has newspapers) (turn right at roundabout) (GM)

Palmerston Island

Pilots: AP

Charts: AC 4630

If going to Palmerston make sure you contact the Palmerston community in Rarotonga so as to carry parcels and supplies for them. Anchorage: The locals will meet you and tell you exactly where to drop the anchor. There were half a dozen yachts anchored and it was quite safe so long as it did not become a lee shore.

General: A unique experience not to be missed. We stayed a week. Make sure you stay with the family that first welcomes you and eat with them. We went fishing and crab hunting.

Niue

Pilots: AP

Charts: AC 4630

Approach: There is a Fl R on a radio mast north of the anchorage bay. Leading lights, Fl R and R lead into the wharf, but lower light not working. Bright floodlights on wharf. Moorings: Fourteen in total, with ten south of the wharf and four north. Call Niue Yacht Club (Mary or husband Wally) on Ch 16, working ch 10, and register arrival. yachtclub@sin.net.nu and www.visit.nu/yachting Mary will direct you to a mooring if one is available or advise on anchorage spot (avoid south of wharf). Should be two buoys; pick up the down-wind floater. Place own line through s/s eye-ring and pay out enough scope to drop the eye-ring back into the water. This is to prevent chafe on the mooring and provide more spring. The moorings are removed every winter and checked. Cost \$5NZ per yacht per day (in 2001). Possible plans for more moorings. (DM)

Anchorage: Buoys have been laid which are strong. It is possible to anchor if all the buoys are taken (we did). It is deep and coral. The risk is that the anchor will get hooked irretrievably. We did not hear of this happening and the local dive company would recover the anchor for you. The yacht club allocates the moorings and will place you in the queue. The dinghy "landing" is by hoisting the dinghy up with electric crane, so you need a harness ready. The landing can be very difficult at high tide with a swell running. Place on the trolley and park where marked. Leave winch hook 1m above water for others. We experienced no problems with the anchorage but some boats did have a strong Westerly and had to leave their moorings.

Entry and formalities: Advise Niue Radio of arrival – manned 24hrs from Telecom office in commercial centre opposite white single-storey building (church) above the anchorage. Niue Radio advises Customs and will give a time to meet Customs at the wharf and drive to Customs office (also opposite the church). Customs may be available on Sunday am, as there is a flight from Tonga. Do not come ashore without clearing. No charge, even on Sunday.

Immigration: In police building about 150m south of customs. 30 days from free and extendable at a price.

Fuel: At petrol station with jerry cans

Gas: Available via Yacht Club Bank: Westpac open Mon/Thu 0900-1430 and Fri 0830-1500. No ATM but will advance cash on VISA, Mastercard and Barclaycard.

Seebreeze laundry, cinema (1930 Thu-Sat), bakery, various food and hardware stores.

DHL: at South Sea Traders, Commercial Centre, tel (683) 4295 fax 4268 dhl@niue.nu

Shipping agent; Tokes Enterprises Niue Ltd, tel (683) 4317, fax (683) 4322 and tokes@sin.net.nu

Normal office hours 0800-1600 Mon-Fri, 0800-1200 Sat.

E mail: Free! Two screens available from midday for three hours.

Garbage bins, water from standpipe on north side, by oil pipeline. Shower/WC

block in white building on hillside. Niue Yacht Club have their own, get key from Alofi Rentals (Mary and Wally)

Provisions: Small supermarkets. Reasonable open market. Go before 0800 on Friday. Somebody there most days (not Monday)

General: The "Yacht Club" is run by Mary and Wally of Alofi Rentals. They will arrange everything you want. Hire bikes and a car for round the island. No public transport. It is possible to hitch on the west side, but difficult on the east side, since there is so little traffic.

Flights: now only two 20-seater flights per week via Tonga (Wed & Sun). Often over-booked and a confirmed seat does not guarantee a seat.

Hospital, with dispensary.

A wonderful island with very friendly people. Go to all the sights including the Fia Fia at Hakupu and the special evenings at Gabes Restaurant. Diving: Niue Dive (ch 16, working ch 14) run by Annie and Ian. Call on VHF at 0715-0745 for diving details and pickup point, if not your yacht. \$45NZ per dive for yachties (in 2001). Proof of certification essential. Tank fill for \$10NZ. Excellent visibility. Snorkeling: in rock pools on reef at low water, fantastic, especially at Limu (DM) Best of all, whales come into the anchorage and we were able to swim with them.

Neiafu, Tonga

Pilots: AP

Charts: AC 3097

Entrance: There are two buoys at the entrance to the harbor of Neiafu, one of which is clearly green. The other one is extremely rusty and it might be easy to think it is red. Leave both buoys to starboard. (KH) On arrival call Sailing Safaris, Moorings or Beluga Dive on VHF Ch: 16 to ask for a mooring.

Anchorage: On arrival go alongside the commercial jetty. After formalities it is possible to anchor but easier to pick up one of the moorings which are secure. Formalities: Customs (now in new building), Immigration (also in new building) and Quarantine will all come aboard. We experienced no problems with 'confiscation' so long as food stored in closed lockers (not netting) and we were quite happy for them to take away some ancient bananas.

A visit of Customs, Immigration and Quarantine on the wharf between 0900-1600 Mondays to Friday is all that is required. Out of office hours overtime is charged. You will get a one-month visa that can be renewed. (KH)

Fuel: Available from Colemans and one can go alongside. There is a tendency for them to run out of fuel and it can take two weeks for supplies to arrive.

Bank: ANZ has internal ATM

Provisions: Several small supermarkets. Excellent local market near wharf, which now occupies a new building. E mail: At Bounty Bar; but very expensive. Email also at Beluga Diving and is very expensive. Jon Beauchamp and his partner Holly Marsden of Sailing Safaris sailingsafaris@kalianet.to are an extremely helpful and knowledgeable couple. Jon runs the small yard next to the Mermaid restaurant. The yard is small and Jon's supplies limited, but it is possible to do small repairs and to come out of the water on the railway slipway. The railway is very primitive indeed. We had to come out of the water to replace the propeller. They took great care but the equipment it self is very rough and ready. Your topsides will almost certainly be scratched. (KH)

Restaurants: Plenty to choose from and a "Tongan feast" at an anchorage (e.g. Ano No.11) is a must. Our favorite restaurants were Ocean Breeze (a short walk away) and The Mermaid which has excellent music and food.

Restaurants come and go and this season's favorites are The Dancing Rooster, Pua Tali Fusi and the Paradise Hotel. (KH)

Mail and Communications: DHL has an office here but don't rely on it for prompt delivery. If you need parts to be sent out it is best to contact Holly at Sailing Safaris and take her advice. Mail and faxes can be sent there as well. Sailing Safaris Ltd; Private Bag, Neiafu, Vava'u, The Kingdom of Tonga. Tel/fax: + 676 70650. There is a cruisers' information net every morning on VHF 06 at 0830. Apart from Sunday, there are daily flights to Nuku'alofa and from there connections with USA, NZ and Australia. A bus from Paradise Hotel meets every flight and leaves the hotel 1h15 mins before the flight is due to arrive. (KH)

General: The Vava'u group provides a wonderful relaxed cruising ground with day sails and protected anchorages.(The Moorings Guide is the essential pilot). Diving is excellent with twenty sites and varied coral.

General information for around the anchorages. The hurricane last year did a lot of damage and some places that were recommended for snorkeling or diving are no longer as good as they were. Highlights to visit by dinghy are Swallows cave close to anchorage 5. It's miles better than the blue lagoon at Capri. Mariners cave near by to anchorage 7 & 8 is a well worth visit for the eerie light and green fog. Mariners cave is hard to find unless you know exactly where it is. You can get there by dinghy from anchorage 7 & 8 if it is big enough and anchor off or take the yacht and whilst one person stays on board whilst the rest are in the water. Waypoint: 18°41.46S 174°04'.48. It is best to time your visit at low water and preferably in the afternoon when the sun shines through the water. The moorings guide will tell you the story about the place. If you can swim under your keel and turn and look up at it whilst you are doing that then you will have no problems in diving through the hole into the cave and it really is worth going in! (KH)

Ha'apai group, Tonga

Charts: T8247 NZ 8247

Pilot: WC

51 islands in group. Most low-lying. Capital, Pangai. Pace of life slower than Vava'u.

Population of 6000 spread amongst small communities, many without running water and electricity (except Mormon church compounds). Supplies very limited in villages. Do not expect to buy fresh vegetables anywhere.

Area has a poor reputation for coral reefs and a lack of shelter in anything other than prevailing SE – E winds. However larger coral patches appear well charted and there are anchorages with protection, if you look carefully. (DM)

General: The Haa'pai group of islands are worth exploring in detail as the diving, snorkeling and shelling are excellent. No supplies apart from at Pangai on Lifuka island. There is a small café/restaurant in Pangai called Mariners bar that serves lunch and dinner at reasonable prices. (KH)

Ha'ano Island

This is the N most of the group and 60 miles S of Vava'u so it is possible to day sail to it. Anchor waypoint 19° 40.21S 174° 17.37W You will need good light to pick your way past the coral heads. Holding moderate in shallow sand over coral. Good shelter from E – SE. (KH)

Foa Island

A stump on a rock marks the N side of the pass through the reef. Good holding in sand. 19° 44'.16S 174°18'.31W. Good walks ashore through the villages. No supplies. (KH)

Nukualofa, Tonga

Pilots: AP

Charts: NZ 827, 8275 Anchorage: One can either anchor outside the Queen Salote wharf or inside stern to the wall. If going inside drop the anchor well over on the far side and have the dinghy (or helpers) ready for taking long lines to the shore. Do not get too close to the wall as it shelves a long way out. Yachts anchor outside, either opposite Yellow Pier, protected by Monu reef, or on the west side of Pangaimotu, off the resort. The harbor due is the same wherever the yacht anchors. In 2001, work was in progress to enlarge the inner harbor for local boats, which may make more space for yachts.

Formalities: If already in Tonga then just Customs are needed on arrival.(The Customs office is at the gated entrance to the port, on the left.). If reporting from Vava'u or Ha'apai, hand in the Clearance Certificate. The Immigration Office is in the road set back behind the International Dateline Hotel (by the yellow pier) and next to the Federal Bank of Tonga, with its twin white peaked roofs (conspicuous. on entry). Departing for New Zealand see Immigration (no longer in Police station), Port Captain and Customs.

Fuel: At fuel station located just inside the entrance at fisherman's dock.. We took cans over by dinghy, probably OK to go alongside, but check depths. For duty-free, take your outward clearance certificate.

Bank: ANZ has external ATM. Situated on SW corner opposite covered market. Provisions: Several supermarkets. Booze only sold by the Chinese stores. Excellent covered market and handicrafts upstairs.

Laundry: Savoy Dry Cleaners, Hala Fatafehi ten minute walk from market, south. Drop off. Courier: DHL, Agency with Vital Travel, Lonis Building, Wellington Road, Nuku'alofa, PO Box 41 or 838. Tel: 23 617, fax: 24 195, fonvea@candw.to E mail: Friends Café and two others. Radio net: In October 2001, there was a VHF net with local information on Ch 14 at 0930 local. Facilities: There is only one slip. Visitors Office: on seafront, west of International Dateline Hotel (DM)General: A delightful town with lots to see. Everybody very friendly. We could not understand why previous reports had been so critical. Take a tour around the island.

Minerva Reef

At 250 miles to the S and W of Tonga lie the two Minerva reefs that dry 0.9m at low water. prior to GPS and accurate charts these reefs were given a wide berth for obvious reasons. Now many cruisers stop there en route to New Zealand. North Minerva reef is a spectacular anchorage and it would be possible to wait for bad weather to pass whilst there. The entrance is straightforward. From the N the following waypoints apply :

Outside: 23°37'.30S 178°56.00W

Mid pass: 23°37'.35S 178°55.85W

Inside: 23°37'.43S 178°55.66W (KH)

Fiji

Lonely Planet guide for Fiji is invaluable. (GM)

General: The Mean Spring Tide Range in the Fiji islands is 1.3 meters which is enough to cover the many coral dangers. The charts show many beacons marking these shoals, unfortunately less than 50% remain. Finally the weather often gives many days in succession of overcast conditions. The saving grace is that the Fijian Hydrographic Unit have published reasonably reliable charts covering some of the 'key' areas making GPS navigation viable. These are strongly recommended with F5 essential for the Yasawas. If possible also obtain copies (the originals are no longer readily available) of Pickmere's 7 detailed charts of the Yasawas these were published in New Zealand (Janet Watkins of the Royal Akarana Yacht Club Auckland will know if any are available). Not recommended as much, but the only guides available, are the two cruising guides of the area, Michael Calder's 'A Yachtsman's Fiji' (reasonably comprehensive and up to date but very difficult to follow) and Phil Cregeen's 'Fiji' (which is excellent as far as it goes but just one person's cruise so if far from comprehensive). These are some of the most testing coral waters that we have sailed in. (TC)

Formalities: We arrived at Savu Savu which is the easiest for formalities and the most convenient port of entry if coming from the North or East. Officials come out to the boat and are all close. NB On no account stop at an anchorage before clearing in, the Fiji authorities are very hot on this and although the villages may appear primitive they all have radio communication! One boat who infringed the regulations was detained for six weeks and had two very hefty fines. Before cruising you need a cruising permit. The "Copra Shed" at Savu Savu will organise this and it normally takes three days to come through. It is sensible to put down every area that you might possibly cruise in. Copra Shed will also organise a letter which will enable you to visit the Lau group. This is because the partner of the Copra Shed owner owns a resort in the Lau group.

Overtime is payable if you arrive out of hours, but you cannot delay checking in. (GM)

Sevu Sevu: This is the custom of presenting Kava to the local chief at each anchorage. Kava bundles can be bought at any market. Carry enough for your planned itinerary. Some yachts did not do "Sevu Sevu", we think this is very bad manners and will give yachts a bad name. The villagers are well aware of your presence long before you have got the anchor down. The Kava should be presented as soon as you arrive (waiting to the following morning is not a good idea). It provides an excellent introduction to the locals. Some islands /anchorages do not require Sevu Sevu either because they are freehold (Viani Bay, Musket Cove) or not Fijian (Rabi). (GM)

Navigation: Fiji is a delightful cruising area BUT navigation requires concentration and good light. Most charts are not accurate enough to rely on GPS navigation and inserting the offsets often made it worse. We had six weeks of overcast skies, rain and strong winds. Navigation was a nightmare and once we managed to have the bow in a foot less water than the draught of the boat! When the sun came out then cruising became a pleasure. Moving at low water helps as does some wave action so that the reefs can easily be identified. Sun in the eyes is awful but high or on one side is OK (often you have no choice). In good conditions standing at the bow will be adequate but when it gets difficult you must get higher. We have mast steps and sitting at the spreader is ideal. However this is only possible with no Main set and in relatively smooth conditions. It is better to have ratlines on the lower shrouds. There are virtually no lights working and except for using the main shipping approach channels it would be very unwise to move at night. The day marks may not exist, be in a different place, mark a rock or reef that was not shown on the chart. One mark destroyed and

an adjacent one added makes for a lot of confusion. Virtually everywhere we anchored we found good holding but sometimes coral heads were a nuisance. (GM)

Pilots and Charts: There is only one “Yachtsman’s “ Pilot which is by Calder. On the whole we found it very reliable and it has superb aerial photographs. Its shortcoming is that it gives you no “flavour” of the different anchorages, islands and villages. The only thing is to ask other yachties. The Copra Shed carries all the charts for the Fiji group (or can get them quickly). The Pickmere charts of the Yasawas have been reprinted and are well worth getting. If you have the time, color them ; it will make it much easier. A number of large scale Admiralty charts have been replaced by Fiji charts which are cheap and good. Admiralty charts are expensive. A lot of yachts were using C-Map which seemed very good. (GM)

Provisions: We use our watermaker but we heard good reports of water supplies in Savu Savu, Musket Cove and Vuda marina. A lot of water falls from the skies, so it is worth setting up a good rain collection system. There are good supermarkets which also have liquor, and fruit/vegetable markets in Savu Savu and Lautoka. (We didn’t visit Suva). Musket Cove has some supplies but expensive (especially alcohol). You will catch fish (if we can, anybody will) but otherwise keep the boat well stocked. (GM)

Leaving the Boat: It is possible to leave a boat at Vuda point marina ashore in pits during the hurricane season. This needs to be booked well in advance. Out of the hurricane season a boat could be left afloat at Vuda point, but the mooring system means that boats will be squeezing in alongside your boat in your absence which you may not be too keen on. I think a better solution is to leave the boat on a mooring at either the Copra Shed (Savu Savu) or Musket Cove. Geoff Taylor at Copra Shed or Dick Smith at Musket Cove could organise someone to keep an eye on the boat.

Musket Cove

Private Mail Bag NAP 0352

Nadi Airport

Tel: 679 662 215

Fax: 679 662 633

E mail musketcovefiji@is.com.fj

Costs: Mooring Fiji \$ 8 per day or 172 per month Marina 14 per day or 318 per month (GM)

Delivery of spares: Savu Savu has a DHL office and parts can be addressed to there. Parts can also be addressed to Musket Cove (which we used) but there is no DHL office there for outward despatches. The nearest is at Nadi Airport. If having parts shipped in it is essential that the “Rotation “ number is shown on the label . You acquire this number on the customs form when checking in. (GM)

Anchorage and Harbors

These are brief notes intended to supplement the existing charts/pilot.

Savu Savu

Very easy approach. The light house at the entrance to the bay was one of a very few working in Fiji. Immediately after the lighthouse there is the Cousteau Resort which is a very convenient anchorage before or after Savu Savu. Call up Copra Shed on VHF and pick up mooring. Superb pizzas at Copra shed, several restaurants, market, supermarket. Flights to Nadi. Fast cat or slow ferry to other islands. A delightful place to spend a few days , meeting people and restocking. Diesel and water available. e mail available. (GM)

General: This one of Fiji's four Port's of Entry and is certainly a most convenient port to start one's cruise avoiding the frequent rain of Suva. The town of Savusavu is the second largest on Vanua Levu (Lambassa in the North is the main town) but with only 2000 population it offers very little in the way of serious yacht services. These can only be found in Suva and to a limited degree in Vuda Point Marina, Lautoka.

Anchorage & Approach: Point Reef Light, which was one of the only lights that we found working in Fiji, marks the entrance to Point Passage. Do not pass too close to the light beacon as the reef extends quite a distance past it. Point Passage leads into Savusavu Bay whose eastern shore is clear until one reaches Nakama Creek some 5 miles along it. Savusavu lies in this creek. Anchorage can be taken upstream of the many moorings that are available to visiting yachts from The Copra Shed Marina (White Buoys) or the competing Waitui Marina (Yellow Buoys). Cost of the moorings is \$F10 per day. A pleasant anchorage can also be found opposite the Cousteau Resort a very up market hotel about 1 mile from the entrance into Savusavu Bay. (TC)

Facilities: Fuel is available from the fuel wharf just down river from the Copra Shed Marina. Water is available from The Copra Shed Marina A laundry service is available , not do-it-yourself.

There are many typical Indian stores selling everything but most of them sell the same thing! A good Morris Hedstrom supermarket is across the road from the Fuel Dock . There is an excellent bakery and a wonderful local market. Two weeks complimentary membership is extended to visiting yachts to the Savusavu Yacht Club which has a very pleasant bar/club room as part of the Copra Shed complex. Several small restaurants are in the town with the pizza bar at The Copra Shed offering excellent food. The Copra Shed Marina will organise your Fijian Cruising Permit for a small fee. (TC)

Nabouwalu Bay - NW Coast of Vanua Levu

Anchorage: An excellent anchorage will be found (16° 59' .59 South 178°40' .98 West) just off the wharf . There is a small village store ashore but no other facilities (TC)

Cukuvou Harbour, Yadua Island - Off NW Coast Vanua Levu

Anchorage & Approach: The passage, just north of the centre line, between the reefs in the entrance of the bay is on a heading of 110 True taken on the small lighthouse that is quite difficult to see on the ridge behind the bay. These reefs show in good light. Anchorage on sand in 12 meters in southern part of bay. No facilities. (TC)

Vuda Point

A marina which has a narrow but very well marked entrance. At low water springs we had enough water (just!). Mooring is bow in to the wall. Call on VHF before arrival (they always seem to find room) and a boatman will help you with lines as four are needed. Stern ones need to be quite long. Getting ashore can be tricky because of tidal range. Taxi into Lautoka for big market, supermarkets, e mail (there is also e mail at Vuda). You can clear out and internal clearance in by taxi at Lautoka, but for arrival from a foreign port one must anchor at Lautoka close to customs. If wind drops the marina can become an oven. Diesel and water available. (GM)

Rabi

We found this island fascinating and very friendly. It is populated by the islanders from Ocean Island (Kiribati) who were displaced by the phosphate mining. Katherine Bay is well protected and has excellent holding.

Albert cove in the north is beautiful but tricky to enter. The entrance is to the West of the line indicated by Calder. It was difficult to find an anchorage without coral but OK if Calder's directions followed. (GM)

Nasonisoni Passage

This is SW of Savu Savu. It is not straight and we nearly hit the coral. Good visibility is essential. (GM)

Yadua

The anchorage is very secure although windy. At times you will need the outboard to get ashore. Entrance is straight forward with good visibility but lighthouse during day is almost impossible to see. Superb walk to village which is almost entirely traditional buildings. Very friendly. (You do not need special permission for Yadua, only Yadua Iti where the iguanas are. (GM)

Yasawa Group

Beautiful anchorages with fairly nerve racking passages between them. Villages are rather commercial and tend to expect gifts from us while charging for anything they provide. Still very friendly. Nobody is charging for just mooring. A lot of coral had died but seems to be recovering. Good snorkeling at Sawa i Lau. Somo Somo was a bit rolly but Sevu Sevu ceremony very elaborate. (GM)

Sawi-I-Lau -Yasawa Islands

Anchorage & Approach: A very early start is required from Yadua to cover the 50 mile passage across the Bligh Water and enter Sawa-I-Lau in good light. Be careful of the dog leg eastern entrance into the Bay as the shallows extend a considerable distance off Sawa-I-Lai island. Anchor off Nabukeru village (we were 16°50'.85 South 177° 28'.07 West off the small sandy beach on northern end of Sawi-I-Lau) which should be visited for 'sevusevu' (a gift of 1/2 Kg. of kava root) and payment \$F5 per head fee for visiting the caves. The cave on Sawi-I-Lau island is wonderful take bathing things and a waterproof torch if you want to explore the caverns inside the cave. Facilities: The ladies in the village will sell you fresh fruit, their shells were the best that we saw in The Pacific. (TC)

Nanuya-Sewa (Blue Lagoon) - Yasawa Islands

Anchorage and Approach: There are three entrances into this coral strewn bay and most beacons were in place. Good light is highly desirable. The anchorage in 10 meters of white coral sand off the Nanuya-Sewa beach beach was delightful. No facilities although a shop is believed to exist on Nanuya-Leva (Turtle Island) by the exclusive Turtle Island Resort (yachts not welcome). (TC)

Somosomo & Narewa Bays

Anchorage & Approach: Approach from the north east being careful to sight Drui Reef in the middle of the main bay. Narewa Bay is a very narrow coral fringed anchorage but it offers some of the best coral snorkeling that we saw in the Pacific . Somosomo village and anchorage be careful to sight Vomo Reef anchoring just to the south of it . The village was most interesting and well worth the 'sevusevu' that we took ashore. (TC)

Mana, Mamanuca

A resort island but very pleasant. The entrance is tortuous but well marked. Two beacons have fallen over. They are port hand beacons but are marked with white plastic cans! (GM)

Anchorage & Approach: the very narrow and twisty pass leading into the small lagoon is very well marked and has 4+ meters of water at all states of the tide. BUT one marker was missing in the entrance. we very nearly put Hesperine on the reef . Good light (which we did not have) is therefore essential. Once inside there is comparatively lots of room. Anchor in 10 meters on sand just off The Mana Island Resort Wharf . The Resort was rather run down catering for mass market package holidays but did offer a pleasant bar and restaurant looking out over the anchorage (the one on the northern side of the island was a 'bit of a bun fight!') (TC)

Musket Cove, Malolo Lailai , Mamanuca Islands

A resort, so not really Fijian. Some boats spend a long time there which we could not understand unless you like resorts. It does provide lots of facilities and you can either pick up a mooring (call on VHF) or anchor. Two restaurants, e mail, hobie cat hire, walks, provisions (expensive). Water was too murky to swim. I would not advise the approach from the North. The buoyage has changed and we had quite enough excitement leaving by that route. The South approach is straightforward with good visibility but you need to make sure that no marks are missed. (GM)

General:The famous Musket Cove Yacht Club is a particularly well run resort (owned by Dick Smith) which welcomes yachts . It is one of the best places to rest in Fiji. **Approach & Anchorage:** Approach either - 1. From the north entering the reef just north of Castaway Island the channel is well marked or 2. The more usual way from the South taking care to go South of The Black Rocks . The Yacht Club(Resort) offers ten stern/bow to marina berths @\$F14/day (3.5 metre depths at low tide). The narrow channel into these berths has 1.4 meters of water at low tide. It also has 21 moorings @\$F8/day. Outside the moorings there is plenty of room to anchor with good shelter between the reefs.

Facilities: diesel & petrol available at fuel dock by the marina 0830-1630 hours . Drinking water at 2 cents a liter is available at the marina . This is free with 100 liters of diesel. Gas bottle refills are available at the Trader Store. Camping Gas bottles are not able to be filled. Showers , toilets and laundry facilities are all available . E-mail terminals at the marina office. Marina Office 0800 - 1730 hours. Photocopying at Musket Cove Resort. Mail collection service available (Address Musket Cove Yacht Club, Private Bag NAP0352, Nadi Airport, Fiji) General mechanical & boat repair service is available through marina office.

The Trader store offers a good choice of food products including bread and fresh fruit and vegetables open 7 days a week 0700 - 1900 hours. SF3 Bar and DIY BBQ (wood supplied). Restaurant & Bar available at Musket Cove Resort. The Resort also has accommodation available (e-mail musketcovefiji@is.co.fj.Phone 6662215) Crew Change and Cruising Permit documentation can be carried out at Marina Office Communication Channel 68 for communication within the bay Channel 64 for communication with yachts in Yasawas & Viti Levu regions. (TC)

Wallis (GM)

Navigation: Entry through the pass is relatively easy. The information about flow differs depending whether you read the chart or the Admiralty Pilot. We entered between one and two hours after slack and had no problems. The entrance is well marked and the passage to the anchorage is very well buoyed (all lit). The chart is the same one that has Minerva Reef on it. The anchorage detailed in the Admiralty Pilot off Mata Utu had excellent holding. In some other positions there was smooth rock. We had to move NE off the recommended line as a ship coming to the jetty needed swinging room. The anchorage became very uncomfortable when wind was in SE as there is a long fetch between the reef and the anchorage. Dinghy work was very wet! There is another anchorage in a bay south of Mata Utu (see chart) which is buoyed and well protected. It means you are a long way from "civilization". I am not sure what the depth was like in the bay.

Formalities:

Police (immigration) are at Mata Utu a short walk from jetty. Customs are 30/40 minutes walk along the main road past the hospital. Check with police for opening hours. All very laid back and relaxed. There is no Bond required.

Facilities (See Lonely Planet "South Pacific") Cash from bank in main shopping square. (No ATM) but credit card OK in bank. Wallis still using CFP's although there is talk of going to Euros. US \$ still acceptable as emergency. Virtually impossible to pay for anything by credit card except hotel. Tried in supermarket and it took ½ hour. Three supermarkets, all very expensive. No local market but some roadside shops sell local produce; the best one was at the supermarket adjacent to a filling station south of Mata Utu It was virtually impossible to find any laundry facilities. We eventually got it done at the Hotel L"Albatros; it was extremely expensive and you have to be desperate to pay that sort of money. The owner of the hotel had been an airline pilot and was very interesting about the islands. Several eateries: Pizza in shopping square with good views Hotel Lomipeau on main road to airport with wonderful views of anchorage Snack bar at end of jetty which was excellent and main source of information for "what's on" La Terrasse de Liku on coast road north of jetty. Excellent both for dinner and lunch with French menu. There was a dancing display on Saturday night. Car hire: There is nothing obvious, need to ask around. Four

wheel drive is highly desirable. We hired from Pacific Dinh (North of hospital and not where shown in Lonely Planet) but I suspect that car will have died by now. Wallis has very few tourists and is not organized at all for tourism. There is no public transport and a car is essential. The roads start off as metal led then descend into dirt/mud, thus the reason for four wheel drive. A must is to see the two archaeological sites but you will need the help of the Cultural head to find them. He is Sioesio Pibroko (Georges) and is at the cultural office on the left of the main road near the hospital.

Chapter 6 – Provisioning

Chapter Overview:

- Provisioning Highlights and Recipes from Renee Prentice, Scarlett O’Hara
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Provisioning Highlights from Renee Prentice, s/v Scarlett O’Hara

Resources:

- * **Kirkland chicken breast cans (Costco label) – Mega Commercial**
- * Good meats – Sam’s Club, Mega Commercial, Carnes del Mundo (Bucerias)
- * Rizzo’s (downtown) – Gringo products
- * Best fresh vegetables open market – down lateral side street next to Sam’s, ¼ mile on right. Also has fish market inside.

Recommended purchases:

- * Buy all the coke and beer possible – hard to find/expensive in South Pacific
- * Bimbo white bread – lots of preservatives and lasts long unrefrigerated
- * Tia Maria flour tortillas – last months on shelf
- * Lala or Svelty powder milk – tastes like real thing; make as needed; takes less space than UHT milk
- * Dream Whip dry powdered milk (WalMart/Mega) – makes whipped cream
- * Nestle’s La Lechera sweet condensed milk – (add boric acid for anti-cockroaches!)

- * Nestle's Media Crema – same as half & half, in cans
- * Kleenex paper towels (WalMart) – sturdy, reusable
- * Cardboard box tomatoes/sauce
- * Baked chicken – debone, shred and freeze for fast meal
- * Powdered Gatorade – WalMart
- * Vitamins & minerals!!

3. PROVISIONING HINTS AND IDEAS BY MARILYN OLIVEIRA AND THE CREW OF *TORTUGA*

I hope you all have started an inventory system, not only for the cook, but for crew who may need to find supplies. I keep a notebook that has an internal diagram of the boat in the front with every locker named or numbered and a separate page for each locker. Working from the back of the notebook I have several pages with menu ideas broken down with a page for breakfast, lunch, dinner, snacks, cocktails, desserts, etc.. 'Just a list of favorite meals to help on the days when you are not feeling creative, and there is not a restaurant in sight for many watery miles. It can give you some incentive and keep you going.

Just a story to make you laugh. When my husband and I took our first two week vacation on the boat to the California Delta we had read all the books, and the thoughts at the time were to put each days food in a plastic bag numbered (all menus were done ahead) and each day you got the appropriate bag and all the ingredients for that days meals were in the bag. This way the cook could relax and not have to think about meal plans. You ate only that day's food and didn't touch the other bags until their number was up. This was such a disaster its a wonder we ever sailed the boat again. We also got so hung up on the bags and doing everything the proper way at the time that we did not have a deck of cards on board, or a single book to read for pleasure. But by the next summer we had corrected our mistakes and tried the trip again, without the bags but with cards, books and a baby.

Keep a locker that is always available for the munchies, especially during passages. The cook gets angry when woken up to dispense food in the night, but even worse is when the crucial ingredient for the next meal was eaten by some innocent crewperson and there is not a store for miles. Individually packaged treats, instant cocoa, soup, oatmeal packs, small candy bars, etc. are good. You will learn what you like to eat at odd hours. My favorite middle of the night treat is a Tootsie pop.

Once you leave the U.S., no matter how long or short your grocery list is, be prepared to almost NEVER find everything on your list. Be prepared to improvise, go without, or fake it.

Cookbooks are only as good as the ingredients are available. Get at least 1 or 2 basic cookbooks, *The Joy of Cooking* is a must for the odd basic information & one like Betty Crocker.

Try new foods you find in the market place. Only buy a small amount to taste. My family and I tried new foods; some we liked and some we quickly decided it must be an acquired taste, but it was fun to explore.

If you have crew along for any length of time find out about food preferences. We had one friend who loved ketchup and he was with us during a time of a ketchup shortage in Mexico. Another crew member would ask right after breakfast what we were having for dinner so he could spend the day anticipating the evening meal. (Don't ask how many times dinner would come and he'd say "this isn't what you said we were having")

If you are hung up on a particular brand name product take what you can from the states. The same product in a foreign country may not be exactly the same. Brand name US food is usually more

expensive than the local brands. Quality control differs a lot from country to country. Example is a six pack of soda bottles. The amount of liquid may be 1/2 inch different from bottle to bottle. If you see something in the market...BUY IT....it may not be available in the next town or even the next day.

While you are spending all the time on the food provisioning, don't forget books to read for pleasure, trade goods, craft and hobby supplies, games, books on birds, shell,, sea life, the area where you are going. music, etc. Provisioning is more than the food and drink you put on board and where it is.

Try to remember US holidays and learn about local holidays.

Ask about anything that may be a problem. I remember one cocktail party where the topic was awful smells in the head and how to get rid of them.

Basic food staples are common all over the world. Our first trip to Mexico I drove myself nuts with all the flour, sugar, rice, etc. I had on board and tried to keep dry. Some staples are good to have but give time to the condiments and treats that will liven up a meal and treat your palate.

Make one person responsible for the organization of the refrigeration unit. This means how the food gets layered in the fridge .I get very crabby when someone rummaged for a cold drink and didn't notice a bag of produce slithered to the bottom of the box and got smashed. The vegetable bags by Ziplock really do help keep food fresh longer, and I've heard West Marine has some green vegetable bags that work well (but not as well as the claims on the packaging).

After all the careful provisioning and meal plans ,your meal preparation will depend on this basic idea.....What's going bad first and how soon do we have to eat it..... white onions keep better than yellow onions.

It usually helps to get out all the ingredients you need for a meal before you start to cook. Try to put ingredients away as you use them. Underway try to have dinner prepared and cleaned up before dark, then you can enjoy the sunset. At anchor, do the dishes before you go to bed. I know this can be a pain some nights but that will be the night you get blown out of an anchorage and besides the safety of the boat who needs all those dirty dishes rattling around. Another way to make cleanup easier, we all have our own color coded mugs, glasses and napkin rings and each person was responsible for their care. This way I eliminated a sink full of glasses that had just held water since no one usually likes to do dishes, especially during night watches.

This can be a source of grief on a cruise. Try to see what you can live without for appliances, and how you can conserve on your water.

Remember, when the overall picture looks overwhelming, break it down into little bits that you can cope with. If you are heading off "to cruise for the rest of your life," don't think of it as forever and ever, take it as short time spans and you will surprise yourself as to how far you can go.

My backpack became my purse for our cruises...and I could carry purchases from the marketplace. Canvas ice bags also have many uses besides carrying groceries. Have a good sturdy bag for laundry. We used old odd socks to slip over glass bottles and jars to eliminate rattle and breakage.

3. Notes From an article in a cruising Magazine-

Items in Laura Hacker Durbin's Galley

1 heavy duty pressure cooker
2 sauce pans w/ lids
a deep frying pan
kettle

muffin tins
 baking trays and pans
 all made of good quality stainless steel

plastic mixing bowls
 measuring cups and spoons
 different sizes plastic containers w/ snug fitting lids essential for storage
 several Pyrex glass baking dishes
 Ziploc bags in several sizes

A log that was dubbed Laura's Bible- record ideas, tips, advice, local shopping info, and current and past inventory logs. Record how long an item lasts: two weeks for a jar of jam, six weeks for a tube of toothpaste... can look back on what you over or under stocked and what was found in each country. In the Bible- each page is devoted to a food group. Keep track of amount on board, amount used, when purchased and where it is stowed
 Sugar and rice are inexpensive in Fiji, coffee from Vanuatu is excellent and available at a good price

Planning ahead- shopping lists

Divide lists into major categories:
 tinned goods, pasta, grains, fruits, dairy, staples, toiletries and cleaning supplies.

Usually tackle one category at a time- leaving fresh foods last
 When it is all done- buy the treats- the sin bin or vice locker

Draw a plan of the boat and label the different areas- ex- PA is port aft. Label tins w/ a marker. Can stow by category. Bulk items can be divided into smaller bags- w/ a bay leaf in all bags and containers to avoid pests.

Fruits and vegs- possible to dip in a solution of bleach and water and soak for 30 min and dry in the sun to eliminate mild and bacteria. Store potatoes and onions separately in a cool, dry place, keep citrus fruits away from apple and store other produce with plenty of air circulation. Long life veg bags help preserve the life of veg. grow sprouts- lentil, alfalfa, and radish. Cheese can be stored in jars of oil.

No need to carry more than a few months supply.

4.Provisioning Steps in Mexico – From Coconut Milk Run Doc

With your own advantages & disadvantages in mind, you may want to consider the following steps:

Step 1: Inventory what you have

I started my provisioning by inventorying what we had on the boat & entering the list in a searchable spreadsheet on our laptop. Other friends used a sheet of paper; use whatever will work for you. I organized the food by location on the boat. As I completed provisioning & as we used provisions I was careful to maintain the spreadsheet. As I was inventorying, I removed everything from the lockers, under the floor & in the fridge. I cleaned everything out with a mild bleach solution and fortunately did not have to worry about getting rid of any pests, bugs, etc.

Step 2: Make a list of what you need

I used Beth Leonard's sample provisioning list from her book. I liked the way she organized the provisioning categories & used her quantities as guidelines. I, like almost every person I talked to who was responsible for provisioning, probably bought too much. I have thrown canned food out, & probably still have enough cans of certain items to last us through another season in the tropics. When you are leaving Mexico, if you are taking our route through the Marquesas, the Tuamotus, & the Societies, you will be about 3 months before you see a well stocked grocery store. You will have 20-30 days on passage where you will only have what's on your boat. You will have access to small stores (magasins) in the Marquesas. The Tuamotus range from no stores to small shops. When you reach Tahiti you are rewarded with a wonderful supermarket, the Continent. It is as nice as any you'd find in the US or Canada.

Step 3: Determine how much is enough

In the end, it will be what you're comfortable with; but remember you can buy food even on some fairly small atolls. Don't buy what you haven't been eating. Canned meat isn't going to taste any different in the Tuamotus than it does in your hometown. Take into account how much you will eat out. Your restaurant choices will be fairly limited until you reach the Societies, but if you eat out every week, you can lighten your provisions some.

Step 4: Buy your provisions

After making my list, I went on several reconnaissance missions around PV.

Sam's Club: I shopped at Sams for my fresh meat as it seemed to be of US quality, some specialty items, cereal, juice, milk, etc. Pretty much all of the shopping I could do at Sam's, I did. I also bought brown eggs here. I kept them un-refrigerated for over 5 weeks without having them go bad.

Commercial: I liked the store by Marina Vallarta. Here I bought items I couldn't find elsewhere, or items that Sam's only carried in jumbo sizes.

Gutierrez Rizzo: I'm not sure of the spelling; I think it is known as GR. However, the store is in Old Town in PV. It has loads of specialty and US imported foods. It was the only place in Mexico I found brown sugar. You won't see brown sugar again until you reach the Cook Islands.

Paradise Village (Sunset Market): This was *very* expensive, but did have some US products I wanted to take with me. I bought some pasta sauces and canned fruit in its own juice, which I had problems finding elsewhere.

Market Shopping: I shopped at Bucerias. I bought all the fresh produce I could there. What I couldn't buy there, I bought at other supermarkets; however, I stored those items in the fridge, as I wasn't sure if it had already been refrigerated.

Things to buy in Mexico

- Any Mexican food you have learned to love as part of your diet. You won't see much Mexican food probably until you return to Mexico. There is some Old El Paso stuff in Tahiti, but it is terribly expensive. If you don't know how, learn to make tortillas. They're easier than you'd think.
- If you have a freezer, stocked up on frozen veggies, frozen fruits, & some prepared foods in that order.
- Paper products are expensive in French Polynesia & not of the quality we're used to in North America or even Mexico.
- Canned fruit in its own juice is hard to find until we got to Tahiti. We liked canned fruit for smoothies and it's a comfort food for me when I feel seasick. The Marquesas has some fresh fruit and veggies, but not as much as you'd think. Everyone grows fruit in their back yards, so it's rarely in the stores.
- Buy enough dairy to get you over the passage. If you have plenty of room, buy more but the dairy products are good in French Polynesia. Even in the smaller Marquesan markets they have decent cheese, butter, yogurt and milk selections.
- Any specialty food items, favorite pre-prepared items, condiments, canned/jarred sauces, heat and serve foods you like. The variety of these, if you can find them at all, will be limited until you reach Papeete.
- Hot chocolate that only requires you to add water
- Pancake syrup
- Pancake mix where you only have to add water
- Staples. Buy as much flour, rice, pasta, sugar as you want to carry. Buy enough for your passage. I had enough to get me to Tahiti & beyond. You can buy flour, rice, sugar & spaghetti everywhere. The Barilla (Italian) sauces & pastas are carried in FP
- Brown Sugar. I had a hard time finding that in Mexico. I finally did at Gutierrez Rizzo. You will not find brown sugar anywhere in French Polynesia. We finally found it in the Cook Islands. If you get desperate, you can mix white granulated sugar with a little molasses, and come close.
- Off or bug spray of choice. The bugs are a real problem for many people in the Marquesas, and even after you leave the biting no-no's of the Marquesas you have to deal with the Dengue Fever carrying mosquitoes of the Tuamotus and Society islands.
- Batteries. I stocked up at Sam's Club on AA's and AAA's for cameras, alarm clocks, walkman, flashlights, etc. We started out trying to be ecologically responsible with rechargeables, but they just wouldn't hold a charge that we felt was acceptable.
- Not being a baker, I stocked up on bread mixes, muffin mixes, scone mixes, other desert mixes. These saved time and worked very well. Baked items will mold in a matter of a few days in the

tropics. Baking fresh things, although it heats up the boat, was always a welcome treat. You will be treated to wonderful baked goods in French Polynesia.

- Fresh food. Use your fridge and freezer as applicable to store your fresh foods. I found some produce kept several weeks in the fridge. However, with the exception of onions, I found most of my un-refrigerated food items were bad in about 1 week.

Stowing food

Dry goods

I microwaved my flour for 90 seconds to kill any critters that might have lain eggs in it & then stored it plastic bags & in Tupperware. I put bay leaves in my rice and pasta. In those food items, I never had weevils. I did get weevils in some flavored rice packets I bought in Mexico. However, as I stored everything in separate plastic bags and/or Tupperware the weevils never spread to other foods & never reached epidemic proportions. By keeping my dry goods in bags & Tupperware, I also never had a mold problem with my dry goods, even when the lockers got wet.

Fresh Food - I found our produce went bad very quickly on our passage to the Marquesas. I thought I had followed all the rules, but learned some new ones in the process.

What I did:

- I bought from a Market (Bucerias)
- I only rinsed the citrus, which I dipped in a mild bleach solution.
- I thoroughly dried all the produce that was wet or damp.
- I tried to buy items that were not yet ripe
- The produce I did not store in the fridge, I stored in milk crates that had been washed with bleach solution & thoroughly dried. The only place I had room for these was in our v-berth; I secured them to avoid bruising.
- I stored some produce in the green long life bags

What went wrong:

- I bought more produce than we could eat before it went bad
- As the non-cook I learned apples cannot be near anything. Citrus cannot be near anything other than other citrus. Onions cannot be near potatoes. I broke most of these rules, although only for 1-2 days. But the damage was done. Most of my fruit went bad in less than a week, except the apples, onions, garlic, jicama, and what I stored in the fridge. Bell peppers seemed to last a bit longer.
- The potatoes liquefied & created what had to be the worst smell known to man. This happened to a few other cruisers I knew. After battling with the pungent liquid spuds, I & several other cruisers who experienced the same thing have been fully converted to freeze dried potato options unless we're in port. I have been very happy with instant mashed potatoes & a friend found some really wonderful dried hash browns at Costco in the US.
- I think my biggest problem with my produce was a lack of ventilation. Most of our produce was in our v-berth. It was very hot & had almost no air movement. We had a very boisterous passage, and therefore had the boat shut up tight as a drum most of the time to keep salt water out.

What went right:

- I stored my eggs without refrigeration. I didn't shellac or Vaseline them. I simply turned the egg cartons over every other day, and they kept wonderfully for 5 ½ weeks.
- I had bread molding very quickly, except Mexican *Bimbo* bread which kept for 25 days unrefrigerated on the way to the Marquesas. I had some experienced cruisers from Europe swear to me that if you painted a loaf of bread with vinegar and then securely wrapped the loaf in foil and put it in a plastic bag that it would keep for weeks. I did not try this.

Pre-passage planning

I have become a very big fan of pre-passage cooking before we leave port. As I always feel queasy the first 3 or so days out, I find having some hearty meals Ken can just heat up really helps. Here are some of my favorites:

- Pre-cooked rice. I like it heated up and plain when I'm feeling sick. It also can beef up soups and shorten the prep time on any dish served over rice when I'm not feeling like cooking or it's too rough or too hot to want to heat a pot of water
- Quiche. It is easy and can be reheated for breakfast, lunch, or dinner.
- Lasagna and/or spaghetti sauce
- Muffins or bread for quick breakfasts
- Snacks: Crackers, cookies, beef jerky granola bars, etc.

Helpful hints

We used UHT milk and juice all across the pacific, it was easy to store. We kept both refrigerated after opening. We usually drank the juice in a few days after opening.

I am paranoid about bugs. I remove all cardboard and packaging before provisions come on the boat, this is also a huge space-saver on our small boat. I have also started removing labels from cans; we had friends who think that is how they brought cockroaches onto their boat in the Marquesas (they still have them in New Zealand).

Notes on French PolynesiaMarquesas**Facilities**

Fuel was available in Hiva Oa and Nuka Hiva from the wharfs. It is possible to tie stern-to in Hiva Oa, but it can be a little dicey if there's much wind. Nuka Hiva is a breeze, again stern-to. Both are also the best place to get gasoline but all of the islands have cars and you can find gasoline for your outboard if you run out.

Water (and a shower!) is available at the wharf in Hiva Oa. If it has rained recently there may be sediment in the water supply so use a filter.

Internet is available at the French restaurant on the right as you come down the final hill leading to town. You'll need to buy a phone card (available there) and pay the restaurant for the computer time. Speed is ok given that you're going through a satellite link to Tahiti then to France and then to the US.

Provisioning

If your first stop is going to be Fatu Hiva, we heard from our friends that there was very limited supplies, but you could trade with the locals for lots of fruit and limited veggies. Cruisers that went to Fatu Hiva reported that the locals are very cruiser savvy and can be a bit aggressive in their bartering. It sounded like Mexico.

Hiva Oa and Ua Pou were comparable in their stores. There were a few small shops with the basics. Every town will have baguettes, but you may have to go in the morning before they run out. Nuka Hiva, the largest island, had several better stocked stores.

What is good and easy to find:

- Fantastic bread. Baguettes are everywhere and cheap. About \$0.40. You can also order wonderful loaves of bread for sandwiches, etc.
- Fresh fish and lobster at the larger markets. Particularly Nuka Hiva. There is a great Saturday market at the main pier, but take your bug spray and a flash light – it starts at about 4:30am
- Great baked goods: quiche, cookies, éclairs, etc.
- Every store had a decent selection of milk, yogurt, and cheese

What you can find with some persistence:

- Veggies, check if there are days when produce trucks will be available
- Fresh fruit, but you may have to trade for it, as all the locals grow it, there isn't that much in the stores
- Canned goods and frozen meat: check the stores. They may be empty when you first check, however, find out when the supply ship arrives. After the supply ship comes, some of the magasins look like different stores.

What you may have to live without:

- Much selection of fresh veggies
- Any specialty items

Don't Miss

- Church service for the wonderful singing or at least a practice session with the choir
- At least one group island tour
- Tapas on Fatu Hiva
- Wood carvings on most islands

Navigation Notes

Charlie's Charts is all we really used for harbors. Entrances are straight-forward, just pay attention to the bottom type indicated when choosing an anchorage. Your stern anchor will get a workout here. Just set the bow into the incoming swell and you'll minimize your roll.

Tuamotus

Facilities

Small quantities of fuel may be available from the larger atolls but don't count on it. Gasoline can usually be found. Provision as though you won't find either as locals have priority and if supply ships have missed shipments then there may not be any available for yachts.

Water is limited to what the islanders catch and friends without a watermaker were frugal. If you need water, the best source is probably a big boat with a large-capacity watermaker.

We found four Internet terminals in the Makemo post office and evidently this is not unusual on the larger atolls.

Provisioning

We only went to two atolls, Raroia and Makemo. Raroia only has a population of 50. There was no store, during the five days or so that we were there we also did not see any type of supply ship though locals say it comes once a month. Makemo, which is a larger atoll, had several stores. The following notes are regarding Makemo.

What is good and easy to find:

- Fantastic bread. There was a wonderful bakery where you could find both baguettes and loaves of bread.
- The stores had staple dry goods, some frozen meats, and canned goods.

What you can find with some persistence:

- Some people fished in the atolls, but ask the locals before you do. Ciguatera is a real problem in the Tuamotus, we know several people who got sick
- You may be able to get some basic produce: garlic, onions, potatoes, or carrots if a supply ship has been in recently

What you may have to live without:

- Any specialty foods
- Most fresh fruit and veggies.

Don't Miss

- Drift snorkel through a pass. Be sure to time the tide right (incoming), keep the dinghy close and keep survival gear in the dinghy (VHF, blanket, oars, etc)
- For divers, a pass dive
- More snorkeling in the lagoon
- Visit an uninhabited motu on the other side of the lagoon and do a beach fire. There are two motus at Makemo across from town that do not have any rats and are totally uninhabited.
- Trade for black pearls

Navigation Notes

For the good news, we always found more markers and nav aids than the chart showed. We used our eyes more than anywhere else and didn't trust any chart source, electronic or paper. Tide times were difficult to gauge and no popular tide program was completely accurate.

We only did two pass entrances. The one on Raroia was difficult as there were more markers than on the charts and it was our first one. It wasn't until we were just outside the entrance that we could reliably tell where we were. The waypoint in Charlie's Charts was correct, but we didn't trust it. Makemo was like a highway and the directions in Charlie's Charts were very helpful.

Some tips for navigating passes in the Tuamotus:

- It's *very* important to time entrances for between 10am-2pm as the sun is high and helps you spot coral heads.
- Make sure you know where you are, what the state of the tide is and what bearing to follow as you head in the pass.
- Some passes have range markers, some have markers that you might assume are ranges but aren't. Don't assume.
- We used Pangolin's TideComp program and found it to be pretty good. However, you'll need to interpolate for various islands as there are only two tide stations represented.
- The ideal tide is to go either at slack or at the start of an ebb for an entrance or the start of a flood for an exit. Some passes reputedly can see 8 knots or more of current. The most we saw was three knots and it seemed rare to hear of a tide that an engine couldn't overcome. It would be ill-advised to enter a pass for the first time on a flood as you may not have the control necessary to navigate the channel.
- If you have electronic navigation, it is helpful to have that running so you can keep a track of your entrance – if you need to leave in a hurry, this can be an invaluable nav aid in a cloud-covered day. We used our track to exit Raroia on a completely cloudy day.

Once inside the lagoon, keep an eye out for coral heads. There's usually a town near the pass where the freighters come, so this channel is often well marked. Some tips for navigating inside the lagoon:

- Stick to 10am-2pm for moving the boat. It's possible to extend those times an hour in either direction as long as the sun is behind you, but remember that you'll make as much as 90 degree turns so it won't always be to your rear.
- Coral is very visible at midday with clear skies. Standing on the bow is sufficient.
- When clouds cover the sun, coral can disappear before your eyes. Consider standing on the bow pulpit or somewhere a bit above deck if you're navigating in overcast conditions. Better yet, don't move the boat.
- When moving to the "other" side of the lagoon to visit the motus, remember you don't have to go where everyone else goes. It is usually safe to go anywhere within the lagoon.
- Don't be on the "wrong" side of the lagoon when strong winds are forecast. Conditions can get nasty fast and it is not uncommon to have 3' waves inside the lagoon. Once the bad weather moves in, moving the boat is out of the question. Be on the side of the lagoon that the wind is going to come from and you'll have lots of wind and flat seas – the closer to shore you are the better.

Societies

Tahiti

You'll most likely make your first landfall in the Societies in Papeete, Tahiti. Welcome to the big town! The first thing you'll need to do is park the boat. The two most popular options are:

- **Quay:** The quay you see in the pictures probably isn't where you'll tie up. It seems to be filled with semi-permanent liveaboards. However, to the west of the quay you can bow anchor and take two lines to shore from your boat. There are bollards and/or trees to tie to. They were in the process of building a second quay when we were there and you might also be able to tie up there. The plus with this option is that you're right downtown. The downside is the constant noise and polluted water plus a modest fee.
- **Maeva Beach:** Around the corner from downtown is Maeva Beach. You can anchor in some smaller bays or out on the reef. There is generally room for two to three rows of boats on the sand shelf inside the reef in depths from 7' to 25'. Note that there is some tide and certainly current. The closer you are to the reef, the more you'll point at the reef with the current that results from the waves coming over the reef. The closer you are to the channel, the more you'll swing with the tides. The upside here is that the water is clean, the noise low, the price free, the excellent grocery store close and the view of Moorea breathtaking. The downside is that you'll get wet during dinghy rides to shore with wind blowing, you

need to take a bus to town (not a big deal) and you need to watch for boats (cruise and charter alike) anchoring too close for tidal shift.

There are also several more options including marinas, so consult your cruising guides. But to get checked in, we would recommend choosing one of the above.

Checking in is quite easy. Immigration, Customs and the Port Captain are in the same building! If you applied for an extension, consider getting your mail first as it will save an extra visit to Immigration. You'll also need an additional stamp from the post office for each passport. Visit Immigration, then Customs, then the Port Captain.

- At Immigration you'll need to provide all your boat paperwork, passports and your bond receipt. If you have your approval letter for your extension, provide that and the stamps too. For extensions you might need to leave your passports there for a day. You'll be asked where and when you plan to check out of the country. Think about this as your clearance is sent to that location.
- After you're done with Immigration, the officer will send you next door to Customs. Customs stamps a form and sends you to the Port Captain. Note that this form is your ticket to duty free fuel. Make copies of it as you'll need to provide a copy when you buy fuel to get the duty-free price.
- At the Port Captain, you'll be assessed the daily fee if you are anchored off the quay. Otherwise, it's simply a check-in. If you move your boat, they ask you to check back in with them so they know where your boat is located.

Before moving on to other islands, be sure to check out of Papeete. Some people were told to check in at each island they visited, others were told just to check into their last island. We checked in where there was a port office (Huahine and Bora Bora – none in Moorea).

Fete

Fete is a month-long celebration throughout French Polynesia but is particularly celebrated in Papeete. If you plan to be in Papeete for Fete, consider arriving a week or two before the celebration starts to take care of officialdom and get settled in. If you will be on the quay, the earlier the better as boats really get packed in.

Facilities

Fuel is available throughout the Societies. However, you'll want to use a fuel provider that can provide you the duty-free price. The dock in the Maeva Beach marina worked great as did Bora Bora. We did hear a rumor that the Bora Bora tanks can sometimes take in seawater so we were very careful to use our Baja Filter – but we didn't find any water in the fuel. Many boats go to Raiatea for both provisioning and fuel on their way out of the country but once we were in Bora Bora we didn't want to backtrack.

Water is also quite available and clean.

Internet service is everywhere. In Papeete, E-Six was the café of choice for cruisers as they had US keyboards and fast service.

Provisioning

We spent time in Tahiti, Moorea, Huahine, and Bora Bora. After the Tuamotus, you will be delighted to see Papeete. We got rather stuck there, but the Continent (located by Maeva Beach) is like a top notch grocery store in the North America. You should also check out the central market downtown. After you leave Papeete you will not see anything like The Continent grocery store, but there are plenty of places to buy what you need.

The Societies are expensive. We would recommend stocking up at the Continent in Papeete for the rest of your stay in the Societies, as the quality, variety and prices on the other islands will be less favorable. You won't starve, but on most islands you're back to frozen meat, and once we did end up paying over \$1/egg and \$4 for a cucumber. However, if you are planning to stop in Rarotonga, don't provision any farther than that. It's cheap, Kiwi prices, and they too have a several fantastic grocery stores, similar to what you'd find in the US or Canada.

What is good and easy to find

- Anything in Papeete

- Great fruit
- French cheeses
- Great baked goods are still the standard all through the Society islands
- Try eating out at the Snack Shacks (aka Roach Coach). Most have good burgers and chow mien.

What you can find with some persistence:

- Fresh meats are more challenging once you leave Papeete, so we filled my freezer with boneless skinless chicken breasts when we left Tahiti, and was glad we did.

What you may have to live without:

- Nothing, but watch the prices; stuff can be expensive.

Laundry

There are no places to do your own laundry. However, though a little expensive, there are several places where you can send it out. We were anchored off Maeva beach and the marina office at Maeva Beach sends out laundry. We used the service, and happily paid for it after nearly 3 months of doing it by hand. Then Cath was back to doing laundry by hand in Huahine, Moorea, and Bora Bora. We didn't look very hard for a laundry service on those islands though we know friends had laundry done in Raiatea.

Navigation Notes

The recent French charts are very good as are the C-MAP charts. The Moorings charter guide is helpful and can be purchased in Papeete. If you're not familiar with them yet, learn about cardinal markers and remember the nav aids are green, right, returning.

Don't Miss

- Fete in Tahiti including the great dancing and the javelin throwing, fruit carrier and stone lifting competitions
- Scooters on Moorea
- Diving: sharks on Moorea, Manta rays on Bora Bora. Maybe you'll see a Napoleon fish, a giant wrasse – very cool!
- Feed the stingrays on the NE corner of Moorea – take the dinghy though as that anchorage is tiny and shallow with a narrow pass (and is also next to Club Med). Go next to the final green marker closest to the resort and stand in 3' of water with chunks of fresh fish and the stingrays will eat out of your hand. Don't step on them! If you can't find the place, go to the resort and have a drink and watch for the tour boats to come.
- Dinner at Bloody Mary's and the Bora Bora Yacht Club on Bora Bora. Note that the Bora Bora Yacht Club has just changed ownership at the close of this cruising season. Bring a burgee to hang in the club.
- Buy some pareos

Clearing out of French Polynesia

A week before you're ready to leave, visit the bank where you obtained your bond (Socredo if you came in at Hiva Oa) and ensure they have all the paperwork necessary to process your exit. Even better, you can get your bond back as soon as you make it to your final island. Immigration doesn't need to see your bond to check out, only to check in. And the bank is happy to give you your money back whenever you ask. But they need to have received your clearance from Papeete and that is only forwarded to the location that you told them you would leave from. They won't credit your credit card if you took a cash advance, so know how you want your money back. US cash was no problem and neither were New Zealand travelers checks. We opted for the travelers checks which we could cash without another currency conversion in Raratonga.

To check out with Immigration, follow the now-familiar drill. They will issue you clearance papers and stamp your passports. It is ok to check out several days before leaving – they will ask you when you plan to leave and we found that if it's within a few days "depending on weather" they were ok. More than a week is

pushing it. We do know of at least two boats that told them a few days and then stayed on for a few weeks but this just irritates the officials, so don't do it.

Rarotonga, Cook Islands

Perhaps our favorite stop, Rarotonga was a place we hadn't even thought of until we were preparing to leave Bora Bora. The island is small but very different in culture from the French. Read through our web site for detailed information on this stop.

Harbor

When you enter the tiny harbor, you'll either med-moor or bow/stern anchor depending on how crowded it is. Crossing anchors seems to be the norm, so it is common courtesy to ask your neighbors where their anchor is and to dive on your own anchor after you are secured. Once you're secured, check in with Don the harbormaster. It will be the easiest check-in you may ever have.

Facilities (Fuel, water, laundry, internet, provisions)

Fuel is available on the wharf. Don will arrange to have the fuel truck come down if there is a need for more than 100 gallons (between multiple boats). For small quantities you can jerry jug it to a nearby gas station.

Water is available right on the quay. A free private shower is also in a building on the quay.

Internet is available in town. Town is a ten-minute walk away. Scooters can be rented for the week for the same price you pay in the Societies for a day.

Provisioning

We felt like we had died and gone to heaven when we reached Rarotonga. Everyone spoke English, and was so friendly and helpful, both the Cook Islanders and the Kiwis. The quay where you med-moor is close to a huge high-quality and very cheap grocery store. There are also several nice stores on the other side of the island, but you'll need to take the bus or go on a scooter. Don't miss the Friday and Saturday markets, which have loads of fresh produce, food stalls, art and cultural activities. If you provisioned at all in the Societies, you'll wish you waited. You can also get duty free liquor when you leave but note that there are import limits for New Zealand and the prices in New Zealand aren't that much different.

What is good and easy to find

- Everything
-

Laundry

There is a VERY cheap laundry service across the street from the quay. There is no self-service laundry.

Don't Miss

- Friday/Saturday markets
- Fish and chips (or "fush and chups" as they say here) and a good beer
- Scooters
- Hike over the island – read and follow the signs (see our web site for our wrong turn)
- Windsurfing rentals and the sailing club
- Movies and popcorn!!

Niue

Niue was a unique and educational stop for us and is a cool place to visit. One boat had been there for four months when we arrived – they had come at the end of the previous season and loved it so much they came back for an entire season.

Harbor

There were 14 well-maintained moorings in the harbor this year and that number may increase or decrease from season to season. Mary with Alofi Rentals runs the “Niue Yacht Club” and maintains the moorings. You pay a harbor fee of \$5/day whether or not you use a mooring so if one is available use it and protect the seabed. Call Niue Yacht Club on 16 to ask for a mooring assignment appropriate for your length and weight of boat.

This is an open roadstead anchorage but is quite well protected from the prevailing wind and swell. If the wind is shifting to the west and bad weather is predicted, leave. Period. If you want to see what the harbor looks like in a severe westerly see Annie at Niue Dive who will show you a picture of waves crashing over the crane on the wharf. You don't want to be on a lee shore here during bad weather.

Checking in is easy. The Customs/Immigration office is behind the bank to the left of the liquor store.

Facilities

Fuel is not readily available at the dock though you may be able to arrange small quantities if needed. We don't recall water being on the dock but the island is large enough that you can probably jerry jug it from somewhere.

Internet is available for free on the island but is painfully slow.

Provisioning

You are still in the land of English which is nice. However, the plight of Niue (quickly dropping populations as the islanders move to NZ and Australia for more opportunity) affects the stores. Once a month there is a fair/market which is wonderful. We missed it, but we had friends that had a great time at it, and you could buy local seafood and produce. There are a couple small stores, which are fair. You will find fresh produce after the supply ship arrives. We didn't really need everything after leaving Rarotonga.

What is good and easy to find

- Most staples
- Frozen meats
- Canned goods
- Duty free liquor
- Good bakery
- Excellent Kiwi ice cream
- Patronize some of the very reasonable restaurants

What you can find with some persistence:

- Nothing. No trading or bartering is needed, just check all the stores in the main town

What you may have to live without:

- Perhaps fresh produce, right before the supply ship arrives

Laundry

There is a reasonably priced laundry service up the hill from the wharf. There is no self-service laundry.

Don't Miss

- Tali's cave tour
- Rent a car from Mary at Alofi Rentals and go on the hikes. The tourist trails and hikes are in superb shape and the scenery looks like something out of a movie.

- For divers, scuba diving should not be missed. The visibility is out of this world and sea snakes are cool.
- Visit the Niue Yacht Club and meet Mary

Tonga Islands

Vava'u will likely be your first stop. We liken it to a combination of a La Paz community (several regulars) with a Caribbean atmosphere (at least with the waterfront bars and charter operations) in a Pacific Northwest setting (islands are similar to the San Juans). It's none of these and all of these. It was laid-back, fun and friendly and we're looking forward to going back and exploring anchorages we didn't get to the first time.

Facilities

Fuel is available in Vava'u at Sailing Safaris but was the first place that we had a serious water problem. We couldn't get more than a gallon through the Baja filter without the water filter backing up. So we bypassed fuel here though many other boats that had foregone the Baja filter filled up and didn't have a problem.

In Nuku a'lofa you can purchase duty free fuel from either BP or Shell. You need to have a form authorized by Customs with an amount you are requesting filled out. *Make this more than you need* as you are then limited to that amount from the fuel company. BP brings a truck down and will fill jerry jugs or if you move to the concrete wharf can fill directly to the boat. Shell is on the wharf and can fill from there.

No problem with obtaining water in the main ports of either Vava'u or Nuku a'lofa.

In Vava'u we had a huge surprise. Internet access was available but at \$60/hour US. That's not a typo. There are two phone systems in Tonga – the local one is very expensive and is necessary to connect Vava'u and Nuku a'lofa, thus the high cost. Beluga Diving will receive emails at a special address and print them for boats. In Nuku a'lofa Internet access is about \$9/hour US and is plenty fast.

Provisioning

Vava'u:

Tongan is the official language, but almost everyone speaks English. The stores are more like what you'll see in French Polynesia as far as quality and variety. The prices are however very inexpensive – more like Rarotonga. Neiafu has some excellent restaurants, so you may be eating out fairly often if the budget permits. Vava'u has about four small stores with staples, canned goods and frozen meats. There is a daily market that has a good selection of fruit, but a limited supply of veggies.

What is good and easy to find

- Most staples
- Frozen meats
- Canned goods
- Duty free liquor
- Good bakery, with fantastic cinnamon rolls
- Pineapple from the market that is fantastic!

What you can find with some persistence:

- Fresh veggies. The market consistently has cabbage and tomatoes. We found carrots and tiny green peppers, but not every day.
- I had to look very hard for onions and potatoes as the supply ship had not been to the island in a while

What you may have to live without:

- Some fresh veggies

Nuku a'lofa:

Nuku a'lofa is the largest city in Tonga. There are several good grocery stores with everything you'll need, including fresh meats, good Kiwi dairy selections and canned goods. There is also a great bakery, and a top notch market with all sorts of wonderful fruits and veggies at very cheap prices. You probably will not be taking advantages of these however, as you're probably on your way to New Zealand, where you'll have to give up all your fresh produce and meats, cheese, and dairy.

Laundry

Vava'u

Assuming the 2001 cyclone didn't destroy it, Sailing Safaris (which provides a number of tourist activities) has two washers and dryers where you can do your own laundry. You can also take the laundry up the hill from the waterfront restaurants and have it done for you for the same price.

Nuku a'lofa

You'll be able to have your laundry done for you in town. We didn't do this, but we had friends that did.

Navigation Notes

The Moorings charter guide is THE guide for Vava'u. Anchorages are known by number. Get both the book and the chart and you're set. C-MAP and Maptech electronic charts are quite good, especially in Nuku a'lofa.

Don't Miss

- Diving in Vava'u
- Snorkeling with the humpbacks
- Snorkeling on the west side of anchorage #16
- Friday night racing in Neiafu harbor
- Cinnamon roles and burgers at Anna's Café
- Remote-controlled AC boats and theme party nights at Mermaids
- According to our friends, try some of the restaurants away from the waterfront, we heard they were excellent

We've included the following resources in this appendix for your reference:

Comment [KAM1]: Email Address

Our Provisioning List: Puerto Vallarta, Mexico

Category	Products	Specific Item	Quantities		
Non Food Items	Paper Products	Paper Towels	18 Rolls	Sams	
		Toilet Paper	48 rolls	Sams	
	Misc Kitchen products	Batteries			Commercial
		Trash Bags		1 large box – sams	
		Butane Lighter		2	
	Pharmacy	Stugeron		5	Sams
	Misc	Tennis Balls			Commercial
	Cleaning Supplies	Vinegar		2 Large	
			Bucket	4 small bottles	
		Joy		2 small bottles	
		Laundry Detergent		1 bottle	

		Antibacterial Soap	1 large, 1 small		
		Airfreshener			
		windex or 409 surfase cleaner	1		
		Bucket	1	Commercial	
		Bottle Brush	1		
Meat/Eggs	<i>Canned Meat</i>	Canned Chorizo	2		
		Spam	3		
		Mexican Turkey	7		
		Shrimp	3		
		Oysters	4		
		Clams	2 large		
		Salmon	2 large		
		Crab	2		
	<i>Dried Meat</i>	Prosciutto	5 large		
	<i>Fresh Meat</i>	Steaks	3	Sams	
		Ground Beef	2 large sams packs	Sams	
		Lunch Meat (Turkey)	2 packs: 1 ham, 1 turkey	Sams	
Roasted Chicken		2	Sams		
<i>Eggs</i>	Fresh, unwashed	5 dozen	Market		
Prepared/ packaged Meals	<i>Canned</i>	Canned Ravioli	7		
		<i>Frozen/Refrigerated</i>	Fresh Pasta	4 large packets	Sams
		Fresh Pasta Sauce	2 tomato, 1 pesto	Sams	
Vegetables	<i>Canned</i>	Hearts of Palm	7		
		Water Chestnuts	10		
		Whole Tomatos	1		
		Stewed Tomatoes	7		
		Tomato Sauce	4 small		
		Tomato Paste	4 large		
		Chiles	2		
		Corn	16 small		
		Artichoke Hearts	8		
		Peas & Carrots	4 small		
		<i>Fresh</i>	Broccoli	1 head	Market
			Potatoes	30	Market
			Onions	10 lbs ~ 5 kilos	Market
			Garlic	12 heads	Market
	Carrots		3 lbs ~ 2 kilos	Market	
	Red Peppers		10	Market	
	Green Peppers		10	Market	
	Lettuce		3 heads	Market	
	Tomatoes		4	Market	
	Cabbage		6 heads	Market	
	Ginger		6 roots	Market	
	Cilantro		Bunch	Market	
	Basil		Bunch	Market	
	Cucumber	8	Market		
	Zucchini	8	Market		
	Jicama	2 dozen	Market		

Fruits	<i>Canned</i>	Fruit Cocktail	4		
		Apple/sauce	20 small cups		
		Pineapple	8 large sliced, 7 crushed own juice		
		Blackberries	3		
		Pears	10		
		Mangos	2 large		
	<i>Fresh</i>	Grapefruit	10	Market	
		Lemons/Limes	2 dozen	Market	
		Melon	4 cantalope	Market	
		Oranges	2 dozen	Market	
		Apples	3 dozen	Market	
		Mangos	6	Market	
		Pears	3	Market	
		Plums	3	Market	
	<i>Dried</i>	Cherries			
		Raisens			
	Dry Goods	<i>Cereals</i>	Breakfast Cereals	5 bags	Sams
			Instant Oatmeal		
			granola/cereal bars	8 boxes	
		<i>Flour</i>	White		
Whole wheat					
<i>Breads</i>		Muffins	1 6 pack	Sams	
		Bread	2 loaves	Sams	
		Tortillas	2 large packs	Sams	
<i>Baking Supplies</i>		Granulated Sugar	3 bags		
		Brown Sugar	2 bags	Commercial	
<i>Rice</i>		White rice	4 bags	Commercial	
<i>Pasta</i>		Lasagna	2 boxes		
		Angel Hair/Linquinni	2 angle hair		
		Random shapes	1 bow tie, 1 penne		
		Macaroni	1 large – sams		
Snacks		<i>Cookies</i>	Butter Cookies	3 tins	
			Milanos		
			Pecan cookies	2 boxes	
			Peanut Butter Cookie Mix		
		<i>Desert</i>	Jello - assorted	13	
	Brownie Mix		4		
	<i>Crackers</i>	Saltines			
		Ritz	1 large		
		Wheat Thins	3		
		Graham Crackers	1		

	<i>Candy</i>	Bakers Chocolate	4	
		M&Ms	1	
		hard candy	2 large boxes	
	<i>Nuts</i>	Cashews	1 large jar	
		japones	6	
		almonds	4	
	<i>Chips</i>	Pringles	2	
		Chips	2	
Beverages	<i>Pop</i>	Ginger ale	12 cans	Paradise Village
		Coke	6 cans	Paradise Village
		Diet Coke	6 cans	Paradise Village
		Manzana	6 cans	
		Tonic	3 bottles	Paradise Village
	<i>Drink Mix</i>	Coffee/Moka mix	5	
	<i>Juice</i>	Long Life Juice	26 Boxes	
	<i>Alcohol</i>	Beer	1 6-pack bottles	
		Rum	1	
Dairy	<i>Milk</i>	Long Life Milk	12	
		small boxes milk	10	
	<i>Butter</i>	NZ butter	10	
		Sams Butter	4	
	<i>Cheese</i>	Kraft grated parmesan	4	
		Philly Cream Cheese	4	
		Ricotta	3	
		Jack	1	
		Mozerella	1	
	<i>Yogurt</i>	Assorted Flavors	2 large	
condiments	<i>Oils</i>			
	<i>Misc</i>	Vinegar	4 – white	
		pina jam	1	
		Mole	6	
		Bacos	5	
		Soy Sauce	2	
		Syrup	2	
		Salad Dressing	Thousand Island	3
			Cesar	1
			Roquefort	1
			Ranch	1

5. Food planning- Notes from books I've read- S/V New Dawn

Length of shelf life:

Canned foods- 18 months

Flour – 12 months

Rice- 12 months

Food preservation-

Drying- choose a warm day, slice fish into thin strips and hang well spaced on a drying line

Bottling- pressure cooker. Though you end up w/ lots of glass on board

Long life veg. bag – use separate bags for different produce

Where possible- refrigerate

If bag is being reused- it should be dry

Only store dry produce in bags

Twist tie top of bag to get all the air out

Install hanging nets and plastic vegetable trays to store produce

Inspect daily

Longest lasting are garlic, onions, potatoes, cabbage, carrots, cauliflower, & pumpkins

Remove leaves from root vegetables before storing

Wrap citrus in Aluminum foil to help it last

Do not store these items next to each other:

Onions & potatoes

Apples & carrots

Bananas & apples

Preservation dips:

Potassium Permanganate- prepare a dilute solution of potassium permanganate and water.

Dip the vegetables in the mixture and allow to dry before storing

Bleach- prepare a dilute solution of bleach and water in a ratio of 1 T bleach per gallon of water. Place each item into the solution and soak for around 10-15 min. Pat dry and leave in the sun to dry for 30 min. Stow in appropriate location. The theory is that the bleach solution kills off the surface bacteria and this is assisted in the drying stage by the sunlight.

Storage life:

Vegetable	un-refrigerated	Refrigerated	green bag
Artichoke	14 days	21 days	not required
Asparagus	4	7	14 days
Beans	3	7	14
Broccoli	2	7	14
Cabbage	28	42	35
Carrots	10	14	21
Cauliflower	10	14	21
Celery	5	8	14
Cucumber	10	14	21
Eggplant	10	14	21
Garlic	28	42	56
Leaf greens	4	7	14
Leeks	7	10	not required
Lettuce	7	10	14
Onions (yellow)	3-12 weeks	not required	not required
Peas	4	7	14
Potatoes	2-12 weeks	not required	not required
Pumpkin	4-14 weeks	not required	not required
Scallions	7	10	14
Squash	7	10	not required
Sweet corn	5	7	14
Sweet pepper	7	10	21
Sweet potato	2-14 weeks	not required	not required
Tomatoes	14	21	28
Zucchini	5	10	14

Storage of fruits:

Fruits such as apricots, nectarines, peaches, pears & plums require ripening at room temp.

Fruits such as avocados, kiwis, mangoes, papayas & rock melon are ripened at room temp and then stored in the refrigerator

Fruit	Un-refrigerated	refrigerated	Green bag
Apples	14	21	28
Apricots	4	7	10
Avacados	4	7	10
Bananas	4	7	10
Cherries	4	7	10
Citrus	14	not required	not required
Grapes	7	10	14
Grapefruit	21	not required	not required
Mangoes	4	7	10
Nectarines	4	7	10

Papaya (paw paw)	4	7	10
Passion fruit	10	14	21
Peaches	4	10	14
Pineapples	7	not required	not required
Plums	4	7	10
Rockmelon	5	10	14
Strawberries	4	7	10
Tamarillos	7	10	14
Watermelons	14	not required	not required

How to tell if eggs are bad?

Place in cold salty water- if they float, they are bad. If they sink they are good.

Substitutes:

Butter- tinned butter lasts up to one year in a cool place

Margarine will last up to one month in the refrigerator

Ghee used in Indian cooking come in tins and last long

Basic provisions that keep-

Baking powder
 Baking soda
 Beer & Liquor
 Bread, canned
 Butter, canned
 Cereals- hot
 Cheese- in cans & jars
 Chocolate for cooking
 Cocoa and syrup
 Coffee instant
 Cornmeal
 Cornstarch
 Desserts- packaged

Fish- canned
 Flour
 Fruits- canned
 Fruits- dried
 Gelatin
 Hot bread mixes
 Jams, marmalade, honey
 Juices, canned
 Pasta - also canned
 Meats- canned
 Milk, evaporated, powdered, boxed
 Molasses
 Nuts
 Oil
 Pancake mix
 Pickles and olives
 Piecrust mix

Rice- minute & regular
 Salad dressing
 Shortenings – Crisco, margarine
 Soft drinks- ginger ale
 Soups- canned
 Spreads – peanut butter, apple butter...
 Sugar – granulated, brown, powdered
 Syrup – corn, maple
 Tea
 Vegetables, canned
 Vinegar
 Wines – white, red
 Water- bottled reserve

U.S. Equivalents

1 standard C = 8 oz. = ½ pint
= 16 T = 48 t

½ fluid oz = 3 t = 1 T

1/8 C = 1 oz. = 8 t = 2T

¼ C = 2 oz. = 4 T

1/3 C = 5 T + 1 t

½ C = 4 oz = 8 T

1 ½ oz = 1 jigger

2 C = 16 oz = 1 pint = 1 lb

4 C = 32 oz = 2 pints = 2 lb = 1 quart.

4 quarts = 1 gal. = 8.33 lbs. of water

Liquid-

1 t = 5 milliliters

1 T = 15 milliliters

1 C = @ 0.25 liter

1 pint = 0.47 liter

1 quart = 0.95 liter

1 gallon = 3.78 liters

Metric Dry-

1 pint = 0.551 liter

1 quart = 1.101 liters

1 peck = 8.81 liters

1 bushel = 35.24 liters

1 oz = 25 g 4 oz = 100-125 g

5 oz = 150 g 6 oz = 175 g

8 oz = 225 g 10 oz = 275 g

12 oz = 325-350 g 14 oz = 400 g

1 lb (16 oz) = 450 g 1 ½ lb = 700 g

2 lb = 900 g 3 lb = 1.4 kg

Imperial Equivalents

1 Breakfast cup = 10 English oz

= 20.8 US T = 62 ½ US t

¼ t = 1.25 ml

½ t = 2.5 ml

1 t = 5 ml

1 T = 20 ml

English Liquid-

¼ C = 60 ml = 2 fluid oz

1/3 C = 80 ml = 2 ½ oz

½ C = 125 ml = 4 oz

¾ C = 180 ml = 6 oz

1 C = 250 ml = 8 oz

1 liter = 33.8 oz = 2.1 pints = 1.1 quarts

= .264 gallons

English weight

10g = ¼ oz 30 g = 1 oz

60 g = 2 oz 90 g = 3 oz

125 g = 4 oz 150 g = 5 oz

185 g = 6 oz 220 g = 7 oz

250 g = 8 oz 275 g = 9 oz

300 g = 10 oz 330 g = 11 oz

375 g = 12 oz 400 g = 13 oz

425 g = 14 oz 475 g = 15 oz

500 g = 1 lb 600 g = 1 ¼ lb

650 g = 1 lb 5 oz 750 g = 1 ½ lb

1 kg = 2 lb

Measurements

To convert Celsius & Fahrenheit –

$$(C \times 1.8) + 32 = F \quad \text{or} \quad (F - 32) \times 5 / 9 = C$$

$$C + 17.8 \times 1.8 = F \quad \text{or} \quad F - 32 \times .555 = C$$

Oven temperatures – F – C – Gas

$$275 = 140 = 1 \quad 350 = 180 = 4 \quad 425 = 210-220 = 7$$

$$300 = 150 = 2 \quad 375 = 190 = 5 \quad 450 = 230 = 8$$

$$325 = 160-170 = 3 \quad 400 = 200 = 6 \quad 475 = 240 = 9$$

Freezing point of water = 0 degrees C = 32 degrees F

Boiling point of water = 100 C = 212 F

Liters x .0353 = cubic feet

US gallons x 3.785 = Liters or Liters x .2642 = US gal.

US gal. x .833 = Imperial gal. or Im. gal. x 1.2 = US gal.

Pounds x .4535 = Kilograms or Kilograms X 2.2046 = lbs.

Quart X .9463 = Liter or Liter x 1.0567 = Quart

Sound travels 1100 feet/second or 335.28 meters/second

Substitutions-

Flours-

1 T flour = ½ t cornstarch

= 2 t quick cooking tapioca

1 C sifted cake flour = 7/8 C sifted all purpose flour

Baking Powder = ½ t cream of tartar + ½ t baking soda

Sugars-

1 C sugar = ¾ C honey or molasses or maple syrup
(reduce liquid in recipe by ¼ C)

1 C honey, molasses or maple syrup = 1 ¼ C sugar
(increase liquid in recipe by ¼ C)

1 C sugar = 1 ¾ C confectioners sugar

1 ¾ C confectioners sugar = 1 C sugar + a bit of flour
(use for frosting, play w/ amount of flour)

1 oz chocolate = 3 T cocoa + 1 T butter

6 oz semi sweet chocolate = 6 T cocoa + 7 T sugar + ¼ C shortening

1 square of unsweetened baking chocolate = 3 T cocoa + 1 T margarine

Dairy-

1 C buttermilk = 1 C milk + 1 T lemon juice or 1 T vinegar. Let stand 5 min.

1 C whole milk = 1 C fruit juice or 1 C potato water or 1 C water + 1 ½ t butter

1 C milk = ½ C evaporated milk + ½ C water

1 C light cream = 1 C evaporated milk

= 1 C half & half

1 C light cream = 1 ½ T butter + 7/8 C whole milk

1 C sour cream = 1 C plain yogurt + 1/3 C butter

Sour cream = 1 C plain yogurt or evaporated milk + 1 T vinegar or lemon juice

1 lb. Butter = 2 C evaporated milk, slowly beaten & poured into pan to chill

Cream (for baking) = ½ C butter + ¾ C milk

Whipped cream = ½ C nonfat dry milk + 1/3 C cold water; beat well &

add 2 t lemon juice, 3 - 4 T sugar, dash of vanilla. Beat until peaks

1 egg = 1 t vinegar (white, apple, cider or red)

Spices-

Basil = oregano = marjoram

Caraway = anise = fennel = tarragon

Celery seeds = minced celery

Sage = thyme

Allspice = equal parts cinnamon, cloves, nutmeg

Nutmeg = mace

Other-

1 small onion = ¾ t onion powder

1 small garlic clove = ¼ t garlic powder

1 T fresh ginger = ¼ t powdered ginger

1 ½ T balsamic vinegar = ¼ C wine vinegar

Nuts (for baking) = oatmeal browned in butter

Maple syrup = 1 C brown sugar simmered in 1/3 C water & dash of
maple flavoring

6.Recipes

As the sea change overtakes you, all your senses will amplify. Even basic meals will seem gourmet, and the pounds shed by sensible eating will add years to your sailing life.

Pacific toast recipe

3 eggs, ½ C coconut cream, ½ t sugar, 2 T lemon juice

Sliced bread & 2 T butter

Cook like regular French toast

Oka – fish dish from western Samoa

½ lb fish fillets (yellowfin, tuna, boniti), lime juice, coconut cream
 1 chopped onion, 1 chopped cucumber, salt, 1 chopped tomato

Cut fish into small cubes. Add lime juice, coconut cream, onion, cucumber, salt and tomato. Mix together and allow to marinate for about an hour. Serve traditionally in a coconut shell

Australian anzac biscuits

1 C rolled oats, 1 C plain flour, 1 C sugar, ¾ C coconut
 ¼ lb. butter (4oz), 2 T golden syrup,
 ½ t baking soda, 1 T boiling water

Combine first four ingredients. (first row)

Combine butter and syrup and stir over low heat until melted.

Mix the soda with the boiling water & add to butter mixture.

Stir in dry ingredients.

Lightly grease an oven tray & put T of mixture on the tray. Allow room for spreading. Cook @ 300 F for 20 min. Loosen from the tray while warm & cool on trays

From a magazine & fellow cruisers:

Still sailing strong at 70-something, circumnavigator Reese Palley and his wife Marilyn

Fish Cakes: Mash canned tuna or salmon together with finely chopped onion and a beaten egg or two. Roll and coat with bread crumbs, then pan-by in a little olive oil.

Cabbage-Potato Soup: Boil together in large pot of water: chopped cabbage, onions, and potatoes. Add chicken boullion cubes, salt, and pepper to flavor.

Pasta Primavera: Drizzle olive oil over cooked pasta and toss with your choice of canned veggies. Sprinkle with grated (canned) parmesan cheese.

Kugel: Beat some eggs and combine with leftover unadorned pasta, honey, cinnamon, and raisins. Bake till eggs are set and top is nicely browned.

Bread Pudding: Moisten leftover stale bread and crackers with egg and a small can of evaporated (or UHT) milk, honey, cinnamon, and raisins (or a can of fruit), then bake till done. If you have no oven, pan-fry as you would a pancake.

Six-Way Popcorn: Add - 1) olive oil, garlic powder, & salt. 2) honey. 3) olive oil & cayenne pepper. 4) cinnamon. 5) olive oil & grated parmesan. 6) Eat it plain, w/ or w/out salt.

Provisioning Tips from Kay and Steve of Kavenga – February 2008

1. When you see it, buy it. Those 12 cans of dainty mushrooms might be all gone when you go back to the store the next day.
2. One pot meals. They're easier to prepare, serve, eat and clean up afterwards.
3. Use large, deep soup bowls to eat from. Some single-handers we have known even use weighted dog dishes.
4. Put cookie dough ingredients in zip-loc bags so you can just add eggs and butter. You could also make a batch of dough before you leave port and put it in the freezer.

5. For back-up, when your fresh provisions run out, have a good stock of canned meats. We used Brinkman Farms (Google for their website). Their canned beef, chicken, turkey and burger are outstanding.

For Comparison:

Kavenga originally had an 11-cubic foot icebox/refrigerator. We cut it in half before we left to make the refrigerated half more efficient (12-volt Adler-Barbour). We used the other side for dry storage. Even with only 5 cubic feet, and no dedicated freezer we were still able to make passages like the 38-day, 4700-mile run from Tokyo to the Straits of Juan de Fuca with no degradation of our meals.

Fishing:

The fishing everywhere in the Pacific was good. In fact we generally only fished when we needed or wanted more fish. Typically we would wait until we had used up part of what was in the freezer, so that we had room for fish.

The twilight before sunrise and after sunset are the best times to catch fish. You need to be doing at least 5 knots, preferably 6. Plastic squid seem to work best, the larger the lure, the larger the fish you will catch. The lure should nearly skip along the surface 60 to 80 feet behind the boat.

Among many species, we caught mahi-mahi, yellowfin tuna, wahoo, Spanish Mackerel, and albacore tuna. These are all excellent eating fish. We would skin and filet them, cut them into steaks, shrink-wrap them into meal-sized packages.

One of the easiest and best meals we made with fish was simply, cubed meat with pasta (the curly kind or whatever you like), salt, pepper and butter. Just boil the pasta, add the cubed fish and some grated cheese, cook for a little while longer, drain it, and then add butter, salt, pepper and season to taste, top with parmesan (add a vegetable like peas if you like) and then serve in one bowl.

Shopping:

Eggs: before leaving Manzanillo for the Marquesas, we went to the public market and bought 13 dozen eggs. These were un-refrigerated and un-washed, which is probably best for long-term storage effectiveness. We simply vaselined them and then turned them over once a week during the cruise. We only kept the crate we were currently using in the refrigerator, the rest were in dry storage. Over the course of several months we only lost six eggs. You probably don't need to take as many as we did, but it does show you what is possible.

We had five of the tall (12") Tupperware containers filled with: brown sugar, white sugar, white flour, Bisquick and curly, colored pasta. We also bought dried peas and lentils wherever we could find them as they stored well and lasted indefinitely.

We took cases and cases of pop and beer to the point when we first brought it on board we were walking on it on the cabin sole. When others were starting to pay the outrageous prices for Polynesian (Hinano) beer or Diet Pepsi, we were still drinking our Mexican cans into Samoa and Tonga. Remember the aluminum cans are thin and will corrode through if exposed to salt water.

Some fun recipes:

English Muffin Bread

From: Becky McCalister (Sailing Vessel “Stardust”)

2 Pkg	Dry Yeast
3 C	Flour (White or Wheat)
1 T	Sugar
2 tsp	Salt
½ C	Dry Milk
¼ tsp	Baking Soda
2 ½ C	Water (Quite warm)

Method:

Blend well. Gradually add up to 3 C more flour. Spoon into 2 loaf pans that have been greased & sprinkled with cornmeal. Let rise covered 45.

You can add raisins & cinnamon/sugar.

Bake at 400 for 25 minutes.

Comments:

Flour Tortillas

From: Donna Sassaman (Sailing Vessel Emrys)

4 C	White Flour or (2 White, 2 Wheat)
2 tsp	Baking Powder
4 T	Oil
1 ½ C	Water
1 ½ tsp	Salt
½ tsp	Garlic Powder
½ tsp	Oregano

Method:

Mix & divide into 24 parts. Roll out into round thin shapes. Use hot dry skillet will bubble up. Keep in covered container.

Makes 24.

Comments:

Mexican Corn Bread

From: Nancy Manheimer (Sailing Vessel Halcyon)

3	Eggs
½ C	Cooking Oil
3 T	Sugar
1 ½ C	Longhorn Cheese
1	Large Onion Chopped Fine
2 ½ C	Milk
3 C	Corn Bread Mix
1	Large Can Creamed Corn
1	Small Can Jalepeño Peppers Chopped
OR	In place of Corn Bread Mix
1 ½ C	Flour
1 ½ C	Corn Meal
4 tsp	Baking Powder

Method:

Have pan hot & well greased.

Bake at 450 – 15 Minutes then reduce heat to 350 for 45 minutes.

Comments:

This is really good corn bread. We had it at a potluck on the beach with Rick Berg on Sueño at Great Astrolabe Reef near Dravuni.

Crazy Cake (no eggs)

From: Carol Stevens (Sailing Vessel Southern Cross)

1 ½ C	Flour
½ tsp	Salt
1 tsp	Baking Soda
1 C	Sugar
½ tsp	Baking Powder
3 T	Cocoa
1 T	Vinegar
1 tsp	Vanilla
5 T	Oil
1 C	Cold Water (Could replace with 1 C bananas and ½ C water)
	Frosting:
2 T	Soft Butter
2 T	Cocoa
1 ½ C	Powdered Sugar
¾ tsp	Vanilla
2 T	Milk

Method:

Mix sugar, flour, baking soda, baking powder, salt & cocoa. Make 3 holes. Add vinegar, vanilla & oil into holes. Pour cold water overall. Stir until mixed. Grease & flour 8 x 8 pan.

Bake at 350 for 20-25 minutes or 12 cupcakes 12 15 minutes.

Frosting: Beat until smooth. For white frosting omit cocoa.

Comments:

Used this recipe a lot while cruising 90 -93. Extra good because it doesn't use eggs.

Chapter 7 - Medical

CHAPTER OVERVIEW

Health Precautions from Noonsite

Medications & Kits-

 Noonsite Medical Chest

 Offshore Medical Kit

First Aid at Sea- Seminar from Betsy Plotkin, MD

Info on:

 Ciguatera

 Dengue Fever

 Encephalitis, Japanese

 Filariasis, Lymphatic

 Malaria & Notes from cruisers

 Insect Repellant

 Oral Rehydration & Traveler's Diarrhea

 Drinking Water

 Stugeron (sea sickness medication)

Medical Help at Sea

Article from Cruising World and Beth Leonard about Health at Sea

How to Article on Laceration Repair

How to Survive a Heart Attack Alone from 2005 book

Remote medical report form

Sample Medical Kit Carried by s/v Sunrisa

 A Valliant 40 who traveled through The South Pacific for 3 years

Medicine Chest - Per Peter Noble & Noonsite

Local Anesthetics - The injection of a local anesthetic (lidocaine/Xylocaine 20 ml ampoules) may assist the cleaning and suturing of a wound. The eye requires a specific anesthetic such as amethocaine eye drops.

Infections

-Eye - Chloromycetin ointment or eye drops. Gentamycin or Tobramycin (triple dose)

-Ear Canal - Gentamycin drops

-General- Recommended to carry 2 weeks supply of each: Clarithromycin 250 mgm, 2-4 tablets daily. Alternatively a dose of Biaxin XL 1000 mgm once a day only. Co-amoxycylav 250 mgm, 3-6 tablets daily or Augmentin Ciprofloxacin (urinary tract infections) 250 mgm, 2-6 tablets daily.

Skin Conditions - Hydrocortisone cream 1% for eczema and localized allergic rashes
Neomycin sulphate cream or powder for bacterial skin infections
Clotrimazole (as ointment or dusting powder) for fungal infections & athlete's foot

Allergies & Itchy reactions to bites & stings - Promethazine hydrochloride tablets (Phenergan 25 mgm) or chlorpheniramine (Piriton/Clortrimeton 4 mgm). Acrivastine (Semprex 8 mgm) is less sedative.

Anti-seasickness remedies- Cyclizine/Meclizine 50 mgm & hyosine 300 micrograms.
Hyosine skin patches (Scopoderm/Transderm scop)

Analgesics (pain relievers) - Aspirin 300 mgm & paracetamol 500 mgm for pain, fever & inflammation. Ibuprofen 200-400 mgm for joint and muscular pain. Naproxen 250 mgm & tramadol (50 mgm by mouth or as an ampoule for injection) are good pain relievers.

Vaginal Candidiasis (Thrush) - Canesten (Nystatin) cream or pessaries

Vomiting & Diarrhea - Most episodes are from food poisoning & settle within 24 hours without treatment. Anti seasickness will help vomiting. Diarrhea: codeine phosphate 15 mgm, lomotil 2-4 tablets. Keep hydrated

Sedation - Valium 5 mgm

Offshore Medical Kit

(adapted from The Voyager's Handbook)

Any medical kit needs to be tailored to the medical problems and likely destinations of the boat's crew. The following is a suggested list of basics for most first aid kits. Quantities are rough suggestions. Your medical provider may make substitutions based on available medications, your allergies, their preferences. In many parts of the world, medications are available without prescriptions. In some parts of the world, sterile needles are not readily available, thus the need to carry your own.

(* denotes something available by prescription only in the US)

General Equipment

<u>Type</u>	<u>Material</u>	<u>Quantity</u>	<u>Comments</u>
Instruments	Stethoscope	1	
	Blood pressure cuff	1	Preferably manual
	Thermometer	1	Consider hypothermia thermometer in NW
	Urinary catheter	2	Reusable by boiling to sterilize
	Glucometer	1	To check blood sugar if appropriate
Supplies	Tongue depressors	1 box	
	Q-tips	Many	To clean wounds, remove foreign bodies
	Cotton balls	1 bag	
	Gloves (latex or other)	1 box	

Wound Care Equipment

Type	Material	Quantity	Comments	
Disinfecting	Betadine solution	1 bottle or indiv pkgs	For cleaning wounds	
	Betadine scrub/soap	1 bottle or indiv pkgs	For cleaning hands or around wounds	
	Isopropyl alcohol	1 bottle	For drying ears & misc cleaning	
	Hydrogen peroxide	1 bottle		
	Sterile saline solution	1 bottle	For cleaning wounds	
	Large syringes (20-30 cc)	6	For irrigating wounds	
Surgical supplies	Rubber tourniquet	2		
	3 cc sterile syringes	1 dozen	For injecting drugs	
	Needles (#21, #23, #25) ½ and 1 inch	2 dozen	For injections	
	Lidocaine injectable (2% without Epinephrine)*	30 cc bottle	For local anesthesia	
	Hemostat, curved, mosquito	1		
	Hemostat, straight	1		
	Surgical scissors	1		
	Needle holder	1		
	Scalpels (#10 and #11)	5 each	Clean up wounds, pare callouses	
	Plastic airway	1		
	Small pointed forceps	1		
	Medium blunt forceps	1		
	Suture material with needle 3-0 silk or Ethalon*	3-5	For external sutures	
	Suture material with needle 4-0 gut*	2	For internal sutures	
	Steri-strips	6 pkgs	For wound closure	
	Benzoin solution	1 bottle	For steristrips	
	Dressing supplies	Fabric bandaids, 1 inch, large size, knuckle bandaid	5 boxes	Fabric adheres better than plastic
		2-inch gauze rolls	6	
		4 x 4 gauze pads	24	
Telfa pads 3x4 or larger		24	Non-stick bandage	
Coban tape		6 rolls	Works when wet	
Adhesive tape		4 rolls		
Bandage scissors		1		

Supplies for Specific Problems

<u>Problem</u>	<u>Materials</u>	<u>Quantity</u>	<u>Comments</u>
Orthopedic	Cold compresses (kwik kind)	6	Carry as many as possible
	Wrist splints, adult size	2	
	Metal splints for fingers	3	Can be cut to size
	SAM splint	3	Multi-purpose
	ACE bandages (3 and 4 inch)	6	
	Triangular bandage	2	Can be used as shoulder sling
	Shoulder sling	1	Adjustable type
Teeth	Temporary filling kit	1	
Eye	Sterile eye pads	3	
	Antibiotic eye drops *	2 bottles	For eye infections or abrasions
	Artificial tears	2 bottles	For dry eyes/windburn
Ear	Antibiotic ear drops *	3 bottles	For swimmers ear
	Auragan ear drops	1 bottle	For ear pain
	Afrin Nasal Spray	1 bottle	To decongest nose/ear
Skin	Hydrocortisone Cream 1%	2 30g tubes	For all itching
	Lidex cream (0.05%) or other strong cortisone *	1 30 g tube	For stubborn rashes not on the face
	Zinc oxide	30 g tube	Sunscreen
	Bacitracin ointment	2 30 g tubes	Antibiotic ointment
	Bactroban ointment *	2 30 g tubes	Antibiotic ointment especially for reef injuries
	Lotrimin cream 1%	2 30 g tubes	For fungal infections
	Aloe vera gel	1 bottle	For sunburn
	Silvadene cream *	1 30g tube	For burns
	Monistat cream/vaginal supp.	3 kits	For vaginal yeast
	Diflucan tablets, 150 mg *	20	Single dose pill for vaginal yeast
Gastrointestinal	Ranitidine 150 mg *	30	For reflux/indigestion
	Peptobismol tablets	100	Prevention travelers diarrhea
	Lomotil * or Imodium	50	For treatment of diarrhea
	Milk of Magnesia or Senekot or other laxative	20	For constipation

Infections	Amoxicillin 500 mg *	120	For resp/ear/sinus infections
	Cephalexin 500 mg *	150	For skin infections, also good for penicillin allergic
	Azithromycin 250 mg *	30	For pneumonia, travelers diarrhea, sinus infections
	Ciproflox 500 mg *	100	For UTI, complicated infections, diarrhea
	Ceftriaxone injectable, 1 g dose*	20 vials	For severe infections
Analgesics	Ibuprofen, 200 mg	300 tablets	Anti-inflammatory, pain reliever, fever
	Aspirin 325 mg	100	Anti-inflammatory, cardiac
	Tylenol 325 mg	200	For all types of pain, fever
	Oral Narcotic e.g., Tylenol #3, Vicodin or Percocet *	150	For severe pain
	Injectable Morphine or Dilaudid *	10 doses	For extreme pain
Antihistamines/Allergy drugs	Benadryl 25 mg	150	For all itching and allergic reactions
	Claritin 10 mg	50	Non-sedating allergy drug
	1:1000 Epinephrine *	30 cc	For life-threatening allergic reaction (or Epi-pen)
Seasickness	Dramamine	50	Quantities based on personal need
	Meclizine 25 mg	50	Same
	Stugeron 15 mg	100	Not available in US. NB dose! In Mexico 75 mg available so cut in half for first dose then take ¼ every 6 hrs.
	Scopolamine patch*	1 dozen	If unable to take oral meds; lasts 3 days
	Phenergan suppositories 25 mg*	10	If unable to take oral meds
Cold remedies	Sudafed	100	Decongestant
Sleep aids	Halcion 0.25 mg or Ambien 10 mg	20	Your preference is very important; try ahead of time; can also use Benadryl
Miscellaneous	Your own prescriptions		

FIRST AID AT SEA

Betsy Plotkin, MD

Women's Sailing Seminar

February 12, 2005

THE BASICS

Food—carry all food groups, including canned or dried fruits and vegetables. Consider a multivitamin. Carbohydrates give quick energy, protein gives more lasting energy. Alcohol and cruising are not a good combination.

Water—avoid dehydration above all. Depending on the source, your water may need to be treated. Watermakers remove all minerals as well as contaminants, (thus the need for a vitamin).

Rest—get sleep, arrange watches to correlate with biological rhythms

Conditioning—stay fit

Vision—carry extra contact lenses and 2 pairs prescription glasses

Hearing—carry extra hearing aid batteries

Dental—have teeth evaluated and needed work done before cruising. Take care of your teeth while cruising (brush and floss)

Psychological—know yourself, know your crew, recognize fatigue, recognize “hypoglycemia” (low blood sugar), acknowledge the need for alone time, acknowledge PMS (if appropriate), acknowledge FEAR and how best to handle a “crisis situation”, understand your reaction to these feelings.

SPECIFICS

Sun Exposure-- Protect yourself with clothing/hat, sun screen (know your skin reaction), wear sun glasses (protects your eyes and vision)

Treatment of overexposure--

First degree burns (usual sunburn)—cover up, cool compresses, analgesics

Second degree burns (blistering)—leave blisters in place until they break,

Once open, apply antibiotic ointment, watch for infection

Dehydration—Dangerous because, if unable to sweat, can lead to heat stroke. Drink enough that your urine is light yellow.

Sea Sickness - ANYONE can get seasick and it can recur after adjusting if conditions are extreme. It can also recur on return to land! For most people it lasts about 3 days, then the inner ear & brain adjust. Rare people never adjust & should question whether cruising is appropriate

For the first 3 days:

Stay on deck if possible or close to midship if below

Use a bucket on deck for a head if symptoms are very severe

Take the helm

- Stay active—lying down feels better but may delay adjustment
 Keep food preparation to a minimum and eat simple foods, small amounts often
 Medication may delay adjustment, but if unable to keep anything down, try taking for one day full dose and then tapering:
- Oral: Dramamine—sedating but effective
 Meclizine (Rx)—(Bonine without prescription) also sedating
 Phenergan (Rx)—25 mg every 6 hours
 Phenergan plus Ephedrine (Rx) 25 mg—less sedating
 Stugeron--30 mg initially then 15 mg every 6-8 hrs. (not available in U.S.; very effective and less sedating; available in the UK and Mexico OTC)
- Other: Scopolamine patch (Rx)—one every 3 days
 Phenergan suppositories (Rx)—one every 6 hours if vomiting

Female Issues

- Menses—consider reusable cups or fabric rags to avoid synthetic waste
 Contraception—think about it!
 Realize birth control pills may not work if you are too seasick to keep down.
 Menopause—occasionally heavy bleeding in peri-menopause, discuss with medical provider before leaving; hormones can be taken to avoid bleeding.
 Yeast infections and other vaginitis—rinse perineum; bring medication if prone
 UTI—bring antibiotics if prone (Macroclantin, Cipro, Sulfa but be aware of possible photosensitivity reaction)

Minor infections and other medical problems

Skin—have antibiotics available especially in the tropics (Cephalexin 500 mg 3-4 times/day)

Ear/eye—have drops for swimmers ear (cortisporin otic solution), conjunctivitis (garamycin ophthalmic solution)

Ear—keep dry with solution of vinegar and alcohol after swimming/diving

Diver's ear—pain after difficulty clearing the ears diving; treat with anti-inflammatories, or, if not improving, antibiotics (Cephalexin is fine); decongestant nasal spray and/or Sudafed to help clear ears.

Cold or flu—rare if not in contact with other virally infected people! Many people never get these common problems while cruising.

Sinusitis—can occur due to allergies; bring antibiotics if prone

Intestinal—diarrheal illnesses may be common due to unfamiliar foods or contaminated water. Constipation may also occur

Bring Imodium for mild symptoms (one every 6 hours)

PeptoBismol for prevention of diarrhea in tropics (2 tablets 3-4 times/day)

Antibiotics for severe symptoms (Cipro plus Imodium once may be curative, if not, twice/day for 3 days. In Thailand, need Zithromax due to resistance)

Constipation—carry some kind of laxative, eat fiber (veggies, fruit, legumes, grains) & drink water.

Major infections and other major medical problems

(note: boiling water for 20 min. sterilizes it if needed)

Most SSB radio nets have a medical emergency section. There are frequently doctors cruising who can give advice.

Pneumonia—have injectable antibiotics available for more serious illness (Ceftriaxone 1 gram injection daily) or oral antibiotics for milder (Zithromax is a convenient once/day oral antibiotic)

Appendicitis—usually can temporarily be managed with injectable antibiotics (Ceftriaxone) until access to medical care available.

Intestinal obstructions—can be life threatening; contact a medical person

Cardiac problems—carry nitroglycerin, other heart medications if appropriate given personal medical history, carry aspirin.

Stroke—recognize the symptoms; contact a medical person

Severe dehydration—consider carrying and know how to use IV fluids

Near drowning—know the treatment of hypothermia, know CPR!

Urinary obstruction (more common in older men)—carry a urinary catheter.

Allergic reactions

Skin rashes are very common; treatment:

Rinse with fresh water after swimming for prevention

Hydrocortisone 1% cream (0.5% for kids) for mild rashes, insect bites

Stronger cortisone cream (Lidex, Temovate) for stubborn rashes

Rashes in “folds” of skin (armpits, groin) or not responding to cortisone, try antifungal cream (Lotrimin 2-3 times/day)

“Boat butt”—boils on the buttocks from sitting in wet seawater for days (life raft problem).

Avoid by wearing quick dry clothes (not cotton!), wipe skin with fresh water, wear dry clothes, use powder to keep dry. If infected (pustules) take antibiotics (Cephalexin)

General allergic reactions

Anti-histamines (Benadryl, Vistaril or Claritin) for mild reactions or hives

Prednisone for extreme allergic reactions (review with medical provider)

Epinephrine injection for life threatening reactions (including insect sting)

Asthma inhaler aboard if anyone has ever had asthma or wheezing

Injuries (minor)

Cuts—stop the bleeding, use antibiotic ointment in tropics especially (Bactroban for reef scrapes, Bacitracin for other)

Sprains—(RICE) Rest, Ice, Compression (ace wrap), Elevation. Anti-inflammatories for pain if needed (e.g., Ibuprofen).

Tendonitis—analyze cause and alter use of affected part; splint area if not resolving in 10 days. Anti-inflammatories for pain.

Bruises—unavoidable, ice if lots of swelling in first 2 days.

Crush injuries (often hands)—ice, elevate, assess as best possible for fractures.

Injuries (major) (Note: make sure you are not at risk for a similar injury!)

Broken bones—have splints aboard (SAM splint) and know how to immobilize or even set bones if in very remote cruising area. Compound fractures with exposed bone need special treatment including antibiotics.

Head injuries—know how to assess severity *

Hypothermia—review treatment, carry hypothermia thermometer if in cold area**

Major lacerations—edges need to be put back together, use stitches, steri-strips or Dermabond (same as Superglue). Repair within 6 hours or leave open. Assess function of injured part.

Watch for infection.

Learn to suture

*Head injuries

Assess skull for bone indentation indicating fracture (expect more serious symptoms)

If any chance of neck injury, place in neck collar or backboard

Clear fluid running from nose or ear suggestive of spinal fluid leak, indicates very severe injury.

Severe nausea or vomiting can be a sign of more severe injury and brain swelling

Assess level of consciousness: can the person carry on a normal conversation? Are they confused? amnesic? irritable? irrational? sleepy? Anything other than normal warrants close watching.

Check the pupils for equal size and constriction with light. Watch this every 1-2 hours & if any change, and/or level of consciousness declines, suggest emergency evacuation.

If the above show none of the more serious signs, the person may have a mild to more severe concussion which can be watched aboard safely. The other more serious signs above suggest brain hemorrhage, skull fracture, and/or increased brain pressure which should be managed professionally if possible.

Concussions are a brain bruise. They are managed as follows:

Watch pupils and level of consciousness for 24 hours every 1-2 hours

Give no aspirin or sedatives during this time (aspirin thins the blood and could exacerbate hemorrhage and sedatives make it harder to assess level of consciousness)

Expect resolution over days to a few weeks with common symptoms including headache, vertigo, confusion, “foggy” headed feeling. These symptoms should gradually improve after the first 48 hours. If not, reassess the severity.

SPECIAL SEAFOOD RELATED AND TROPICAL HAZARDS

Paralytic Shellfish Poisoning—a special Northwest hazard caused by microorganisms filtered by bivalves (clams, mussels, oysters, scallops). Occurs seasonally (late spring, summer). Cooking does not eliminate the risk. Eating contaminated shellfish can be fatal since respiratory muscles can be paralyzed (mouth to mouth resuscitation until medical evacuation with a ventilator could be life-saving). Early symptoms include numbness/tingling around the mouth, spreading to the face/neck. Induce vomiting if suspected case and call for medical help.

Ciguatera—another paralytic toxin obtained from eating affected tropical reef fish (e.g., groupers, barracudas, snappers). Pelagic (open ocean) fish are not affected. Symptoms occur up to 6 hours after eating, starting with numbness around the mouth, spread to limbs, nausea, vomiting, diarrhea, weakness. When in doubt, don't eat reef fish or ask local fishermen.

Stings (jellyfish, rays, poisonous snakes)—Read about local flora/fauna. Meat tenderizer or vinegar may help symptom relief.

Malaria—discuss taking preventive medicine when in endemic areas. Protect from mosquito bites (protective clothing, DEET containing bug repellent, mosquito screens).

Dengue fever—a viral infection transmitted by mosquitoes (reported in French Polynesia, rare cases in Hawaii). It can be fatal but in healthy people just makes them sick as dogs for several weeks. Symptoms include bad headache, high fever, rash and severe joint pains. Any sign of internal hemorrhage warrants medical evacuation.

Cholera, Typhoid fever, Hepatitis A—obtained from contaminated water. Treat with hydration (drink lots of fluids) and bland foods, obtain medical advice if prolonged symptoms. Hepatitis A and typhoid vaccines are available.

ANALYZING YOUR MEDICAL PROBLEM

Unless someone is unconscious, not breathing, or bleeding to death in front of you, you have time to think and analyze. This can be a very important step before talking to someone on the radio about your situation so you have your facts straight. Medical diagnosis is much like detective work and depends on observed data. Here are the questions to ask yourself or your sick crew member about the symptoms:

How did it start?

How long has it gone on?

Have you ever had this before?

What makes it worse, and what makes it better?

Does it change with body position, time of day, eating, moving your bowels?

Have you tried some kind of medicine already and how did it work?

Is there any sign of bleeding anywhere (urine, stool, vomit, bruising under the skin)?

Be prepared with past medical history (surgeries, major illnesses, and current medicines, especially if reporting on someone else in your crew).

Also very helpful are some vital signs: temperature, pulse, blood pressure and general appearance. Be prepared to know how to do these tests and report them on the radio.

MICELLANEOUS

- Carry a list of crew members medical problems, allergies & medications w/ boat documents
- Stock your medical kit appropriately for you and your crew
- Address Living Will and Durable Power of Attorney issues before leaving
- List emergency contacts, crew member medical provider names and numbers
- Review your own medical problems w/ your provider. Arrange an extended visit time with your provider (request this, do not get a usual “follow-up” appointment or they will be rushed) to discuss the “what ifs” of your particular medical problems, your medications, medications you want to get for your first aid kit and how your medications interact with them, fears.
- Update immunizations including tetanus, pneumococcal vaccine if appropriate.
- Review destinations and possible medicines to prevent malaria with a travel clinic
- Consider getting the Hepatitis A vaccine series (2 shots 6 months apart)
- Review other specialized vaccinations required for entry into certain countries.

If possible, everyone aboard should have at least basic first aid training. Someone should have more advanced training if extended cruising or remote places.

COMMERCIAL MEDICAL KITS

The following are some websites where I have found commercial first aid kits. The most complete ones are very expensive but are organized well with separate packs for various problems and a first aid book included.

www.adventuremedicalkits.com

www.marmed.com/kits

www.firstaidpak.com

www.chinookmed.com

References and Resources

CDC

Health Information for International Travel (#CDC 95-8280)

Malaria Hotline (404) 488-4046

Disease Hotline (404) 332-4555

www.cdc.gov/travel is a great website summarizing health recommendations by travel destination

International Association of Medical Assistance to Travelers (IAMAT)

(English speaking doctors of all nationalities)

417 Center St.

Lewiston, NY 14092

(716) 754-4883

www.iamat.org

Ocean Voyages (Medical training programs onboard on the West Coast)
(415) 332-4681

Medical Advisory Services (24 hr. consultation and marine medical training)
Box 193
Pennsylvania Avenue Extension
Owings, MD 20736
(410) 257-9505
www.masta.org

Maritime Health Services (Medical training course “SALTS-Save a Life at Sea”)
2701 First Avenue, Suite 105
Seattle, WA 98121
(206) 781-8770
www.globalMD.net
shipmd@globalmd.net

Travel Medicine Clinics at University of Washington or Virginia Mason

AMA Guide to Your Family’s Symptoms, 1992
Complete Guide to Symptoms, Illnesses and Surgery; H Winter Griffith, MD, 1995
First Aid Handbook; National Safety Council
The Voyager’s Handbook; Beth A. Leonard, 1998
The Cruising Woman’s Advisor; Diana Jessie, 1997
Advanced First Aid Afloat (4th Edition); Peter F. Eastman, MD 1995
The Healthy Cruisers Handbook; Janette Loomis, RN, BS and James H. Bryan, MD, PhD, 2002
On Board Medical Handbook; Paul G Gill, Jr, MD
Dangerous Marine Mammals ; Bruce Halstead, MD

<http://hgic.clemson.edu>

WHAT IS CIGUATERA?

Ciguatera is a unique type of food poisoning caused by the consumption of marine species that harbor natural toxins originating in certain tropical waters. These species & locations are linked by a food chain, which generates & accumulates a heat-resistant, acid-stable collection of toxic substances known as ciguatoxin. The initial culprits are certain species of microplankton or dinoflagellates that form the toxins that higher-order predators & man consume. These natural toxins can concentrate as they move up the food chain, but their adverse effects appear limited to man.

Ciguatera illness generally occurs in the tropical regions of the world. Occurrence in the United States has remained somewhat constant during the past two decades, but expanding distribution of tropical fishes & increasing vacation travel could pose additional threats.

WHERE DOES CIGUATERA OCCUR?

Ciguatera occurs in marine waters near tropical reefs. The common boundaries referenced are for tropical reef waters between latitudes 35° south & north. Within these areas the occurrence is unpredictable & patchy, both in distribution & time. The majority of reefs are not ciguatoxic & outbreaks are usually localized. Thus, knowledge of the ciguatoxic areas or reefs is usually based on the local experience of fishermen and consumers.

WHICH SEAFOODS CAN BE CIGUATOXIC?

Potentially any tropical marine fish participating in a food chain with ciguatoxin could become ciguatoxic, but documented illnesses & some recent analyses indicate certain fish are more suspect. In the Caribbean region, the fish with the worst reputation are amberjacks & other jacks, moray eels, & barracuda. Fish with questionable reputations are hogfish, scorpion fishes, certain tiggerfish, and certain snapper and groupers.

Unfortunately, the usefulness of a list of ciguatoxic fish is questionable because of the diversity of fish species & the variety of names used. For example, local fisherman may refer to a variety of fish as "jacks" or "snappers" when they are actually a mackerel, wrasse or other species. Certain species of snapper and grouper are not a risk for ciguatera, yet their popular reputation suffers because they are misidentified.

HOW IS CIGUATERA IDENTIFIED?

There is no simple, reliable test kit available to the public at this time. Thus, determinations for ciguatera usually are limited to diagnosis based on symptoms. Symptoms following ingestion of a ciguatoxic fish can begin within less than six hours. This rapid onset is a primary reason for close food association and reporting of this seafoodborne illness.

Initial symptoms are gastrointestinal, including nausea, cramping & vomiting. This is followed by neurological discomforts: headaches, flushing, muscular aching & weakness, tingling & numbing sensation of the lips, tongue & mouth, dizziness, myalgia, & arthralgia. More severe cases have experienced a cold-to-hot sensory reversal such that cold objects feel hot & hot objects feel cold. Victims usually recover within a few days, but severe neurological disorders may persist for months & sometimes for years. Symptoms may reoccur following alcohol consumption or again eating ciguatoxic fish.

The lengthy duration of neurological symptoms is unique, but many of these symptoms are similar for other food poisonings. In the event of food poisoning, consumers should note other foods eaten and try to retain any portions of a meal to better judge the cause. Ciguatera can be blamed as the cause of other forms of food poisoning.

WHAT IF YOU SUSPECT CIGUATERA?

Consult a physician, explaining your concern, types & amount of food eaten, & when the symptoms began. Rapid diagnosis by a physician and follow-up treatment is important.

Try to obtain portions of the meal, particularly the fish, to help determine the cause. These portions should be tightly packaged and frozen for any subsequent analysis. Recalling the various foods eaten within 24 hours could indicate other possible causes.

Try to verify the species and size of the suspect fish and how it was cooked and handled prior to cooking. These concerns are essential to confirming ciguatera versus other food poisonings. The heat-stable ciguatoxin is not destroyed by cooking and frozen storage.

Knowledge of prior quality or partial mishandling could implicate a different form of food poisoning caused by partial spoilage, i.e., scombroid or histamine fish poisoning.

Consult with other professionals in public health, food safety regulation or academic research, who can better advise your physician. Many physicians are not familiar with ciguatera.

HOW TO AVOID CIGUATERA

Ciguatoxic fish cannot be detected by appearance, taste or smell. Raw and cooked whole fish, fillets or parts have no signs of spoilage, discoloration or deterioration.

Thus, prior knowledge of potential ciguatoxic areas and fish remains the best source of caution in avoiding this unique form of food poisoning. Consumers purchasing tropical marine fish from reef waters should frequent reputable dealers and restaurants. Vacationers and experienced recreational fishermen should exercise caution in areas of concern for particular tropical species. Consumers should not eat foods prepared from the heads or internal portions of tropical reef fish species.

SOURCE:

National Food Safety Database. *Ciguatera*. Prepared by Steven Otwell, December 1989.

CIGUATERA

NO LONGER A MYSTERY ILLNESS

For a few years now, ciguatera poisoning has been commonly used in startling well advertised announcements by "expert" groups to attack the French nuclear tests although the problem existed as early as 4,000 years BC when the populating of the Pacific islands began. Moreover these "expert" groups are never interested in the curing of the effects or in the research into the process of ciguatera poisoning. Recently "experts" from a South Pacific island, ignoring, for political purposes, the reef damage caused by infrastructure activities in their island, even asserted that nuclear tests were responsible for the local increase of ciguatera although their island is situated more than four thousand km away. However, all these sensational statements will not affect the results of scientific & medical research on ciguatera poisoning.

History

Ciguatera poisoning was first documented in the early sixteenth century, but has probably been a part of life in the tropics for as long as men have fished the coral reefs. Fish which are freshly caught, which are to all appearances normal and healthy, and which belong to a species known to be completely harmless suddenly become poisonous. Around two thousand cases are reported every year, a handful in Japan, Australia and the USA, the majority in the islands of the South Pacific. The actual incidence of poisoning is probably much higher.

Because ciguatera is associated with coral reef ecosystems, most of the research into its cause and cure is also carried out in the tropical and sub-tropical regions of the world. In French Polynesia, the Medical Oceanography Unit of the Institut Territorial de Recherches Medicales Louis MaFarde conducts numerous collaborative projects with American and Japanese research workers to identify the causes of outbreaks and to develop a simple and reliable test for the presence of the ciguatera toxins in fishing hauls.

The poison begins at the base of the feed-chain, being produced by a uni-cellular algae first discovered in 1976 by Dr Raymond Bagnis (Institut Louis Malarde at Papeete) and Dr T. Yasumoto (Tohoku University at Sendai Japan) in the Gambier Islands and consequently named Gamblerdiscus toxicus. The algae is then consumed by fish, which are apparently immune to the toxin. It is believed that most reef-dwelling fish carry at least trace quantities in their system.

In the human metabolism, however, the toxin opens voltage-dependent sodium channels in the body's cell membranes, which devastate the nervous and muscular systems. Humans eating the fish can deal with minimal concentrations of the toxin, but above a certain level, its effect varies wildly from inducing mild nausea to, in one or two very rare instances, cardiac arrest and death.

Toxin identification

The poison itself, first isolated by workers at the University of Hawaii, is a polyether compound appropriately named ciguatoxin. In April 1989, its molecular structure whose weight is 1,111.584 and formula $C_{60}H_{86}O_{19}$, was jointly elucidated by Anne-Marie Legrand (Institut Louis Malarde), M. Murata, Y. Ishibashi and T. Yasumoto (Faculty of Agriculture, Tohoku University). The results of the study were published in the Journal of American Chemical Society on June 27, 1989. The discovery of the chemical bonds (13 ether bonds, 5 double bonds and a primary alcohol group) will now allow the elaboration of a detection method of the poisoned fish. Toxicology studies indicate that as little as 0.1 microgram (= a tenth of a millionth of gram) can cause serious illness when consumed at a single meal by an adult human.

Other toxins are also implicated. Workers at the Institut Louis Malarde noted clinical differences in some instances of poisoning, and in collaboration with Japanese research workers, identified two more toxic compounds:

- scaritoxin, very likely a congener of ciguatoxin, is dominant in parrotfish (Scarids) for which it is named ;it has occasionally also been detected in snapper, and maitotoxin, first isolated from the maito (a surgeonfish), is a water soluble compound which so far shows no chemical resemblance to the other two toxins, and occurs only in the digestive viscera of herbivorous fish.

Trace elements of ether toxins have sometimes been identified, but whether or not these are connected with ciguatera poisoning has yet to be confirmed.

Predictability problems

A variety of reasons have been put forward for the erratic occurrence of ciguatera poisoning, but Dr Bagnis demonstrated that an outbreak, which may last for up to thirty years, is always preceded by a disruption of the reef ecosystem. The nuclear tests have sometimes been blamed. In fact all disturbances of the coral reef ecosystem. natural phenomena such as monsoons and seismic activity, or human activities such as construction of wharves and jetties, mining operations, are responsible for the algal population explosion. Dead coral formations provide an ideal environment for the growth of the Gambierdiscus toxicus, and an algae population explosion takes place, resulting in turn in excessively high levels of ciguatera toxins in fish. It must be pointed out that no instance of transfer of ciguatoxicity from one island to another has been observed.

This unpredictability has posed endless problems for the research teams. Not all reef disturbances are necessarily followed by increased fish toxicity. and even when they are, not all species of fish become ciguatoxic. Of those that do, only a few specimens contain toxin levels

harmful to humans, and different parts of a single fish, such as the viscera, are likely to contain higher concentrations of the toxin. Concentrations that induce illness in some people have no effect on others.

Despite the advances being made, many aspects of ciguatera and the factors which trigger an outbreak are still unexplained. Even the mode of production of the toxin remains a mystery, as all attempts to induce the *Gambierdiscus toxicus* algae to produce the ciguatoxin consistently in culture have been unsuccessful, and it has thus been difficult to obtain the toxin in quantities sufficient to permit analysis and research. For the discovery of the structure, the French/Japanese team had to chemically treat 150 kg of livers and viscera of fish collected from high ciguateric risk zones to isolate 350 micrograms of the toxin.

However, studies carried out in French Polynesia and New Caledonia by the French and Japanese research teams have now explained the growth of the algae in its natural state, and the first steps towards developing a positive cure have been made by American workers in the Marshall Islands. They recently discovered that an intravenous infusion of mannitol (1) tends to reverse the symptoms of ciguatera poisoning. The treatment is still in the experimental stages, but the future for ciguatera victims is certainly looking more hopeful.

(1) a white sweetish crystalline, carbohydrate alcohol, HOCH₂ (CHOH)-CH₂₀H.

Dengue Fever

Description

Dengue fever & dengue hemorrhagic fever (DHF) are viral diseases transmitted by *Aedes* mosquitoes, usually *Ae. aegypti*. The four dengue viruses are immunologically related, but do not provide cross-protective immunity against each other.

Occurrence

... The case-fatality ratio for DHF averages about 5% worldwide, but can be kept below 1% with proper clinical management. Epidemics caused by all four virus serotypes have become progressively more frequent & larger in the past 25 years. As of 2004, dengue fever is endemic in most tropical countries of the South Pacific, Asia, the Caribbean, the Americas, & Africa. Additionally, most tropical urban centers in these regions have multiple dengue virus serotypes co-circulating (hyperendemicity), which increases dengue transmission & the risk of DHF. ... The incidence of the severe disease, DHF, has increased dramatically in Southeast Asia, the South Pacific, & the American tropics in the past 25 years, with major epidemics occurring in many countries every 3-5 years. ...

Clinical Presentation

Dengue fever is characterized by sudden onset after an incubation period of 3-14 days (most commonly 4-7 days), high fevers, severe frontal headache, & joint & muscle pain. Many patients have nausea, vomiting, & rash. The rash appears 3-5 days after onset of fever & can spread from the torso to the arms, legs, & face. The disease is usually self-limited, although convalescence can be prolonged. Many cases of nonspecific viral syndrome or even subclinical infection occur, but dengue can also present as a severe, sometimes fatal disease

characterized by hemorrhagic manifestations & hypotension (DHF/ dengue shock syndrome).

Prevention

No vaccine is available. Travelers should be advised that they can reduce their risk of acquiring dengue by remaining in well-screened or air-conditioned areas when possible, wearing clothing that adequately covers the arms and legs, and applying insect repellent to both skin and clothing. The most effective repellents are those containing DEET.

Treatment

Acetaminophen products are recommended for managing fever. Acetylsalicylic acid (aspirin) and nonsteroidal anti-inflammatory agents (such as ibuprofen) should be avoided because of their anticoagulant properties. Patients should be encouraged to rest and take abundant fluids. In severe cases, the prompt infusion of intravenous fluids is necessary to maintain adequate blood pressure. Because shock may develop suddenly, vital signs must be monitored frequently. Hypotension is a more frequent complication of DHF than severe hemorrhage.

Encephalitis, Japanese

Description

Japanese encephalitis (JE), a mosquito-borne flaviviral infection, is the leading cause of childhood encephalitis in Asia, where up to 50,000 cases may be reported annually. Most infections are asymptomatic, but when encephalitis develops, the case-fatality rate can be as high as 30%. Neuropsychiatric sequelae are reported in 50% of survivors. Although children are at greatest risk of infection in endemic areas, outdoor occupation, recreational exposure, & male gender are also risk factors for infection. Although most adults living in endemic areas have acquired natural immunity & older persons rarely develop illness, a high case-fatality rate has also been reported in the elderly.

JE virus is transmitted chiefly by mosquitoes in the *Culex vishnui* complex; the specific species depends on the geographic area. It has a wide host range that includes domestic mammals, birds, & humans. Swine & certain species of wading birds are the amplifying hosts in an enzootic transmission cycle.

Occurrence

JE transmission principally occurs in rural agricultural locations where flooding irrigation is practiced. Elsewhere, seasonal patterns of disease may be extended or vary with the rainy season & irrigation practices. Risk of JE varies by season & geographic area.

Risk for Travelers

The risk to short-term travelers & those who confine their travel to urban centers is very low. Expatriates & travelers living for prolonged periods in rural areas where JE is endemic or epidemic are at greater risk. Travelers with extensive unprotected outdoor, evening, & nighttime

exposure in rural areas, such as might be experienced while bicycling, camping, or engaging in certain occupational activities, may be at high risk even if their trip is brief.

Table 4-1. Risk of Japanese encephalitis, for south pacific

Country	Affected Areas	Transmission Season	Comments
Australia	Islands of Torres Strait	Probably year-round transmission risk	Localized outbreak in Torres Strait in 1995 and sporadic cases in 1998 in Torres Strait and one case on mainland Australia at Cape York Peninsula
Papua New Guinea	Normanby Islands and Western Province	Probably year-round risk	Localized sporadic cases
Pacific Islands	Two epidemics reported in Guam & Saipan since 1947	Uncertain; possibly September to January	Enzootic cycle might not be sustainable; epidemics might follow introductions of virus.

Prevention - Vaccine

An inactivated JE vaccine produced from infected mouse brains has been licensed for use in the U.S. civilian population since 1992. This vaccine is manufactured by Biken (Osaka, Japan) & distributed in the United States by Aventis Pasteur. Other JE vaccines are made by other Asian companies but not licensed for use in the United States.

Vaccination should be considered by persons who plan to live in areas where JE is endemic or epidemic & by travelers whose activities include trips into rural farming areas.

Personal Protection Measures

Avoid mosquito bites to reduce the risk & use personal insect repellents containing DEET & protective clothing.

Filariasis, Lymphatic

Description

Lymphatic filariasis is caused primarily by adult worms (filariae) that live in the lymphatic vessels. The female worms release microfilariae that circulate in the peripheral blood and are ingested by mosquitoes; thus, infected mosquitoes transmit the infection from person to person. The two major species of filariae that cause lymphatic disease in humans are *Wuchereria bancrofti* and *Brugia malayi*.

Occurrence

Lymphatic filariasis affects an estimated 120 million persons in tropical areas of the world, including sub-Saharan Africa, Egypt, southern Asia, the western Pacific islands, the northeastern coast of Brazil, Guyana, and the Caribbean island of Hispaniola.

Risk for Travelers

Short-term travelers to endemic areas are at low risk for this infection. Travelers who visit endemic areas for extended periods of time and who are intensively exposed to infected

mosquitoes can become infected. Most infections seen in the United States are in immigrants from endemic countries.

Clinical Presentation

Most infections are asymptomatic, but the living adult worm causes progressive lymphatic vessel dilation and dysfunction. Lymphatic dysfunction may lead to lymphedema of the leg, scrotum, penis, arm, or breast, which can increase in severity as a result of recurrent secondary bacterial infections. Tropical pulmonary eosinophilia is a potentially serious progressive lung disease with nocturnal cough, wheezing, and fever, resulting from immune hyperresponsiveness to microfilariae in the pulmonary capillaries.

Prevention

No vaccine is available, nor has the effectiveness of chemoprophylaxis been well documented. Protective measures include avoidance of mosquito bites through the use of personal protection measures (see Protection against Mosquitoes and Other Arthropods).

Treatment

The drug of choice for treatment of travelers with *W. bancrofti* or *B. malayi* infections is diethylcarbamazine (DEC). DEC, which is available to U.S.-licensed physicians for this purpose, can be obtained from the CDC Parasitic Diseases Drug Service at 404-639-3670. (See Immunobiologics Distributed by the Centers for Disease Control and Prevention website which is available at: <http://www.cdc.gov/ncidod/srp/drugs/drug-service.html>.) DEC kills circulating microfilariae and is partially effective against the adult worms and tropical pulmonary eosinophilia. Many patients with lymphedema are no longer infected with the filarial parasite and do not benefit from antifilarial drug treatment. For chronic manifestations of lymphatic filariasis, such as lymphedema and hydrocele, specific lymphedema treatment (including hygiene, skin care, physical therapy, and in some cases, antibiotics) and surgical repair, respectively, are recommended. To ensure correct diagnosis and treatment, travelers should be advised to consult an infectious disease or tropical medicine specialist.

Malaria

Description

Malaria in humans is caused by one of four protozoan species of the genus *Plasmodium*: *P. falciparum*, *P. vivax*, *P. ovale*, or *P. malariae*. All species are transmitted by the bite of an infected female *Anopheles* mosquito. Occasionally, transmission occurs by blood transfusion, organ transplantation, needle-sharing, or congenitally from mother to fetus. Although malaria can be a fatal disease, illness and death from malaria are largely preventable.

Clinical Presentation

Malaria is characterized by fever and influenza-like symptoms, including chills, headache, myalgias, & malaise; these symptoms can occur at intervals. Malaria may be associated with anemia & jaundice, & *P. falciparum* infections can cause seizures, mental

confusion, kidney failure, coma, & death. Malaria symptoms can develop as early as 7 days after initial exposure in a malaria-endemic area & as late as several months after departure from a malarious area, after chemoprophylaxis has been terminated.

Prevention

Personal Protection Measures

Because of the nocturnal feeding habits of *Anopheles* mosquitoes, malaria transmission occurs primarily between dusk & dawn. Travelers should take protective measures to reduce contact with mosquitoes, especially during these hours.

Chemoprophylaxis

Chemoprophylaxis is the strategy that uses medications before, during, & after the exposure period to prevent the disease caused by malaria parasites. The aim of prophylaxis is to prevent or suppress symptoms caused by blood-stage parasites.

Use the below medications for India, Africa, Papua New Guinea, Vanuatu and Solomon Islands:

Drug	Usage	Adult Dose	Pediatric Dose	Comments
Atovaquone / proguanil (Malarone)	Prophylaxis in areas with chloroquine-resistant or mefloquine-resistant <i>P. falciparum</i> .	Adult tablets contain 250 mg atovaquone and 100 mg proguanil hydrochloride. 1 adult tablet orally, daily	Pediatric tablets contain 62.5 mg atovaquone and 25 mg proguanil hydrochloride. 11-20 kg: 1 tablet 21-30 kg: 2 tablets 31-40 kg: 3 tablets 41 kg or more: 1 adult tablet daily	Begin 1-2 days before travel to malarious areas. Take daily at the same time each day while in the malarious area and for 7 days after leaving such areas. Contraindicated in persons with severe renal impairment (creatinine clearance <30 mL/min). Atovaquone / proguanil should be taken with food or a milky drink. Not recommended for prophylaxis for children <11 kg, pregnant women, and women breastfeeding infants weighing <11 kg.
Doxycycline (Many brand names and generic)	Prophylaxis in areas with chloroquine-resistant or mefloquine-resistant <i>P. falciparum</i> .	100 mg orally, daily	8 years of age: 2 mg/kg up to adult dose of 100 mg/day.	Begin 1-2 days before travel to malarious areas. Take daily at the same time each day while in the malarious area and for 4 weeks after leaving such areas. Contraindicated in children <8 years of age and pregnant women.

Atovaquone/proguanil (Malarone). Atovaquone/proguanil is a fixed combination of the two drugs, atovaquone and proguanil. Atovaquone/proguanil prophylaxis should begin 1-2 days before travel to malarious areas and should be taken daily, at the same time each day, while in the malarious areas and daily for 7 days after leaving the area.

The most common adverse effects reported in persons using atovaquone/proguanil for prophylaxis or treatments are abdominal pain, nausea, vomiting, and headache. Atovaquone/proguanil should not be used for prophylaxis in children weighing <11 kg, pregnant women, women breastfeeding infants weighing <11 kg, or patients with severe renal impairment (creatinine clearance <30 mL/min).

Doxycycline (many brand names and generic). Doxycycline prophylaxis should begin 1-2 days before travel to malarious areas. It should be continued once a day, at the same time each day, during travel in malarious areas and daily for 4 weeks after the traveler leaves such areas. Insufficient data exist on the antimalarial prophylactic efficacy of related compounds such as minocycline (commonly prescribed for the treatment of acne). Persons on a long-term regimen of minocycline who are in need of malaria prophylaxis should stop taking minocycline 1-2 days before travel and start doxycycline instead. The minocycline can be restarted after the full course of doxycycline is completed.

Doxycycline can cause photosensitivity, usually manifested as an exaggerated sunburn reaction. The risk of such a reaction can be minimized by avoiding prolonged, direct exposure to the sun and by using sunscreens that absorb long-wave UVA radiation. In addition, doxycycline use is associated with an increased frequency of *Candida* vaginitis. Gastrointestinal side effects (nausea or vomiting) may be minimized by taking the drug with a meal. To reduce the risk of esophagitis, travelers should be advised not to take doxycycline before going to bed. Doxycycline is contraindicated in persons with an allergy to tetracyclines, during pregnancy, and in infants and children <8 years of age. Vaccination with the oral typhoid vaccine Ty21a should be delayed for >24 hours after taking a dose of doxycycline.

For info for topics below- download the whole article from the website.

Chemoprophylaxis for Infants, Children, and Adolescents, Chemoprophylaxis during Pregnancy, Antimalarial Drugs during Breastfeeding, Primaquine, Medications Acquired Overseas, Changing Medications during Chemoprophylaxis as a Result of Side Effects, Treatment/Self-Treatment ...

Malaria risk in Mexico

Risk in rural areas, including resorts in rural areas, of the following states: Campeche, Chiapas, Guerrero, Michoacán, Nayarit, Oaxaca, Quintana Roo, Sinaloa, and Tabasco. In addition, risk exists in Jalisco State (in its mountainous northern area only). Risk also exists in an area between 24° north and 28° north latitude and 106° west and 110° west longitude which lies in parts of the states of Sonora, Chihuahua, and Durango. No malaria risk along the United States-Mexico border. No malaria risk in the major resorts (that is, resorts located in urban areas) along the Pacific and Gulf coasts, although tourists should use insect repellent and other anti-mosquito measures.

Chloroquine phosphate (Aralen and generic)	Prophylaxis only in areas with chloroquine-sensitive <i>P. falciparum</i> .	300 mg base (500 mg salt) orally, once/week	5 mg/kg base (8.3 mg/kg salt) orally, once/week, up to maximum adult dose of 300 mg base.	Begin 1-2 weeks before travel to malarious areas. Take weekly on the same day of the week while in the malarious area and for 4 weeks after leaving such areas. May exacerbate psoriasis.
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Malaria notes from other cruisers

MALARIA

SYMPTOMS:

- Severe chills followed by high fever for a few hours, then sweats and fatigue
- In some strains: mental confusion, blackouts, and other symptoms—if in a Malarial area suspect *any* symptoms to be a result of malaria and act accordingly

THE CARRIER & THE DISEASE

- Female anopheles mosquito
- Can fly only about 300 yards at a time
- Primarily active between 4 and 8 PM
- Disease is carried in the mosquito's saliva
- There are four strains of the disease ...each cause slightly different symptoms and are sometimes resistant to different medicines

PREVENTATIVE MEASURES - "THE RULES"

1. Begin taking the medication as prescribed by your doctor.
2. Return to your boat by 4PM.
3. Try to anchor 300 yards from shore or as far out as possible
4. Do not sit out in an open cockpit between four and eight PM
5. Make sure all ports, hatches and dorades are 100% screened
6. Bum mosquito coils in your cabin
7. If you do go ashore after 4PM: wear long pants, socks and long-sleeved shirts (or bug suits), use insect repellent, such as DEET on exposed skin
8. Extra precaution: have blood screened just before you sail out of a malaria country

OUR EXPERIENCE

- We only saw one mosquito while in Vanuatu and the Solomons, less than we see in Canada.
- The rules aren't as bad as they sound
- Neither one of us contracted the disease or were bitten (as far as we could tell)
- Steve got positive result from blood screen but proved false - beware

RECOMMENDATION

- If you can screen your boat and are willing to follow the rules, go
- Otherwise, find a route that avoids malaria country
- Local docs are not all up-to-speed on the current treatment for tropical diseases such as Malaria, dengue, and tropical staph infections. Contact the World Health Organization for the latest word on the areas you wish to visit.

Insect Repellents

Excerpts from The Medical Letter Vol 31 (Issue 792) May 19, 1989.

SKIN REPELLENTS: Currently available insect repellents for application to the skin are usually effective for one to several hours, but can be removed by absorption, evaporation, rain, sweating, swimming or wiping, & must be reapplied to maintain effectiveness. The most effective topical insect repellent known is N, N-diethyl m-toluamide, commonly called "DEET". DEET repels a variety of mosquitoes, chiggers, ticks, fleas & biting flies; no topical repellent is effective against stinging insects, such as bees and wasps. A repellent commonly recommended is *Cutters* (Miles Inc.) which contains 21.85% DEET.

Sawyer controlled release formula is also available. Although it contains 20% DEET, it can be used for both adults & children because the controlled release formulation allows much less DEET absorption than most insect repellents. It provides protection for up to 20 hours.

Other repellents effective against both mosquitoes & ticks, but less so than DEET, include 2-ethyl-1,3-hexanediol (Rutgers 612) & dimethyl phthalate. Citronella-based repellents

(Natrapel and others) may provide very short -term protection against mosquitoes, but are probably not effective against ticks.

A CLOTHING REPELLENT: Permethrin, actually a pesticide rather than a repellent, is used for treatment of lice & is also marketed as a clothing spray for protection against both mosquitoes & ticks. The aerosol is available in many areas of the USA & is sold mostly in lawn & garden stores or sports stores. It is non-staining, nearly odorless & resistant to degradation by light, heat or immersion in water. Also available from Coulston is *Duranon Tick Repellent*. This product contains permethrin, and repels ticks, chiggers and mosquitoes. *Duranon* provides up to 2 weeks of protection.

CLINICAL TRIALS: A field trial conducted with US Air Force volunteers in an area of Alaska with a large population of mosquitoes, tested both the new 35% long-acting cream formulation of DEET applied to both exposed skin & permethrin treatment of clothing. The DEET formulation provided greater than 99% protection for more than 8 hours (a mean of 4 mosquito bites per person per hour), while a permethrin-treated uniform (0.125 mg/ Cm²) alone provided 93% protection (78 mosquito bites/hour), compared to 1,188 per hour with no protection; using both DEET on skin & permethrin on clothing provided 99.9% protection.

Another trial conducted in Pakistan 8 hours after application of the same long-acting DEET formulation found that the combination of DEET & permethrin-treated clothing provided 100% protection from mosquito bites; long-acting DEET repellent alone gave 89% protection, compared to 57% with treated clothing alone & 34.4 bites with no repellent.

An earlier field trial in Australia found two long-acting repellents (3M Insect Repellent lotion, 33% DEET; Biotek Long-Acting Insect Repellent, 42% DEET) no more effective (56% & 61% protection over 14 hours) than the standard military formulation of 75% DEET treated (54% protection) in preventing bites. Anyone of the three used together with permethrin treated clothing provided the most protection (74%, 82% and 80%)

SKIN SO SOFT: Avon, Skin So Soft, has come into wide use as a "folk medicine" mosquito repellent. According to Medical Letter consultants, it may protect against mosquitoes for as little as 30 minutes, & the safety of repeated applications of the concentrated bath oil to the skin is unknown.

CONCLUSION: DEET -containing insect repellents applied to the skin or clothing can prevent mosquito & tick bites, but DEET may : cause allergic and toxic effects in children and adults, especially when used on the skin repeatedly in high concentrations.

Wearing protective clothing treated with permethrin in addition to using DEET on exposed skin provides the greatest degree of protection against mosquito and tick bites.

Oral Rehydration Therapy

Fluid and electrolytes are lost in cases of TD, and replenishment is important, especially in young children or adults with chronic medical illness. In adult travelers who are otherwise healthy, severe dehydration resulting from TD is unusual unless vomiting is present. Nonetheless, replacement of fluid losses remains an important adjunct to other therapy. Travelers should remember to use only beverages that are sealed or carbonated. For more severe fluid loss, replacement is best accomplished with oral rehydration solutions (ORS), such as World Health Organization ORS solutions, which are widely available at stores and pharmacies in most developing countries. (See Table 4-19 for details.) ORS is prepared by adding one packet to the appropriate volume of boiled or treated water. Once prepared, solutions should be consumed or discarded within 12 hours (24 hours if refrigerated).

Table 4-19. Composition of WHO Oral Rehydration Solution (ORS) for diarrheal illness

Ingredient	Amount	Measurement
Sodium chloride	3.5 g/L	½ tsp

Potassium chloride	1.5 g/L	1¼ tsp
Glucose	20.0 g/L	2 tbsp
Trisodium citrate (or sodium bicarbonate)	2.9 g/L (or 2.5 g/L)	½ tsp
Water	1,000g	1 liter

Treatment of Protozoan Etiologies

The most common parasitic cause of TD (Traveler's Diarrhea) is *Giardia intestinalis*, and treatment options include metronidazole, tinidazole, and nitazoxanide. Although cryptosporidiosis is usually a self-limited illness in immunocompetent persons, nitazoxanide can be considered as a treatment option. Cyclosporiasis is treated with TMP-SMX. Treatment of amebiasis is with metronidazole or tinidazole, followed by treatment with a luminal agent such as iodoquinol or paromomycin.

Treatment for Children

Children who accompany their parents on trips to high-risk destinations may be expected to have TD as well. There is no reason to withhold antibiotics from children who contract TD. In older children and teenagers, treatment recommendations for TD follow those for adults, with possible adjustments in dose of medication. Macrolides such as azithromycin are considered first-line antibiotic therapy in children, although some experts are using short-course fluoroquinolone therapy with caution for travelers <18 years of age. Rifaximin is approved for use starting at age 12.

Infants and younger children are at higher risk for developing dehydration from TD, which is best prevented by the early use of ORS solutions. Breastfed infants should continue to nurse on demand, and bottle-fed infants should be offered full strength lactose-free or -reduced formula. Older infants and children should continue their regular diets during the illness.

Traveler's Diarrhea

One of the most common concerns of international travelers is how to prevent "traveler's diarrhea" & how to manage the illness if they are stricken with this problem in a foreign country. TD usually refers to an acute illness with sudden onset of watery diarrhea, cramps, nausea & general malaise. The disease occurs when travelers visit areas of the world where sanitation is a problem & is usually contracted through ingestion of contaminated food or water.

The watery diarrhea & other symptoms commonly associated with TD can be uncomfortable, but the disease will usually resolve without specific treatment in 4-6 days. However, for travelers with a busy itinerary this may be too long a time to be confined to a hotel room. It also makes traveling by public transportation inconvenient. For most patients, symptomatic treatment of TD is appropriate, & self-treatment with an antibiotic may be appropriate if reliable medical help is not readily available. Our clinic does not in general endorse the use of prophylactic antibiotics for the prevention of diarrhea.

CAUTION: Any illness that is characterized by high fever (greater than 102 degrees), severe abdominal pain, or the passage of grossly bloody stools is serious, and medical help should be sought as soon as possible.

PREVENTION: Select safe food & water while traveling (foods thoroughly cooked, no salads or raw seafood. Avoid milk, ice cream, yogurt and unpasteurized dairy products. Drink bottled carbonated beverages or beverages such as tea & coffee that have been prepared with boiling water; avoid ice cubes in cold drinks & use boiled or chemically purified water when in doubt about tap water. Use safe water to brush teeth and to take medication.

Bismuth subsalicylate (PEPTO-BISMOL)

- 30-60 ml (1-2 oz.) of Pepto Bismol liquid 4 times a day has been useful in the prevention of diarrhea. However, this may be inconvenient as the higher dose is equal to a bottle for each day of a journey. 2 Pepto Bismol tablets 3-4 times a day have been useful in the prevention of diarrhea. ** Bismuth may cause stools &/or tongue to turn black, but it will not harm you.

TREATMENT OF SYMPTOMS: --Dehydration due to loss of body fluids from diarrhea can accentuate the general feeling misery. Travelers having 5 or more watery bowel movements a day need to pay special attention to oral rehydration with safe liquids the W.H.O. Oral Rehydration Formula, Gastrolyte, Pedialyte, E.R.G., canned juices, Gatorade, soups, etc ..

-- Relief of cramps & frequency of bowel movements using LIQUID PEPTO-BISMOL: take 4 T orally every 30 min. until relieved or until an 8-ounce bottle is finished. Do not take more than this in 24 hours. Relief is generally obtained within one day. The Pepto Bismol regimen is not recommended for children, people allergic to salicylates, or people on aspirin therapy. In addition, eating a bland diet may provide some relief. Foods such as steamed rice, bananas, clear liquids & soups may help. It is best to avoid fried or fatty foods when diarrhea is present as these foods may make diarrhea worse.

--Relief of cramps & frequency of bowel movements using drugs: Use of antiperistaltic agents (drugs that slow the normal contractions of the gastrointestinal tract) are contraindicated in gastrointestinal disturbances like bacterial dysentery & amoebiasis: they may make the illness more severe. However, there is no evidence that these medications are harmful when used to relieve the symptoms of uncomplicated traveler's diarrhea. Thus, antiperistaltic agents, such as Imodium, may be used by a traveler stricken with watery diarrhea and cramps if he or she does not have a high fever (greater than 102) and if the bowel movements are not grossly bloody.

CAUTION: If using an antiperistaltic drug, one still needs to pay attention to increasing oral rehydration during a TD illness. The body is still losing fluids from the tissues into the intestines, even if these fluids are not being passed as frequently into the toilet because the antiperistaltic drug has been taken.

ANTIBIOTIC TREATMENT OF TD: Several antibiotic regimens appear to be useful in the treatment of TD. Travelers are advised to try symptomatic treatment of diarrhea as discussed above, & to consider antibiotics if they feel they are not getting significant relief using symptomatic treatment alone, or if bloody diarrhea or a high fever is present and medical help unavailable.

- + Levofloxacin 250 mg tablet: 2 tablets on day one, then 1 per day for two more days if diarrhea persists.

- +Azithromycin 250 mg: 2 tablets a day for 3 days for infectious diarrhea.

- +Ciprofloxacin (Cipro) 500 mg tablet: one tablet by mouth twice a day for 3-5 days.

Patients who need special counseling are women of child-bearing age (as some medications cannot be taken during pregnancy), children, patients with a history of allergies to drugs & patients with underlying chronic medical conditions especially patients with gastrointestinal diagnosis.

Treatment of Drinking Water

Boiling

Boiling is by far the most reliable method to make water of uncertain purity safe for drinking. Water should be brought to a vigorous rolling boil for 1 minute & allowed to cool to room temp; ice should not be added. This procedure will kill bacterial & parasitic causes of diarrhea at all altitudes & viruses at low altitudes. To kill viruses at altitudes >2,000 m (6,562 ft), water should be boiled for 3 minutes or chemical disinfection should be used after the water has boiled for 1 minute. Adding a pinch of salt to each quart or pouring the water several times from one clean container to another will improve the taste.

Chemical Disinfection

Chemical disinfection with iodine is an alternative method of water treatment when it is not feasible to boil water. However, this method cannot be relied on to kill *Cryptosporidium*. Two well-tested methods for disinfection with iodine are the use of tincture of iodine & tetraglycine hydroperiodide tablets (e.g., Globaline, Potable-Aqua, or Coghlan's). These tablets are available from pharmacies & sporting goods stores. The manufacturer's instructions should be followed. If water is cloudy, the number of tablets used should be doubled; if water is extremely cold (<5°C; <41°F), an attempt should be made to warm the water, and the recommended contact time should be increased to achieve reliable disinfection. Cloudy water should be strained through a clean cloth into a container to remove any sediment or floating matter, & then the water should be boiled or treated with iodine. Iodine treatment of water is intended for short-term use only. When the only water available is iodine treated, it should be used for only a few weeks.

Table 2-2. Treatment of water with tincture of iodine

Tincture of iodine	Drops ¹ to be added per quart or liter	
	Clear water	Cold or cloudy water ²
2%	5	10

¹One drop = 0.05 mL. Water must stand for a minimum of 30 minutes before it is safe to use.

²Very turbid or cold water can require prolonged contact time; if possible, such water should be allowed to stand several hours before use. To ensure that *Cryptosporidium* is killed, water must stand for 15 hours before drinking.

Chlorine, in various forms, can also be used for chemical disinfection. However, its germicidal activity varies greatly with the pH, temperature, and organic content of the water to be purified; therefore, it can produce less consistent levels of disinfection in many types of water.

Water Filters

Portable filters currently on the market will provide various degrees of protection against microbes. Reverse-osmosis filters provide protection against viruses, bacteria, & protozoa, but they are expensive & larger than most filters used by backpackers, & the small pores on this type of filter are rapidly plugged by muddy or cloudy water. In addition, the membranes in some filters can be damaged by chlorine in water. Microstrainer filters with pore sizes in the 0.1- to 0.3-µm range can remove bacteria & protozoa from drinking water, but they do not remove viruses. To kill viruses, travelers using microstrainer filters should be advised to disinfect the water with iodine or chlorine after filtration, as described previously. Some filtration kits come

with an additional filter effective against viruses. Filters with iodine-impregnated resins are most effective against bacteria, and the iodine will kill some viruses; however, the contact time with the iodine in the filter is too short to kill the protozoa *Cryptosporidium* and, in cold water, *Giardia*.

Filters that are designed to remove *Cryptosporidium* & *Giardia* carry one of the four messages below—verbatim—on the package label.

Reverse osmosis , Absolute pore size of 1 micron , Tested and certified by NSF International (formerly the National Sanitation Foundation) Standard 53 or NSF Standard 58 for cyst removal
Tested and certified by NSF Standard 53 or NSF Standard 58 for cyst reduction.

Filters may not be designed to remove *Cryptosporidium* and *Giardia* if they are labeled only with these words:

Nominal pore size of 1 micron, One-micron filter, Effective against *Giardia* , Effective against parasites , Carbon filter , Water purifier , Environmental Protection Agency (EPA)-approved (Caution: EPA does not approve or test filters.) , EPA-registered (Caution: EPA does not register filters for *Cryptosporidium* removal) , Activated carbon , Removes chlorine , Ultraviolet light , Pentiodide resins , Water softener

Filters collect organisms from water. Anyone changing cartridges should wash hands afterwards. Filters may not remove *Cryptosporidium* as well as boiling does, because even good brands of filters may sometimes have manufacturing flaws that allow small numbers of organisms to pass through the filter. In addition, poor filter maintenance or failure to replace filter cartridges as recommended by the manufacturer can cause a filter to fail.

Proper selection, operation, care, and maintenance of water filters are essential to producing safe water. The manufacturers' instructions should be followed. NSF International, an independent testing company, tests and certifies water filters for their ability to remove protozoa, but not for their ability to remove bacteria or viruses. Few published scientific reports have evaluated the efficacy of specific brands or models of filters against bacteria and viruses in water. Until such information becomes available, CDC cannot identify which specific brands or models of filters are most likely to remove bacteria and viruses. To find out if a particular filter is certified to remove cryptosporidia, contact NSF International by calling 1-877-867-3435; by fax to 313-769-0109; or by writing to 789 North Dixboro Road, P.O. Box 130140, Ann Arbor, Michigan 48113-0140; or online at <http://www.NSF.org/certified/DWTU/>. Under "Reduction claims for drinking water treatment units—health effects," check the box in front of the words "Cyst Reduction."

As a last resort, if no source of safe drinking water is available or can be obtained, tap water that is uncomfortably hot to touch might be safer than cold tap water; however, proper disinfection, filtering, or boiling is still advised.

Stugeron is used for the prevention and control travel sickness.

This is a drug used world wide. Though it is not available in the U.S.

15 MG TABLETS (CINNARIZINE)

Each tablet contains 15 mg of cinnarizine.

- Other ingredients: Lactose, corn starch, sucrose, talc, magnesium stearate and povidone as inactive ingredients.

SPECIAL PRECAUTIONS

Parkinson's disease

Low blood pressure

If you have Parkinson's disease or low blood pressure, ask your doctor who will decide whether or not you can take Stugeron.

If you are pregnant, think you might be pregnant, ask your doctor before taking.

Do not breast feed if you are taking Stugeron.

Always tell your pharmacist if you are taking any other medicines because taking some medicines together can be harmful. Taking Stugeron with other medicines may make you feel more drowsy, such as those medicines taken for anxiety or to help you sleep (tranquillisers), certain pain killers and certain antidepressants. Only take Stugeron with any of these medications if your doctor says that you can.

May cause drowsiness not to be taken with alcohol.

Whenever possible, Stugeron should be taken after food to reduce the possibility of stomach irritation. The tablets may be sucked, chewed or swallowed whole w/ water.

HOW MUCH SHOULD YOU TAKE?

Adults and children over the age of 12:

Take two tablets 2 hours before traveling, then a further one tablet every 8 hours during the journey.

Children 5-12 years:

Take one tablet 2 hours before traveling, then a further half tablet every 8 hours during the journey.

IMPORTANT - DO NOT EXCEED THE RECOMMENDED DOSE

If you forget to take Stugeron, do not take the missed dose, but take your next dose as usual.

IF YOU THINK YOUR MEDICINE MAKES YOU FEEL ILL

The use of Stugeron to control travel sickness is usually not associated with side effects. Those side effects that may occur are usually minor & short-lived, such as drowsiness or upset tummy. In rare cases, headache, dry mouth, increased sweating or allergic reactions may occur. Very rarely, Stugeron has been associated with the development of itchy patches on the skin and jaundice (yellow skin or eyes) in people who have taken it for longer periods.

In older people who have taken Stugeron for longer periods, there have been rare cases of aggravation or appearance of trembling, restless legs or muscle stiffness. These symptoms may occur together with a feeling of depression. If any of these symptoms occur, you should stop taking this medicine and tell your doctor.

Medical Help At Sea

You find yourself in the middle of the ocean and want to consult a Medical Doctor, a dentist or a Vet, for your pet?

Rest assured, a specialised team is available to you, all hams, all with experience in blue water sailing:

KA6PKB - Dr. Robert (Bob) Austin

E-Mail: thataway@aol.com

Also available on SSB Radio for voice consultation.

- Bob's specialty is Internal Medicine, Nephrology and Sports medicine.

N7RHH - Dr. Michael H. Morrell

E-Mail: n7rhh@winlink.org

Radio : N7RHH (for WL2K users)

- Mike is an orthopaedic surgeon and he and his wife Nancy are sailing s/v 'Serenity', presently in Georgia.
Check latest 'CMM' bulletin for updated position.

NX2T - Charles L. Starke MD, FACP

E-Mail: starke@cloud9.net or cstarke@alumni.princeton.edu

Homepage: www.drstarke.com

Office phone: 914-762-4460

Office fax: 914-762-4478

Captain: s/y Dawnpiper, Trintella 45, built 1985.

- Charles is an internist (specialist in adult diseases) with a lot of emergency experience including ship's doctor on 14 cruise ships, including two trips to Antarctica. He is associated with International SOS. He holds a 100 ton Captain's license (sail and power), able seamen under sail, and enjoys ocean sailing and has taken part in numerous races and ocean cruises.

OE4RYC - Dr. Rudolf Wendrinsky

Radio: OE4RYC @ OE4XBU.AUT.EU

E-Mail: oe4ryc@aon.at

- Rudi is an orthopaedic surgeon in a hospital in Austria. He is SysOp of one of the major WL2K MBO's in Europe, enjoys sailing on a lake near his home and in the Med. during the summer holidays.

W5AA - Dr. Richard J. Brown

E-Mail: rjbro@bellsouth.net

- Dick is a doctor of Veterinary Medicine. Board certified in pathology. Also a USAF pilot as well as veterinarian, C-119 and C-130 Clinician for the Chipanzees that the USAF and NASA put in space. Worked in aviation/space medicine and tropical medicine in Florida, Taipei and Jakarta. Belongs to a club which owns a sail boat used for charters out of Quepos, Costa Rica.

You can contact any of the five M.D.'s listed above, all of whom have general medical qualification as well as any speciality.

Direct your request for medical assistance to either the listed E-Mail Address, using the Radio-EMail service, or to the Radio Address.

Make the subject line 'Medical' or 'Urgent Medical'.

State in your message: sex of the patient, age, temperature, pulse and complaints/symptoms, as detailed as possible.

Also indicate the type of International Medical Chest, if any.

The landbased physicians may well consult colleagues to get the full spectrum of opinions and ideas.

- This service is free of charge and messages will be treated with the highest possible confidentiality.
- Disclaimers: Each of the physicians provides advice as a public service and "good Samaritan" and they accept no liability for the outcome of any advice given.
- ZS5S accepts no liability or responsibility for the accuracy of information passed between users.

Bon Voyage and 73,
Joost, ZS5S (ex PA0LO/MM)

From Cruising World, July 1997

An Apple a Day When the Doctor's Away

by **Beth Leonard**

The cruising lifestyle is healthy. However, medical issues must be of primary concern when facing the isolation of the sea. While every offshore cruising boat must be prepared to handle any medical emergency without outside assistance, it helps to know what types of situations are common when voyaging around the world. The medical log from our three-year circumnavigation shows that, while we were almost completely untroubled by colds and flus, we faced a much higher incidence of infections and allergic reactions. We were prepared to treat these quickly and effectively. Like most of our passagemaking friends, we also suffered some minor traumatic injuries and general health problems specific to cruising. While your medical kit and first aid preparations should be geared to the type of cruising you intend to do, our medical experiences may offer a general guide to equipment and training if you are preparing to go cruising.

Besides seasickness, our most common problem was infection. Bacteria and microbes flourish in the tropics; we found tropical infections to be much more virulent than in colder climates. Higher dosages of antibiotics were required to treat them effectively. Assume that your

environment is hostile, and adopt precautions and practices. Clean open cuts or scrapes thoroughly when they occur and after swimming with a good disinfectant such as Betadine. Apply an antibiotic ointment or powder several times per day to open cuts. To let scrapes dry out, try to avoid covering them, unless you are going ashore where there are flies. Then, cover open cuts with fabric band aids, which won't fall off when repeatedly exposed to salt water. Before swimming, try to make sure the water is as clean as it looks. Avoid swimming in major ports even if the water seems clean. When swimming anywhere, it is still a good idea to dose your ears with Pedi-otic or a solution of half vinegar and half rubbing alcohol to prevent ear infections. Cuts from coral or fish hooks and stings from venomous marine life are highly susceptible to infection. These should be treated as above. If the cut is deep or redness and swelling develop, a course of antibiotics should be administered as early as possible.

Offshore boats should carry antibiotics of several varieties in case resistant bacteria are encountered or a crew member develops a reaction to one type. Before self-administering, if possible see a local doctor familiar with tropical infections to ensure that a high enough dosage is used. In the tropics, a dosage of 1 to 1.5 grams per day of most antibiotics is considered a minimum. We carried a potent injectable antibiotic (Cephtriaxone) as a last resort in case of a severe infection that would prevent oral administration.

Bring a good supply of Monistat cream or suppositories for vaginal yeast infections. Both yeast infections and urinary tract infections are common in the warm, moist cruising environment, especially when hygiene is difficult, as on long passages. Also, taking antibiotics can result in yeast infections in women. Urinary tract infections should be treated with antibiotics and yeast infections with Monistat at the first onset of symptoms.

We both suffered a number of allergic reactions, and often we were not even certain of the cause. Besides different foods and water, cruisers also face venomous marine life and stinging insects. Though rarely life threatening and generally treatable with over-the-counter antihistamines, some symptoms are so unusual they can be alarming. The key to managing allergic reactions is first to recognize them for what they are and then to treat them with antihistamines (systemic reactions) and skin ointments (localized itchy rashes).

Sometimes it can be difficult to tell if symptoms are caused by an allergic reaction or an infection. Generally, infections are characterized by heat and painful swellings under the skin, but the same can happen in the case of a bad localized allergic reaction. If in doubt, try rubbing the area with cortisone cream. If it responds, you have an allergic reaction. Based on our experience, we feel you cannot have too many antihistamines aboard, including adrenaline in the event of an ultimate life-threatening situation. If a crew member suffers from particular allergies, discuss with your M.D. the range of possible symptoms and the techniques necessary to deal with a major reaction.

In addition to the basics, we carried a full range of emergency and first aid equipment, including air splints and fiberglass cast materials, suturing supplies and an airway resuscitation kit. Fortunately, we did not have to use it. But the best first aid kit in the world will be of little use if no one aboard has the training to employ the equipment properly. Conversely, much can be done with makeshift materials by someone who is knowledgeable and innovative.

Emergency and trauma management is first and foremost a matter of preparation. Couples considering heading off to make major passages and travel to remote areas should take steps to ensure that either one could handle the situation if the other were badly injured. Take a basic first aid course and a CPR course. Decide how exactly each type of medical emergency will be dealt with at a level consistent with your cruising plans. For example, if you are only making short passages between developed ports with good medical care, learning suturing may not be necessary. On the other hand, if the boat is to be at sea for weeks on end, you should be as close to medically self-sufficient as possible. Know beforehand exactly how emergencies are going to be handled, have necessary equipment aboard and accessible, and ensure that both crew members are competent to deal with a medical emergency. Investigate medical services (see [“Medical Programs And Self-Help At Sea”](#)). Others are available through the HAM and SSB radio nets. While these can offer life-saving advice, they do not reduce the necessity for self-sufficiency.

Cruisers must also learn to cope with sun exposure and occasional dietary deficiencies (particularly calcium and iron) and must consider how they will manage exercise on long passages and major health risks in some ports of call.

In port, we got plenty of exercise, especially since we did not have an outboard for our dinghy. On passage, although we maintained a good upper-body workout, we suffered from lack of leg exercise. Using ankle weights helped considerably. Yoga is also a good alternative.

Finally, there are some health hazards for which the best offense is a good defense. In many parts of the world, AIDS is becoming epidemic, with significant percentages of the population now HIV positive. Consider carrying sterile hypodermic needles aboard and asking a doctor to use them if you need an injection. While malaria is not a problem in most tradewind destinations, nonetheless the Solomon Islands, Vanuatu and parts of Indonesia have serious malaria problems with strains that are resistant to quinine. Consider this risk when deciding whether or not to visit these areas, and research carefully the most effective prophylaxis and treatment. Ciguatera is increasingly common, with different fish species exhibiting varying toxicity in different places. Always ask locals before eating any reef fish or barracuda over one foot long.

No matter what type of cruising you intend to do, be prepared to bridge the gap between the onset of a serious medical emergency and professional medical assistance. When the doctor's a long way away, it takes more than an apple to insure health and well-being. But like any situation at sea, preparation is the key to successful emergency management.

Coping With Mal de Mer

Like many other cruisers, our most common malady was seasickness. We experienced listlessness, drowsiness, mild queasiness, yawning and increased salivation the first few days of every passage. When symptoms progress to vomiting, dry heaves, dizziness, and total apathy, there is a serious health risk. Try to avoid crossing the line from mild to full-blown symptoms; once vomiting starts, options are more limited for restoring normalcy before making landfall. If staying in a marina, leave a few days before the passage and anchor in the most rolly anchorage you can find to acclimate yourself to the motion. For us, on some passages this tactic eliminated all symptoms; we found that taking seasickness medicines before leaving port only delayed symptoms. Most of our cruising friends agreed that, unless you spent the entire passage on

medication, at some point you simply had to adapt. For that reason, we didn't like to take anything for these first few days of discomfort, rather we tried to get through them as quickly and painlessly as possible.

At the start of any passage, we tried to limit time spent below. Before leaving port, sea berths were made up and extra clothes set at the foot of each, meals were pre-made, and a bucket placed on deck for use as a head. We avoided extremes in temperature, strong odors, and poor ventilation. If we could make it through the first night when the sun went down and we lost the horizon, we were generally fine for the rest of the trip. Leaving on a full moon, when possible, almost always meant a faster adjustment to sea conditions because of better visibility at night.

We avoided reading for the first two or three days of a passage, and tried to limit time at the chart table to 10 or 15 minutes. If we started to feel sick, an hour at the helm or an hour's nap would often take care of the problem.

There are a wide variety of seasickness medications, but it is impossible to generalize about their efficacy. Anyone who suffers from severe seasickness must experiment to find a cure that works. Drugs to be used at sea should be used on land first to avoid debilitating side effects. Sturgeron is highly regarded by cruisers, but is not available in the U.S. Many cruisers stock up when they are in Europe, Australia, or Bermuda. Scopolamine patches are back on the market here; many find them effective. The few times when I was seriously ill, I used a combination of one 50-mg. tablet of ephedrine (Promethazine) and one 25-mg. tablet of Phenergan. Even after the onset of vomiting, as long as I could keep it down for an hour, all symptoms disappeared. This combination lasted for 12 hours with no drugged feeling.

If seasickness moves into the phase of repeated vomiting and almost total debilitation, phenergan suppositories may bring relief. In the worst cases, the main treatment is to prevent dehydration. Electrolyte solutions or even chicken soup enemas will provide needed nutrients and water if no other treatment is effective.

Must-Have Medical Reference Books

In addition to the standard shipboard medical texts and wilderness medicine guides, we recommend that an offshore sailboat carry one of each of the following:

Health Information for International Travel (Centers for Disease Control, HHS Publication #CDC 95-8280, Superintendent of Documents, U.S. Government Printing Office, phone 202-512-1800, \$14). The single best reference for highlighting the health risks of various regions, necessary vaccinations and precautions, and recommended treatments for malaria where it is endemic. Up-to-date information by country is available on the CDC's International Travelers' Hotline (404-332-4559).

The Onboard Medical Handbook by Paul G. Gill, Jr., M.D. (International Marine, Camden, Maine)

AMA Guide To Your Family's Symptoms (Random House, \$15) or **Complete Guide to Symptoms, Illnesses, And Surgery** by H. Winter Griffith, MD (The Body Press, \$16.95) provide flow charts organized by symptom to aid in self-diagnosis. Shortcoming: The flow chart

generally ends with, "See your family physician." At that point, the wilderness medical texts become useful.

The First Aid Handbook by the National Safety Council (Jones and Bartlett Publishers, \$10.95) is easy to use and well organized, with diagrams. For travel to remote areas where medical help is far away even on shore, this general first aid reference with step-by-step instructions is useful.

Laceration Repair

George Snell

Lacerations are a commonly seen problem in physicians' offices, urgent-care centers, and hospital emergency rooms. They are seldom life-threatening, but since most are sustained traumatically they are often associated with substantial emotional upset on the part of the patient, parent, or accompanying party. Calmness, as well as competent and thorough treatment, is often the best management course for both the tissue and emotional trauma.

There are four goals of primary wound closure:

1. Stop bleeding
2. Prevent infection
3. Preserve function
4. Restore appearance

These goals should be kept in mind by the physician who is handling tissues and assisting nature's healing processes. The stages of wound-healing should be known by the physician providing care for lacerations; discussions can be found in references at the end of the chapter.

EQUIPMENT

- Prep pack containing eight to ten 4 x 4 inch gauze sponges in metal prep basin wrapped for sterilization
- Suture pack (double wrap for sterilization) containing: sterile drape (to be placed under lesion if needed); fenestrated drape (applied over the lesion); 6-inch plastic needle holder (Fig. 3-1); curved dissecting scissors (Fig. 3-1); two mosquito hemostats—one curved, one straight; suture scissors; six 4 x 4 inch gauze sponges; Adson toothed forceps (Fig. 3-1); and medicine cup
- Skin hooks (Fig. 3-2): Used for atraumatic tissue handling, "homemade" from a 25-gauge insulin syringe plus a 25-gauge needle (A commercially manufactured instrument is also available.)

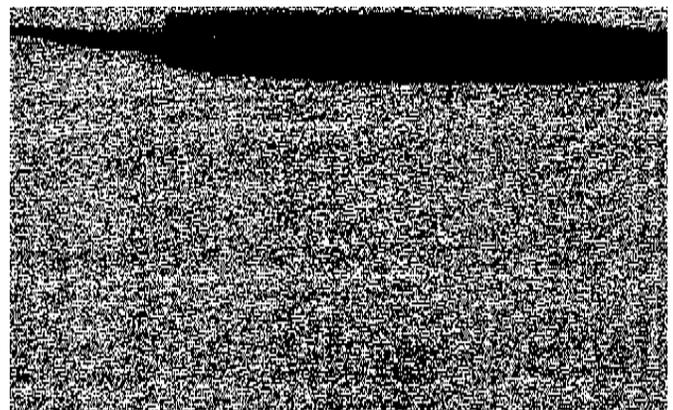
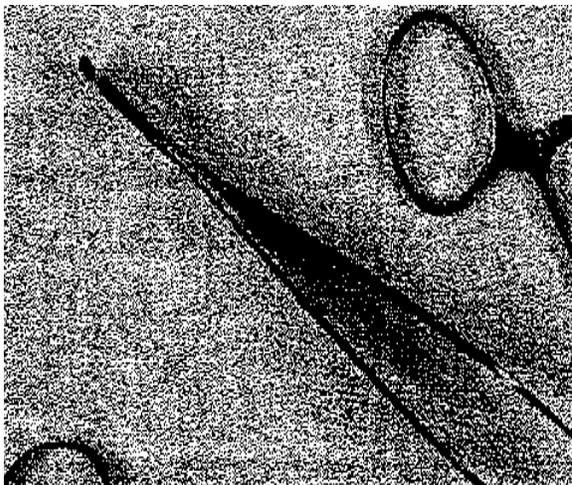


FIG. 3-1.
Suture pack items:

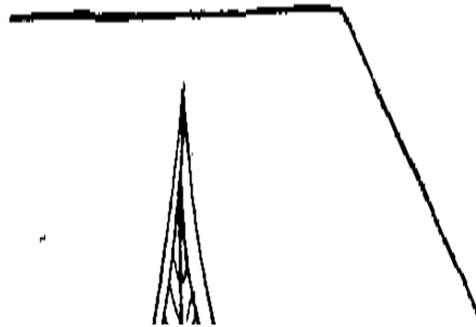
FIG 3-2

INITIAL ASSESSMENT AND LOCAL ANESTHESIA

Many wounds can be examined and cleansed without anesthesia. However, to provide the patient prompt comfort and allow for a thorough examination, it is often helpful to anesthetize the wound before treatment. (See Chapter 21, Local Anesthesia.) The initial evaluation before anesthesia, however, should include an assessment of any peripheral nerve damage and motor function disturbance.

WOUND PREPARATION

Following the initial assessment and administration of local anesthetic, wounds should be thoroughly inspected for foreign bodies, deep tissue layer damage, and injury to nerve, vessel, or tendon.



Cleansing of the wound can be accomplished by mechanical and chemical means. Mechanical methods include wiping, brushing, and irrigation. Copious saline irrigation is probably best accomplished by forcing saline through a 18- to 22-gauge needle with a 25 cc syringe. Chemical cleansing is less important, but it is often accomplished with antiseptic soaps that contain hexachlorophene (pHisohex), chlorhexidine gluconate (Hibiclens), or povidoneiodine (Betadine).

Following the cleansing process, wounds should be examined for devitalized tissue that needs removal or debridement. This debridement may convert a jagged, contaminated wound into a clean surgical one and can be accomplished with a scalpel or sharp tissue scissors.

After debridement, wound edges should be held together to see if they are under any tension. Skin mobility can be increased by undermining. A scissors or scalpel should be used for undermining, which is done in the subcutaneous plane beneath the dermis to allow the skin to glide together. (See Fig. 3-3)

TECHNIQUE

Ideally, there are three principles that should be incorporated in the process of closing any wound (see Figs. 3-4 and 3-5).

1. Eliminate dead space where tissue fluid and blood can accumulate.
2. Accurately approximate tissue layers to each other, including fat/fascial junction, dermal junction, and epidermal margins.
3. Approximate the wound with minimal tension. Lacerations are approximated using a variety of suturing techniques:

Simple interrupted dermal suture (Fig. 3-6). Keep the skin margins level or slightly everted. The needle should enter the skin surface at a right angle. The final stitch should be as wide as the suture is deep. The opposite skin margin is approximated using the mirror image of the placement of the first part of that suture, and the distance from the suture's exit to the wound margin should equal the distance from the suture's point of entry to the wound margin. The final shape should appear like an Erlenmeyer flask. As a general rule, these sutures need to be no closer than 2 mm apart in a fine plastic closure and can be substantially farther apart in other types of closures. Avoid tying the knots too tight. The distance between sutures should equal the total distance across the incision (Fig. 3-6, *B*).

Subcutaneous suture with inverted knot or "buried stitch" (Fig. 3-7). Deeper wounds or wounds under tension are best closed by not relying solely on dermal sutures. A well-placed subcutaneous suture can do much to aid in closing a wound and removes tension from the skin sutures. Absorbable sutures are usually used for this purpose; however, for facial wounds, a clear monofilament synthetic suture material can be used and will help eliminate an inflammatory reaction or subsequent rejection of the suture. The inverted knot technique places the bulk of the knot below the skin margins to be approximated. To start the stitch, begin at the bottom of the wound and come up. Go straight across the incision then down to the base once again and tie (thus placing the knot most inferior in the wound). The wound may need to be closed in multiple layers as shown in Fig. 3-7.

Vertical mattress suture (Fig. 3-8). This suture promotes eversion of the skin and is helpful when considerable skin tension is present or where the skin is very thick, such as in the palms and soles. It is also useful where the natural tendency of the loose skin is to promote inversion of the wound margins.

Intracuticular running suture (Fig. 3-9). This suture is used to close linear wounds that are not under much tension and yields an excellent cosmetic result. The ends of the suture do not need to be tied; taping under slight tension will preserve approximation.

Three-point or half-buried mattress suture (Fig. 3-10). This suture is designed to permit closure of the acute corner of a laceration without impairing blood flow to the tip. It is an intradermal stitch in which the needle is inserted initially into the skin on the nonflap portion of the wound at the mid-dermis

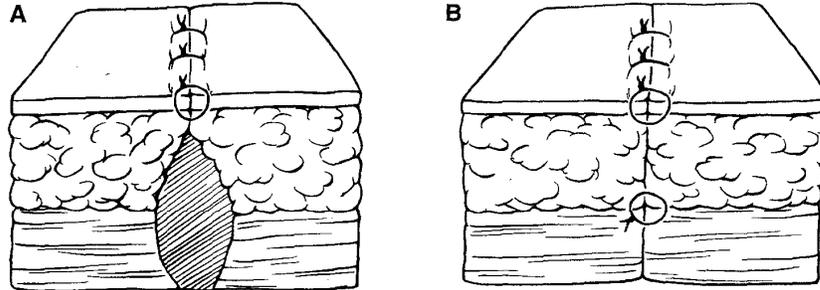


FIG. 3-4.
A, Improper and B, proper wound closures.

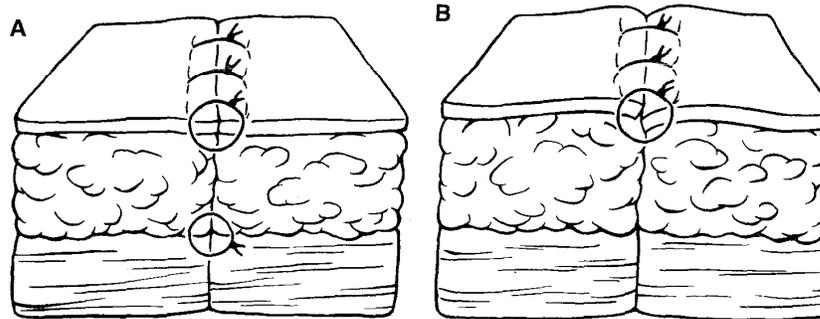


FIG. 3-5.
A, Proper tissue apposition and B, inappropriate excess tightness.

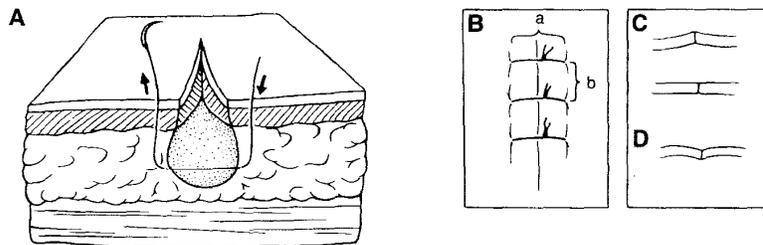


FIG. 3-6.
Interrupted dermal suture. A, Proper depth; B, Proper spacing ($a=b$); C, Proper final appearance; D, Improper final appearance.



FIG. 3-7.

Inverted subcutaneous suture. Also shown is layered closure.

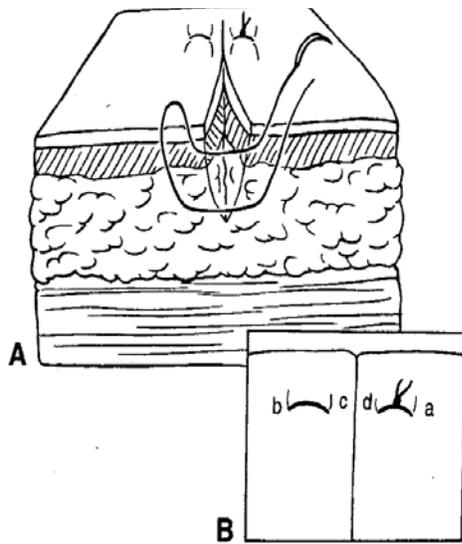


FIG. 3-8.
Vertical mattress suture. **A**, Cross-section;
B, Overhead view. Begin at *a*, and go under skin to *b*.
Come out, go in at *c*, and exit at *d*.

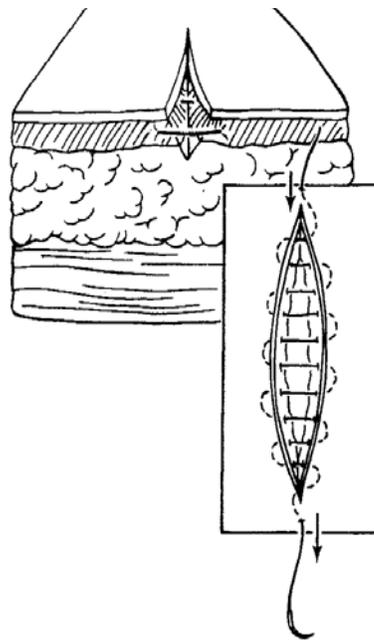
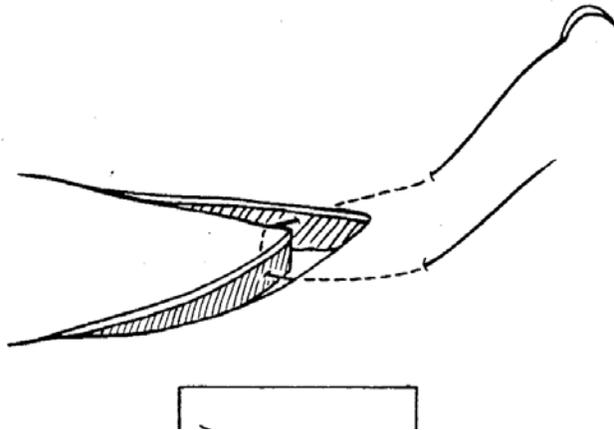


FIG. 3-9.
Intracuticular running suture.



level; and then at the same level, the suture is passed transversely through the tip and returned on the opposite side of the wound paralleling the point of entrance. The suture is tied, drawing the tip snugly into place in good opposition. This 'same approach can be utilized in closing a stellate 4- or 5-point laceration, drawing the tips together in a purse string fashion.

POSTPROCEDURE CARE

Most wounds are best protected with some sort of dressing during the first 24 to 48 hours after closure. Continued oozing might be expected or pressure might be needed. For hemostasis, a pressure dressing should be applied over a nonstick type of gauze dressing. Trade names for

such dressings include Xeroderm, Adaptic, and Telfa. It is not usually necessary to keep a wound dry until the time of suture removal. Suggestions for the timing for suture removal are as follows:

Facial wounds: 3 to 5 days

Scalp and extremity wounds (not over mobile joints and chest} 7 to 8 days

Palms, soles, back, and skin over mobile joints, such as knees and elbows: 10 to 14 days

Wounds under considerable tension that are repaired may need to be splinted for optimal healing. Some wounds, such as those on the face or scalp, need not be covered at all. A quick check to inspect for evidence of infection or subcutaneous bleeding is sometimes necessary 2 or 3 days following closure and may serve as an indicator of the physician's concern and care. A wound instruction handout can be given; a sample one is seen below.

Care of Sutured Lacerations

1. Keep wound & dressing clean. You may shower. Do not expose the wound to moisture for prolonged periods of time.
2. Wet Dressing: If the dressing gets wet, remove it, blot the wound dry with a sterile gauze pad & reapply a clean, dry dressing, e.g. a sterile gauze pad.
3. Dressing Changes: Remove the dressing applied after two days & reapply a sterile dressing. Repeat this procedure every day until the stitches are removed, unless instructed otherwise.
4. Signs of Infection: If any of the following signs of infection appear, contact a physician immediately:
 - a. Wound becomes red, swollen, tender or warm
 - b. Wound begins to drain or fester
 - c. Red streaks appear around wound
 - d. Tender lumps appear in the groin or under the arm
 - e. Chills or fever occur
5. Infection Check: Because of the nature of your injury, the possibility of infection is increased. Please return to be checked in _____ days
6. Stitch removal: The physician suggests that the stitches be removed in about _____ days
7. Tetnus Immunization: For your records, you/your child received the following:
 - a. Tetnus Toxoid _____
 - b. DT (Diphtheria Tetanus) _____
 - c. DPT (Diphtheria Petussis Tetanus) _____
 - d. Other _____

How To Survive a Heart Attack When Alone! (from 2005 book)

You are alone and you start experiencing severe pain in your chest that starts to radiate out into your arm and up into your jaw.

Without help, a person whose heart stops beating properly and who begins to feel faint, has only about 10 seconds left before losing consciousness

You can help yourself by coughing repeatedly and very vigorously

A deep breath should be taken before each cough. The cough must be deep and prolonged, as when producing sputum from deep inside the chest. A cough must be repeated about every 2 seconds without let up until help arrives, or until the heart is felt to be beating normally again.

Deep Breaths get oxygen into the lungs and coughing movements squeeze the heart and keep the blood circulating. The squeezing pressure on the heart also helps it regain normal rhythm.

In addition: if you are assisting a suspected heart attack victim, the 3 basic points to remember BEFORE starting CPR:

A - check to make sure the victim's airway is unobstructed gently tilt the head back and lift the chin, if obstruction, turn head to side and sweep mouth with finger to remove obstruction

B - check to see if the victim is breathing, you can place your face next to the victim's nose and feel any air passing or watch for chest to rise

C – check for pulse, best done right at the neck.

Remotes Medical Report

A proper form can order your thoughts & clarify relevant details in advance of calling for help during an emergency

Reporter's name:

Patient's name:

Location of Patient's
Medical records:

Vessel name:

Date/ Time:
Date: _____
Time: _____

Current Geographic
position:

Approximate time &
Distance from advanced
medical care:

Current Injury/Illness
What is wrong?

How did it
happen/develop?

What was the patent
Doing prior to onset?

What other symptoms or
complaints does the
patient have:

- Fever Diarrhea
- Pain Vomiting
- Weakness
- Shortness of breath

Pain

Location of pain:

Does the pain radiate to
another part of the body?

What makes it worse?

Can the pain be provoked
by anything?

What's the quality of pain:
 Sharp Dull
 Burning Stabbing
 Cramping Constant
 Intermittent

When did the pain start?

Is it getting worse?

Is anything especially
tender to touch or painful
with movement?

How severe is the pain on
a scale of 1-10 (minimal to
agonizing)?

What can the patient do to
make it better?

Is the pain worse at certain
time of day or after meals?

**Physical Exam/
Observation**

What does the patient look
like?

Sick, in pain, unconscious,
delirious?

What is the patient's pulse
& respiratory rate?

Pulse: _____
Resp. rate: _____

If possible, what are the
patient's temperature &
blood pressure?

Temp.: _____
B. pressure: _____

What do you see that isn't
normal in any of the
following:

- Head & scalp: _____
- Facial coloring: _____
- Eyes: _____
- Ears: _____
- Nose: _____
- Throat/teeth/tongue: _____
- Neck: _____
- Chest & ribs: _____
- Abdomen: _____
- Pelvis & genitalia: _____
- Arms/legs/hands/feet: _____

Can the patient remember
recent events?

Is there anything else
you've observed?

What medical equipment
or medications do you
have onboard?

Medical advice from
doctor:

Plan for treatment:

Plan for re-contant &
follow up:

Notes: _____

HAZARDOUS MARINE LIFE

Michael Jacobs, MD

Objectives;

Be familiar with hazardous marine life.

Be able to treat injuries caused by marine animals, fish, reptiles, and plants.

MARINE CREATURES THAT STING

JELLYFISH

Sea Anemone, Hydroid, Man-Of-War, Sea Nettle, Irukandji, Sea Wasp, and Box Jellyfish -these animals inflict painful and occasionally life-threatening stings with their tentacles, which contain millions of venomous stinging cells called nematocysts.

Signs and Symptoms

Reaction to the stinging cells varies according to the type of jellyfish, the venom's potency, and the amount injected. The skin turns red and may show an imprint of the tentacles; welts, blisters, and ulceration may develop. Symptoms vary from itching and burning to excruciating pain; shortness of breath may signal impending shock and cardiac arrest. Other signs include agitation, nausea, vomiting, rapid breathing, an irregular pulse, and falling blood pressure.

Treatment

Vinegar (acetic acid 5%) should be applied immediately to inactivate the venom. If vinegar is not available, the area should be flushed with seawater. Fresh water or application of ice directly to the skin should never be used. They activate the stinging cells and worsen the pain and injury. Cold packs or ice in a plastic bag can relieve pain from a man-of-war sting but leaks and fresh water surface condensation must be sought.

If the eyes are stung, they should be irrigated immediately by putting the face in seawater and repeatedly blinking. They can be rinsed with sterile eye wash or fresh water, but should never be irrigated with alcohol or vinegar. If the pupil remains dilated and the vision is blurred, an ophthalmologist should be consulted.

Vinegar or rubbing alcohol (40% to 70%) should be applied for 30 minutes or until the pain subsides.

Household ammonia (one quarter strength) or baking soda, either a powder or a paste, also work. Meat tenderizer has limited usefulness. It should be applied for no more than 10 minutes on children's skin and 15 minutes for adults. Solvents such as gasoline and turpentine should not be used and rinsing with other products containing alcohol (perfume, liquor) should be avoided.

Embedded particles or tentacle fragments should be removed with a splinter picker or tweezers. The skin should not be rubbed or scrubbed. Protective gloves should be worn, if available, to avoid touching the tentacles.

Applying shaving cream or baking soda paste and shaving the area with a razor, knife, credit card, or other sharp-edged object helps remove stinging cells. Vinegar or alcohol should be applied for another 15 minutes afterward.

Hydrocortisone cream (1 %) can be applied twice daily. Aloe Vera gel also provides relief.

If the skin reaction is severe and prolonged, resembling a severe reaction to poison ivy, a short course of oral prednisone may be administered. In adults, 60 mg should be given initially and the dosage decreased by 10 mg daily over six days."

Medical attention should be sought if the victim is very old or very young, a large area is affected, or there are signs of systemic illness such as nausea and vomiting, chest pain, or shortness of breath. Rarely, anaphylactic reactions to nematocyst stings occur and require immediate epinephrine and antihistamines.

If a victim is stung on the mouth, he should not be given liquids, and should be monitored for respiratory distress from an obstructed upper airway, which would necessitate transport to a medical facility.

If the sting is from the Australian *box* jellyfish, vinegar, but not rubbing alcohol, should be applied. Such stings are life threatening. Immediate medical assistance should be sought, and pressure immobilization should be used to delay absorption of venom from the sting site. Antivenom is available.

Treatment for inactivating jellyfish venom may vary with some species. When possible, local swimmers and lifeguards should be asked what works best in their area.

Prevention of injury in jellyfish inhabited waters

- A bottle of vinegar should be handy when swimming or diving.
- A thin Lycra dive suit or some form of protective clothing can be worn when swimming or diving in jellyfish infested areas.
- Swimmers should be aware of surface concentrations of jellyfish, and should always check snorkel and regulator mouthpieces for tentacle fragments.
- Diving head first into infested waters should be avoided.
- Jellyfish can become entangled on lines in the water. Divers should not hold onto anchor lines or descent/ascent lines without gloves.
- Swimmers should watch for the bluish purple gas-filled sac of a Portuguese man-of-war and avoid touching the tentacles in the water and on shore.
- *Land's End Oil* can neutralize the venom of jelly fish, as well as fire coral and sea lice. The active ingredient, ozone, oxidizes the venom and prevents the rash from forming. *Sea Safe* contains chemicals to prevent the stings & rashes from jellyfish, fire coral & sea lice. It is available in a waterproof sunscreen.

FIRE CORAL

These venomous creatures sting the unwary swimmer upon physical contact. A topical decontaminant (vinegar) should be applied immediately, following the steps outlined for

jellyfish stings. Shaving the skin is unnecessary. Gloves, boots, and protective clothing, and good buoyancy control while diving help prevent accidental contact.

CONE SHELL (SNAIL)

These highly venomous snails are found in the Indo-Pacific, and reefs off the coasts of Hawaii, Mexico and California. A less toxic Atlantic species inhabits Florida waters. Venom is injected from the proboscis, a projectable, flexible tube containing a venom filled tooth. Treatment is similar to that described for sea snake bites, using the pressure immobilization technique. No antivenom is available.

Picking 'up a cone snail with bare hands should be avoided. Collectors should wear appropriate gloves and never carry a live cone in a pocket.

MARINE CREATURES THAT PUNCTURE

SEA URCHINS

Sea urchin spines are needle sharp, brittle and venomous; puncture wounds can cause breathing difficulty, weakness, or collapse. To deactivate the venom, relieve pain, and clean the area, the wound should be immersed in nonscalding hot fresh water (110° to 113°P or 43° to 45°C) for 30 to 90 minutes. Immersion can be repeated if pain recurs. Visible spines should be removed gently to avoid breaking them, and crushing any fragments left in the skin should be avoided. The area should not be vigorously scrubbed.

Dye leached from a withdrawn spine can initially stain the skin. If the purple or black "tattoo" persists for more than 48 hours, a spine fragment is probably still embedded. Surgical removal is required for these and any spines penetrating into or near a joint. If the wound is deep (through the skin into fat and muscle, or penetrating the hand or foot), or shows any signs of infection, antibiotics should be administered. The section on wound management contains an appropriate antibiotic selection.

STINGRAYS

Stingrays have venomous barbed spines (stinger) on the back of their tails. When startled or caught, they react defensively by whipping their tail and spine into the intruder. The injuries include deep puncture wounds, lacerations, and envenomation. Symptoms include pain, bleeding, weakness, vomiting, headache, shortness of breath, fainting, collapse, paralysis, and rarely death. The wound should be rinsed, preferably with fresh water, and the injured area immersed in nonscalding hot fresh water (110° to 113°P or 43° to 45°C) for 30 to 90 minutes. Immersion can be repeated if pain recurs. Any visible pieces of the stinger(s) or sheath should be removed, and the wound scrubbed with soap and water. The puncture site should be vigorously rinsed and irrigated again with hot water using a syringe and 18-gauge catheter tip.

The wound should not be closed because the risk of infection is high. If medical care is more than 12 hours away, or if infection develops, antibiotic therapy should be started.

SCORPIONFISH AND CATFISH

Scorpionfish include lionfish, zebrafish, turkeyfish, and stonefish. Glands at the base of the spines on some (not all) of the fins of these fish discharge venom into a puncture wound. The venom causes extreme pain immediately; if untreated, it peaks in one hour and lasts for 6 to 12 hours. The spine can break off in the wound. The wound should be immersed in non-scalding hot water for thirty to ninety minutes, & the spine(s) should be removed as would be done for a stingray injury. Immediate medical attention should be sought if the victim becomes confused and delirious, is short of breath, or shows other signs of systemic illness. In Australia and other areas of the Indo-Pacific, antivenom is available.

STARFISH

The wound should be immersed in hot water and the spine(s) removed as would be done for a stingray wound. Crown-of-thorns sea stars have venomous mucus covered spines that cause painful puncture wounds.

NEEDLEFISH

When these fish leap from the water, speed and sharp narrow beaks can penetrate human flesh and can cause serious and sometimes fatal stab wounds in the head, chest, and abdomen. The beak should be removed and the wound evaluated for deep tissue damage.

Treatment is similar to that for a shark bite (see below). At night, lights on the water's surface attract and excite the fish, causing them to jump. Scuba divers should turn on lights only after submersion, and night fishermen should be extra cautious with lights in tropical waters.

PREVENTION OF PUNCTURE WOUNDS

Thick-soled booties or fins should be worn, although rays' spines can penetrate rubber and neoprene. Feet should be shuffled when entering the water, especially over sandy or muddy bottoms. Some fish are well buried or camouflaged on the sea bottom. Hands and feet should be kept off of reefs. Swimmers should be aware that even after a fish is dead the venom is still active.

MARINE CREATURES THAT BITE SHARKS

Shark bites cause severe tissue damage; death is usually from hemorrhage and shock. Bleeding from a severed artery or vein can be stopped immediately during a rescue by improvising a tourniquet from a surfboard leash, dive mask strap, or drawstring from the waist of a bathing suit. Firm direct pressure on the wound after the victim is removed from the water subsequently controls bleeding when the tourniquet is removed.

All bites from marine animals, however minor, pose a high risk for infection; the wound should be thoroughly cleaned with a high-pressure irrigation stream and explored for broken teeth and foreign debris. Wounds should not be sutured or taped tightly shut; they should be allowed to drain and antibiotic therapy should be begun. Skin abrasions from contact with the sandpaper-like sharkskin should be cleaned with soap and water, and covered with antibiotic ointment and a sterile dressing.

Divers and spear fisherman should know about shark avoidance and repulsion techniques. They should leave the water if bleeding from an injury, and speared fish should be removed from the water as soon as possible. If an unexpected encounter with a shark occurs, divers should move away slowly and not create an underwater commotion or splash at the surface simulating a struggling fish or seal. Sharks are best driven off with blunt blows to the snout, eyes, or gills, preferably not with a bare hand. GOOD LUCK!

BARRACUDA

Bites are managed like those of a shark bite. Barracuda may mistake a swimmer for prey if there is surface splashing, underwater commotion in murky waters, or reflective jewelry simulating a silvery fish.

MOREY EELS

The bite is managed those by a shark. The wound should be carefully inspected for teeth fragments and irrigated with povidone-iodine solution. The risk of infection and of tendon and nerve damage in hand, wrist, ankle and foot wounds is quite high. A punctured joint should be splinted, and antibiotics should be administered. To prevent such bites, which are defensive reactions, divers and snorkelers should avoid placing a hand in an unexplored crevice or cave, or beneath coral and rocks.

LEECHES

While attached to the skin and feeding, leeches inject a chemical to prevent blood clotting and promote bleeding. The leech falls off after feeding. The wounds develop large blisters, dead tissue, and they heal slowly. The leech should not be forcibly torn from the skin. Applying vinegar, rubbing alcohol, or a hot match head near the site of attachment should be tried. The wound should be checked for retained mouthparts, and cleaned several times daily with Betadine solution.

SEA SNAKES

Cottonmouth water moccasins are aquatic and land snakes native to the southeastern U.S. They belong to the pit viper family, and are found around waters from Virginia to Florida, extending westward to central Texas. The symptoms and treatment for envenomation are described in the handout on snakebite.

Sea snakes inhabit the tropical and warm temperate Pacific and Indian Oceans over the continental shelves, the waters around Hawaii, and the western coast of Central and South America from Baja California to Ecuador. No sea snakes are found in the Atlantic Ocean or in the Caribbean Sea.

Sea snakes bite with four to twenty fangs. The precise bite pattern varies and can be misleading in identifying the snake.

The venom from a sea snake causes muscle and nerve damage and destruction of blood cells. In contrast to pit viper bites, the wound is not painful. Serious envenomation produces symptoms within two to three hours. These include painful muscle movements, drooping eyelids, blurred vision, lockjaw, difficulty swallowing and breathing, drowsiness, and paralysis. If symptoms do not develop within 6 to 8 hours, envenomation has not occurred.

Treatment for sea snake bite

1. Transfer to a medical facility for antivenom and life support.
2. If the victim has suffered a severe envenomation and is several hours from medical care, wrap the entire extremity with a broad elastic bandage. This will effectively delay the absorption of venom. Rinse the area around the bite site with water to remove any venom on the skin, and cover the wound with a sterile dressing after cleaning it. Remove any constricting jewelry. Start the wrap at the bite site and continue wrapping snugly toward the torso. The bandage should not be loosened unless it is compromising the circulation. Immobilize the limb with a splint and position it below the level of the heart in a dependent position. Do not make incisions in the wound, try to suck out the venom with your mouth, apply ice or a tourniquet to the wound, or try to shock the area with electrical current.

MARINE CREATURES THAT CUT

CORAL AND BARNACLES

These living animals can inflict a seemingly minor injury that can easily become infected. Like all wounds acquired in the marine environment, these are often contaminated with seawater debris, slime, sand, bacteria, and other infectious agents.

To avoid infection, the cuts and scrapes should be scrubbed vigorously with soap and water, and the wound flushed, preferably with disinfected clean fresh water or bottled drinking water. Visible debris should be removed and the wound flushed with a half strength solution of hydrogen peroxide in water to bubble out the "coral dust," which is microscopic organic living debris from the surface of the coral. The wound should be flushed again with fresh water, an antibiotic ointment applied, and the wound covered with a non-adherent dressing. The wound should be scrubbed and rinsed twice a day, and systemic antibiotics should be started if signs of infection appear.

MARINE CREATURES THAT IRRITATE SKIN

SPONGES

Contact with sponges produces a skin reaction similar to poison ivy. The area should be soaked with vinegar for 10 to 15 minutes. If vinegar is not available, rubbing alcohol should be applied for 5 minutes. Repeatedly applying and removing sticky adhesive tape should remove embedded sponge spicules. Afterward a vinegar soak for 5 minutes or alcohol soak for one minute should be repeated, and a coating of 1% hydrocortisone cream applied. The area should be monitored for signs of infection and treated appropriately.

SEA CUCUMBERS

The skin irritation resulting from contact with a sea cucumber should be treated like a jellyfish sting.

SEAWEED DERMATITIS

The itching, burning, red rash often appears in a bathing suit distribution when the offending algae are trapped underneath bathing attire. It develops within minutes to hours after exposure. It should be treated by vigorously scrubbing the skin with soap and water, rinsing with copious amounts of fresh water, and rinsing again with isopropyl alcohol (40% to 70%). Hydrocortisone cream 1% can be applied twice daily. Severe burning and blisters are signs of an allergic reaction that requires oral prednisone and antihistamines.

SWIMMERS ITCH

This skin reaction is caused by freshwater parasites called schistosomes; they burrow into the skin as it dries. The initial symptom is a prickling sensation, followed by itching. The rash, resembling mosquito bites, is found on exposed areas. These areas may form tiny blisters and pustules that persist for up to two weeks. Mild cases can be treated by application of 40% isopropyl alcohol or calamine lotion, while more severe cases require oral prednisone similar to the tapering dose schedule for jellyfish stings. Topical or systemic antibiotics may be required for infection.

Full-length protective suits should be worn whenever practical to reduce skin exposure. Shallow areas near shore or near weed beds should be avoided, and swimmers should dry off briskly with a towel immediately after leaving the water.

SEA BATHERS ERUPTION

Bites from the larvae of jelly fish and anemones cause stinging or burning of the skin underneath covered areas (bathing suit, swim fins, bathing cap) while swimming or immediately upon leaving the water. Surfers may develop a rash on the chest and abdomen in the areas of contact with the surfboard. Itchy, raised red bumps develop within minutes, or up to 12 hours after exposure. They resemble insect bites, and may progress to blisters and hives. Decontamination and treatment is similar to that for jellyfish stings.

SEA LOUSE

Sea Lice are small crustaceans living on the sandy bottom that often bite the hands and feet of unwary swimmers. The sharp bite is painful, and leaves pinpoint hemorrhages. The skin should be scrubbed with soap and water, or dilute hydrogen peroxide, and covered with antibiotic ointment.

FISH HANDLERS DISEASE

When small nicks and cuts on the hands of people cleaning fish and shellfish become infected with the bacterium *Erysipelothrix*, a distinctive skin rash develops. It appears up to a week after exposure as a sharply defined red to violet colored circular area of raised skin surrounding the wound. The involved skin is slightly warm and tender, and the rash generally spreads to the top of the hand and between adjacent fingers.

Treatment with antibiotics (penicillin, cephalixin, or erythromycin) is necessary.

POISONOUS THINGS THAT BITE

BROWN SPIDER BITES

The brown or violin spider, *Loxosceles reclusa*, incorrectly labelled the "brown recluse spider," has received attention as the cause of "necrotic arachnidism." Following the bite of this spider a blister surrounded by an area of intense inflammation about one-half inch in diameter appears. Pain is mild at first but may become quite severe within about eight hours. Over the next ten to fourteen days the blister ruptures and the involved skin turns dark brown or black. Eventually the black, dead tissue sloughs, leaving a crater that heals with scarring.

A few individuals have large skin losses that require grafts to cover the defect. Some children have lost considerable portions of their faces. Such events have attracted great notoriety for this spider, even though much smaller wounds are far more typical.

Bites by *Loxosceles reclusa* are commonly reported (incorrectly) well outside of its habitat, which is limited to the southeastern and south central portion of the United States and ends at the Texas-New Mexico border. However, other *Loxosceles* spiders do live in areas such as California.

Generalized symptoms that may appear within thirty-six hours of the bite include chills and fever, nausea and vomiting, joint pain, and a skin rash or hives. With severe reactions, hemolysis and thrombocytopenia can result in significant anemia and a bleeding tendency. Rare fatalities have occurred, mostly in children who develop a coagulopathy such as disseminated intravascular coagulation (DIC) and renal failure.

Essentially nothing can be done for such bites in a wilderness situation unless appropriate injectable medications are carried. If the person can be hospitalized within less than eight hours, the site of the bite can be surgically excised. Such therapy should be reserved for bites from spiders clearly identifiable as *L. reclusa*, so the spider must be captured (intact if possible) and brought to the hospital to be identified. After eight hours the area involved may be too large to be excised.

Corticosteroids have been recommended but are currently out of favor. Dexamethasone, 4 mg administered intramuscularly every six hours until the reaction starts to subside, and then in tapered doses, is one recommended program. Others include injection of hydrocortisone beneath the bite.

Dapsone 50 to 100 mg twice a day may limit the size of the lesion if given within forty-eight hours. Nothing is very satisfactory or such widely varying therapies would not be recommended.

SCORPION STINGS

Scorpions are found throughout most of the United States, but the species potentially lethal for man, *Centruroides*, are limited to Arizona, New Mexico, Texas, southern California, and northern Mexico. In this area scorpions are a significant problem. Sixty-nine deaths resulted from scorpion stings in Arizona between 1929 and 1954. During the same period, only twenty deaths resulted from poisonous snakebites. With improved medical management of the complications of scorpion stings, no deaths have occurred in Arizona for over twenty years.

Scorpions are eight legged arachnids that range in length from one to eight inches and have a rather plump body, thin tail, and large pinchers. They are found in dry climates under rocks and logs, buried in the sand, in collections of lumber, bricks, or brush, and in the attics, walls, or understructures of houses or deserted buildings. The problems with scorpions in Arizona are clearly related to their tendency to live in the vicinity of human habitation where children are frequently playing.

Stings can be avoided by exercising care when picking up stones, logs, or similar objects under which scorpions hide during the day. Since scorpions are nocturnal, walking barefoot after dark is inadvisable. Shoes and clothing should be shaken vigorously before dressing in the morning, particularly when camping outdoors.

The lethal species of scorpions are often found under loose bark or around old tree stumps. They have a yellow to greenish yellow color and can be distinguished from other species by a small knob-like projection at the base of their stingers. Adults measure three inches in length and three-eighths inch in width. One subspecies has two irregular dark stripes down its back.

The sting of a nonlethal scorpion has been described as similar to that of a wasp or hornet, although usually somewhat more severe, and should be treated in an identical manner. (Scorpion venom is not identical to insect venom, and individuals allergic to insect stings usually are not allergic to scorpion stings.) Lethal scorpion stings are more painful, but fatalities have been limited almost entirely to small children.

Initially the sting of a scorpion of one of the lethal species produces only a pricking sensation and may not be noticed. Nothing can be seen at the site of the sting. (Swelling and red or purple discoloration are indications that the sting has been inflicted by a nonlethal species.) Pain follows in five to sixty minutes and may be quite severe. The sting site is quite sensitive to touch, and is the last part of the body to recover. Tapping the site produces a painful, tingling or burning sensation that travels up the extremity toward the body. (Apparently stings by other species of scorpions can occasionally produce a similar sensation.) Sensitivity may persist as long as ten days, although other symptoms usually disappear within ten hours.

Individuals who have been stung typically are extremely restless and jittery. Young children writhe, jerk, or flail about in a bizarre manner that suggests a convulsion. Their movements are completely involuntary. However, in spite of their constantly moving bodies, the children can talk. Although they appear to be writhing in pain, they usually state that they do not hurt. Convulsions have been described, but the true nature of these events is questionable. Visual disturbances such as roving eye movements or nystagmus are common. Occasionally a child complains that he cannot see, but nothing abnormal can be found when examining his eyes and sight returns spontaneously in a few minutes. Children under six years

of age may develop respiratory problems such as wheezing and stridor, and a few may need assisted respiration.

Persons who have been stung typically have an elevated blood pressure, which may be an important diagnostic sign since hypertension is rare in children. The blood pressure usually returns to normal within four to six hours and becomes life threatening only in infants.

Small children and elderly individuals with preexisting health problems stung by one of the lethal scorpion species should be taken to a hospital. Only a medical facility of that sophistication would have the equipment and supplies, including antivenom, necessary to monitor these individuals and deal with any complications that may arise.

An ice cube applied to the site of the sting may help reduce pain, but no other therapy is possible outside of a hospital. In locations such as the Grand Canyon, where prompt evacuation may not be possible, diazepam can be given to children for control of the purposeless movements.

Antivenom prepared in goats is available in Arizona from the Poisonous Animals Research Laboratory at Arizona State University in Tempe, AZ. Some hospitals in that state keep a supply on hand. The antivenom is given intravenously; reactions are less frequent than are seen with antisera prepared in horses.

Other countries have species of lethal scorpions much more deadly than those in the southwestern United States. Mexico reportedly has had as many as 76,000 scorpion stings resulting in 1,500 deaths in a single year. Persons who have been stung by such scorpions must be treated with antivenom, which is rarely obtainable outside of a hospital, particularly by someone who does not speak the country's language. Death from the stings of such scorpions is usually the result of sudden, very severe high blood pressure. Adrenergic blocking agents such as propranolol may be an effective method for treating such stings and probably should be carried by visitors to the countries where such lethal species of scorpions exist.

ALLERGIC REACTIONS TO INSECT STINGS

Between fifty and one hundred deaths result annually from allergic reactions to *Hymenoptera* stings (bees, wasps, hornets, and fire ants) in the United States, more than the deaths from rabies, large animal bites, poisonous snakes, spiders, and scorpions combined. Approximately one of every two hundred people in the U.S. has experienced a severe reaction to such stings. An individual allergic to insect stings usually experiences milder allergic reactions before having a potentially fatal reaction.

Two types of nonlethal reactions occur: local reactions and systemic reactions. Local reactions are characterized by severe swelling limited to the limb or portion of the limb that is the site of the insect sting. Almost all insect stings are associated with some swelling, but the area of swelling is usually three inches or less in diameter.

With severe local reactions, a major portion of an extremity, such as the entire forearm, is swollen, and may be painful, pruritic, or mildly discolored.

Systemic reactions occur in areas of the body some distance from the site of the sting. Most typical are hives, which may be scattered over much of the body. Generalized itching or reddening of the skin also occur. Persons with more severe reactions may have hypotension and difficulty breathing.

Investigators of insect hypersensitivity reactions have recommended that individuals who have had a systemic reaction to an insect sting undergo skin testing with *Hymenoptera* venoms. If the results of skin tests are inconclusive, more sophisticated measurement of venom specific IgE antibodies by a radioallergosorbent procedure can be carried out.) About half of the

people who have had a systemic reaction and also have a positive skin test would be expected to have a severe, possibly fatal reaction if stung again. Desensitization with purified insect venoms - not whole body extracts - is recommended for these individuals. (In one recent study of children who had experienced an anaphylactic reaction following a sting, only nine percent of subsequent accidental stings led to severe reactions. None of the reactions were more severe than the original reaction, which led to the conclusion that immunotherapy was unnecessary for such individuals.)

Desensitization, or even skin testing, is not recommended for individuals who have large local reactions because these are rarely followed by systemic reactions. However, individuals who have had either type of reaction should have epinephrine available at all times.

The symptoms of anaphylactic shock usually appear five to fifteen minutes after exposure to the allergen. Occasionally an hour may pass before symptoms appear, and very rarely twenty-four hours can elapse, particularly after oral ingestion of an offending substance.

The dominant feature of anaphylactic shock is severe respiratory distress that appears and progresses rapidly. Edema of the tissues of the upper air passages, particularly the larynx where the airway is already narrowed by the vocal chords, can produce lethal respiratory obstruction. Bronchospasm also produces respiratory obstruction.

The skin is the next most common organ involved by anaphylaxis. Hives may be present and are widely distributed. Angioedema or localized swelling may occur on an extremity or around the eyes or mouth.

Nausea, vomiting, abdominal pain, and diarrhea may reflect involvement of the gastrointestinal system. Involvement of the eyes and nose causes changes that resemble a sudden, severe attack of hay fever. The eyes are swollen and red and the flow of tears is greatly increased. A red, swollen mucosa and mucoid discharge plug the nose. Rarely, involvement of the cardiovascular system can result in shock or a cardiac arrhythmia, which can be fatal.

TREATMENT

Therapy for anaphylactic shock, a true medical emergency for which minutes may make a difference between success and failure, consists of the injection of 0.3 cc of a 1: 1,000 aqueous solution of epinephrine (adrenaline). If the reaction is caught early when only moderate respiratory distress is present, the adrenaline should be injected subcutaneously. If the patient is in severe respiratory difficulty, the epinephrine should be injected intramuscularly where it is absorbed more rapidly.

Epinephrine in 1:1,000 dilutions is available in several forms in the United States. EpiPen® is a preloaded syringe that can be injected almost instantaneously with only one-hand. After the cover is stripped away, the needle can be jabbed into the thigh or any other convenient location, through clothing if necessary. Although the ability to make an injection with one hand would be useful for a few individuals such as rock climbers, such speed is rarely needed, particularly after the first injection. Although the syringe contains 2.0 cc of solution, only a single 0.3 cc dose can be delivered. (Rock climbers and some other wilderness users who have systemic allergic reactions to insect stings have a unique risk of fatal reactions because they are subject to stings in locations, such as rock walls, where they can not be immediately treated by others and only with difficulty by themselves.)

Ana-Kit® contains a syringe loaded with 1.0 cc of epinephrine that can deliver two 0.3 cc injections, but not as rapidly as the EpiPen. Epinephrine is made by several pharmaceutical manufactures; it is available from Wyeth-Ayerst in Tubex®, a preloaded syringe that contains 1.0 cc of solution, essentially all of which can be used.

Some inhalers for asthmatics, including some over-the-counter preparations, contain epinephrine. Such medications are not recommended for anaphylactic shock because the response to them is inconsistent. Although they are cheaper than the injectable preparations and undoubtedly better than nothing, they are not totally reliable for the treatment of severe anaphylactic reactions - the type that most needs reliable therapy.

Injections of epinephrine should be repeated every twelve to fifteen minutes if needed. In fact, patients must be closely watched because many individuals relapse in fifteen to twenty minutes as the epinephrine wears off.

Respiratory obstruction due to laryngeal edema usually responds to epinephrine but may require tracheostomy.

Other steps can help a patient with anaphylaxis. Placing tourniquets above the injection site and injecting epinephrine around the site help slow absorption. Oxygen should be administered during the period of respiratory difficulty regardless of the altitude. Other forms of treatment for shock should be instituted; appropriate care should be given if the patient is unconscious. Antihistamines may help control the itching of hives and other symptoms, but should be administered only after anaphylaxis has been controlled.

SAMPLE MEDICAL LIST from s/v Sonrisa

Sonrisa returned to Mexico in November, 2005. The following list of the medicines was carried on sailing vessel Sonrisa when she left San Diego, CA for French Polynesia in April of 2001. The list originated from one that was found in John Neal's 1994 cruising guide and expanded from there after our cruising Mexican water for 2 years. A notebook was created with a copies of all the prescriptions this type of medicine could be justified to authorities. Needles for injections, chewable Demerol, and things for performing surgery which you should ask your doctor about. You will need prescriptions for these too. Every medical list should include a catheter regardless of your age.

Sonrisa carried 5 boxes of medicine. An Excel list was made of each medicine, its expiration date, how it was to be used, and its location in a medical box. The following medical were on board:

Merck Manual

Where There is No Doctor by David Werner

Where There is no Dentist by Murray

First Aid Afloat by Peter F Eastman, M. D

The Medical Clinics in the Marqueses are free and have French trained doctors on duty. In Nuka Hiva, Marqueses the tablets for Filariasis (Elephantiasis) can be obtained free of charge at the clinic. In Tahiti there is a medical clinic that is not free, but has excellent French doctors that speak English if needed. Pango Pango, American Samoa has an American hospital. In New Zealand, there are many doctors; however, there you do not need a medical degree to be a doctor. If you have dental problems, we do not recommend Bora Bora. Boar Bora dentists charge outrageous fees and most of the dentists do not speak English nor will they try to speak English. The rest of the Society Islands are more reasonable and much more helpful.

ANTISEPTICS AND SKIN PREPARATIONS

Anti-Itch Cream

Calamine Lotion

Carbamazine - prevention of Filariasis

Desenex...Foot Powder

- Epsom salts. Drawing agent for compresses & soaking of infected wounds. May also be used as a laxative.
- Elocon 0.1% need – used for ear itch
- Hydrocortisone Cream
- Diprolene AF Cream (0.05%) – augmented betamethasone dipropionat – for severe rash
- Hydrogen Peroxide - or cleaning coral cuts
- Neosporin Ointment
- Triple Antibiotic Ointment
- Povidone–Iodine 10% (hospital antiseptic solution - for cuts, burns, scrapes, minor skin wounds)
- Surgical Cleansing & handwash lotion (i.e. Hibiclens. PhisoHex) PhisoHex requires a perscription
- Sting Kill with Anesthetic with Benzocaine - external anesthetic for insect bites
- Solarcaine – sun burn
- Sulfadiazine Silver Cream 1 % - for burns
- Benzoin Tincture When painted on the skin promotes adhesion of steristrips & dressings

ANTIBIOTICS

- Amoxicillin 250 mg caps - middle ear infection, Salmonella infection, appendicitis
- Cephalosporin 250 mg caps - deep cut infection, urinary track infection
- Ciprofloxacin - Urinary Infection
- Cipro
- Cortisporin Ophthalmic (Neomycin and Polymyxin Sulfates and Hydrocortisone) drops or ointment - straph, ear infections
- Cortisporin Optic Drops – eyes
- Erythromycin 250 mg caps. Boils;
- Diflucan - Fungus Infection
- Macrobid or Nitrofurantoin-Marco 100 mg for bladder infection

ANTIFUNGAL

- | | |
|--|--|
| - Acidophilus capsules or powder - refrigerate – diarrhea | - Lotrimin Cream, Gyne-lotrimin cream at least 1 % |
| - Boric acid powder – rash | - Nystatin (Mycostatin) cream for rash |
| - Burrows solution or Domeboro | - Tinver Lotion - Jungle Rot |
| - Selenium Sulfate 2.5% (Selsun 2.5% shampoo) - Jungle Rot | - Tinactin Cream - for fungus infection |

ANTI-HISTAMINES

- | | |
|---------------------------------------|--|
| - Lidex Cream - for rash | - Epinephrine 1:1000 1cc amp - for emergency treatment of severe allergic reactions & cardiac arrest |
| - Benadryl 25 mg tablets | - Travist (antihistamines) 4/01 |
| - Diphenhydramine | - Travist D cap 11/01 |
| - Chlor-Trimeton Allergy tablets 2/01 | |

ANTI-MOTION SICKNES

- Compazine (Prochlorperazine) 25 mg - suppositories
- Meclizine
- Scopolamine skin patches
- Stugeron 75 mg

GASTROINTESTINAL PREPARATIONS

- | | |
|--|---|
| <ul style="list-style-type: none"> - Baking Soda - Activated charcoal tabs. Absorbs toxins. - Dulcolax - Gaviscon - 10 Glucose tablets - Enema (Fleets) - Kaopectate for diarrhea - several bottles - Hemorrhoidal cream 2/ 02 | <ul style="list-style-type: none"> - Imodium - IPECAC to induce vomiting of non-corrosive poisons - 1 fl oz - Senekot. Mild vegetable laxative. – 1 tablet - Stool Softeners - Correctol - Maalox, 12 fl oz |
|--|---|

MISCELLANEOUS

- | | |
|--|---|
| <ul style="list-style-type: none"> _Eye Droppers - 3 - Calcium - Chitosan 90 cap - Clearasil 4/01 - First Aid Tape - Insect Repellent - Smoke coils – for mosquitoes - Papaya extract or Adolph's Meat tenderizer - for jelly fish stings - Ammonia - for stings - SBR Lipocream | <ul style="list-style-type: none"> - Sun Block - 2 Neutrogena Sun block 17 - 2 bottles Shade - Multi- Vitamins with minerals - Vitamin C - Vitamin E - Vitamin A - iron tablets - Rubbing alcohol - Melatonin - Cat or mouse traps |
|--|---|

OPTIONAL DRUGS

- | | |
|---|---|
| <ul style="list-style-type: none"> - Ibuprofen 200 mg (Advil) - Ear Drops - Pyrantel Pamoate - for intestinal worms - Diethylcarbamazine (Carbamazine) - Filariasis - obtained in tropical areas - Chloroquine Phosphate (Aralen phosphate) - antimalarial treatment | <ul style="list-style-type: none"> - Anusol - Hemorrhoidal Cream 1 oz - Larium (malaria) 250 mg - Vaseline - Vermox 100mg mg - worms - Xylocaine 1% for Suturing |
|---|---|

PAIN RELIEF

- | | |
|---|---|
| <ul style="list-style-type: none"> - Advil - Aleve - Aspirin | <ul style="list-style-type: none"> - Darvoset or Propoxyphene for pain #90 - Demerol 50 mg tablets - Pain relief - Tylenol |
|---|---|

- No-Aspirin 100 tablets Pain reliever
- Tylenol with Codeine
- Vicodin

PRESCRIPTIONS

- Eye drops (Fluorometholone Ophthalmic Suspension, USP)
- Diprolene AF 0.05 - small tube
- Ambien – 5 mg for sleep
- Lipitor - cholesterol
- Prilosec 20 mg
- Predisone - 1/2 bottle for allergic reaction
- Selenium Sulfide Lotion 120cc - 2.5%
- Valium 90 cap 5 mg

RECOMMENDED MEDICAL SUPPLIES

- Balloon Catheter
- Eye Patch
- Alcohol prep packets
- Splinter tweezers
- Adhesive bandages (Band Aids)
- 10 small adhesive pads 2"x2"
- Cold Sore Medicine
- Corn Pads
- Dental Floss
- Ear Plus
- Eye Pads - sterile
- Surgical adhesive tape, several varieties of types and widths
- ...1/2 roll 1 in plastic
- Bandages: 2" X 3" – adhesive Tape, gaze: 2", 3" and 4" crepe; 4" and 5" elastic (ACE) bandage
- Hand Wrap for smashed hands
- Band aids
- Enema - Reusable
- Oral Swab - 1
- Sterile dressings: 2"x2"; 4"x4"; large battle dress
- Sterile cotton absorbent balls
- Gauze pads: 2"x2"; 4"x4", 2"x2", 2" x 2", 2 in roll
- Gloves
- Paper tape - hypo - allergenic
- ...1 " - 2 rolls
- ...1/2" roll
- Splints, finger and wire mesh
- Steristrips, instead of sutures 1/4 by 4 in
- Syringes; 3cc, 5cc 10cc
- Hypodermic needles
- Thermometer
- Thermometer covers
- Triangular bandage
- Surgical scrub brush
- Forceps
- Sponges 6 in by 6 3/4
- Sterile Alcohol Swabs
- Sterile scalpel blades
- Safety Pins
- Chemical cold pack
- Douche bottle reusable
- TEETH AND GUM
- Glyoxide - gum infections
- Dentemp – Loose Caps and lost fillings
- 2 Dental gum plaque cleaners
- Dental mirror

Dental Addendum – 2009

It's a mistake to assume that all is well just because you have no discomfort. Something as simple as an embedded popcorn kernel can seriously affect your overall health.

Soft tissue problems: Periodontal disease is a critical problem – if you get blood on your floss or toothbrush, you probably have it. One treatment is 3% shelf peroxide (flavor w/ vial of peppermint oil). It's also good for wounds (kills bacteria – if not healing, hp will foam up at sign of infection). Hydrogen peroxide (“hp”) is an unstable agent – keep in a dark place.

Mix equal quantities hp & glycerin in a shot glass – will deliver w/toothbrush in between teeth & gums – glycerin is a means of getting hp on the soft tissues of your gums

Use hydrogen peroxide this way 5–6 times per week. If you have sensitive/irritated gums, don't irritate further with spicy food or vinegar. If you don't get foaming, you don't have problem (pull lip back with a spoon to see).

Use floss or toothpick to get food etc. out of gums or teeth to prevent bacteria infections.

Canker sores – herpes virus (different from genital variety) – use hp and glycerin with Q-tip (canker sore is like an ulcer).

Temporary repair kit for loose crown – zinc oxide (mix liquid powder kit up and put crown back in the correct orientation. DO NOT USE CRAZY/SUPER-GLUE (toxic and sets too fast).

To make temporary kit for any “holes that hurt” (cavities, broken fillings/crowns etc.), get cloves (excellent source of anesthetic), chew up and make a paste, then cover in place with canning wax (paraffin). Replace frequently until numbness of clove lowers pain. Can use peppermint oil or bubble gum for better taste (although the latter disintegrates over time).

Paraffin is totally inert and safe, but you can use anything sticky. Numbing effect of cloves will make life tolerable (settles the nerve endings down). Also take pain meds with you.

Abscesses can be life threatening (especially in upper teeth). If resultant swelling threatens to close your eye, the situation is serious. Must boats have a supply of appropriate antibiotics on board. Penicillin is best 500 mg for adult dose; take for 20–30 days; have 50 or so on hand. Keflex for those allergic to penicillin (erythromycin can hurt your stomach).

Have 100 tablets on board.

If you have an infection in your mouth, check eyes. Use toothpick or pin to draw out infection (spit out, don't swallow). Start antibiotics and you'll get relieve within 24 hours.

Usually, you get fever, redness, raised temperature and pain in location

For women, bring antibiotics for yeast infection

Abscesses (in mouth, etc.) should be lanced and drained; blisters (from skin irritation) should NOT be lanced.

Have tube of tribiotic bacitracin and Neosporin available for normal use.

Chapter 8 – Flags

Chapter Overview

- Flag Etiquette – from Noonsite
- Flags of the South Pacific
- Anne on Sunseeker- maker of flags in PV
- Text from Chapmans- Flag Etiquette

Flag Etiquette

From Jimmy Cornell's book "World Cruising Handbook" 2001

Although not all countries insist on it, in theory the Q flag should be flown as soon as the yacht has entered territorial waters to signal the intention of requesting pratique. This should be done when entering the 12 mile limit. In this way, one cannot be accused of trying to slip in unnoticed and in fact in some countries yachts have got into trouble for not hoisting the Q flag until they were in port. Also to avoid any misunderstandings, it is advisable to try to contact the authorities on VHF radio, especially in those countries which do not readily welcome yachts.

The courtesy flag should also be flown once the boat enters a nation's territorial waters. The flag should be flown from the starboard spreader in a position above any other flag. The courtesy flag should be in a good state and of reasonable size as some officials take offence at yachts that fly a torn or tiny flag. In some dependencies or autonomous regions, such as the Canaries, Azores, Tahiti Nui (Formerly French Polynesia) or Corsica, it is appreciated if the regional flag is flown together, but below, that of the metropolitan power. Burgees, house flags and courtesy flags as well as ensigns should be lowered at sunset or 2100, whichever is earlier, and hoisted at 0800 in summer and 0900 in winter. It is particularly important to observe this in Scandinavian countries, where people are extremely flag conscious.

The ship should be dressed overall on national days in countries visited. Ships should only be dressed when at anchor or in harbour. Although not essential, and many people are not even aware of it, there is a correct order in which to fly the code signals if the yacht is dressed from bow to stern. This order has been designed to give an interesting variety of both colour and shapes. The correct order, starting from the bow, is: E Q p3 G p8 Z p4 W p6 P p1 1 CODE T Y B X 1st H 3rd D F 2nd U A O M R p2 J p0 N p9 K p7 V p5 L C S. If the vessel is two masted, the line between the two masts starts with Y and ends with O.

Possible Flags to order for the South Pacific Islands

Country

Australia
Cook Islands
Ecuador

Fiji
France
Galapagos
Kiribati
Marshall Is.
Nauru
New Zealand
Niue
Palau
Papa New Guinea
Solomon Is.
Tonga
Tuvalu
U.S.
Vanuatu
Western Samoa
Quarantine (yellow)

The back cover of the book “Landfalls in Paradise” by Earl Hinz has illustrations of each flag.

Anne aboard s/v Sunseeker in PV can make just about any flag needed at a great price. Call her on channel 22, the Banderas Bay Net, and ask for Sunseeker Anne.

Text from Chapman's

The following text was scanned and edited from the 61th addition of "Chapman Piloting Seamanship & Small Boat Handling", Elbert S. Maloney, Hearst Marine Books, New York, 1995.

Graphics Restrictions

Note, flags, ensigns, pennants, or burgee may not be drawn to exact scale. In many cases, it was necessary to compromise their scale in order to meet the restrictions of the media.

United States Ensign

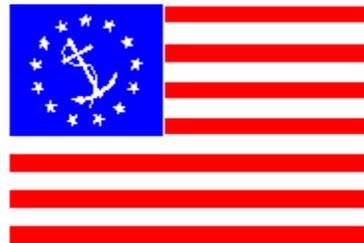


Any citizen of any state may fly the flag of that state unless doing so is specifically prohibited. It should be flown at the main masthead in place of any private, yacht club, or officer's flag. On a mastless boat, a state flag flies from either the bow or radio antenna. The U.S. ensign is proper for all U.S. yachts, without reservation. This is "Old Glory," with 50 stars and 13 stripes. All boats, when at anchor, fly it from the stern staff, if so equipped, only while occupied. It is flown from the stern staff of powerboats underway on inland waters. If the powerboat has a mast and gaff, the proper display is at the gaff. On a sportsfisherman, where a stern staff would be in the way of the action, the practice is to fly the ensign from a halyard rigged just behind the tuna tower.

On Marconi-rigged sailboats under sail alone, the practice for many years had been to fly the ensign from the leech of the aftermost sail, approximately 2/3 the length of the leech above the clew. This puts it in about the same position it would occupy if the boat were gaff-rigged, and on gaff-rigged sailboats it is proper to fly the ensign from the peak of the aftermost gaff.

The advent of the modern high-aspect-ratio rig, with the boom end well inboard of the stern, has made it possible to fly the ensign from the stern staff of a sailboat underway, and this is now an accepted practice. However, the ensign should never be displayed while the boat is racing. Under power alone, or at anchor or made fast, the ensign should be flown from the stern staff of all sailboats. If an overhanging boom requires that the staff be off center, it should preferably be on the starboard side.

United States Yacht Ensign



This is the 13-star "Betsy Ross" flag, with a fouled anchor in the union. Originally restricted to documented vessels of a specific classification, it is now flown on recreational boats of all types and sizes instead of the National Flag. Many yacht clubs now follow bylaws requiring that the Yacht ensign be flown regardless of boat size or documentation status. Whenever a boat is taken into international or foreign waters, however, the 50-star U.S. ensign is the proper flag to display and the yacht ensign is not to be displayed. . It's better form for U. S. vessels to fly the U. S. flag (the "stars and stripes" with a full complement of 50 stars) at the stern or gaff or leech, rather than a Yacht Ensign. If you want to fly a Yacht or USPS Ensign, do so from the port spreader on a sailboat.

No flag-state, heritage, Confederate, pirate, gag, or otherwise-except for the vessel's national flag, should EVER fly from the stem of your - vessel. This is considered a place of honor, for the vessel's national flag and no other.

Yacht Club Burgee

Generally triangular in shape although sometimes swallow-tailed, the yacht club burgee may be flown by day only, or day and night, as determined by the individual yacht club. It is flown from the bow staff of mastless and single-masted motorboats, at the foremost masthead of vessels with two or more masts, and the main masthead of ketches and yawls. The burgee may be flown while underway (but not racing) and at anchor. You may substitute the owner's private signal for the burgee on single-masted yachts without bow staff, when the boat is underway.

USPS Squadron Burgee

A distinguishing USPS Squadron burgee which has been authorized by USPS may be flown in lieu of a [club burgee](#) and from the same positions. This burgee may be flown by day only, or both day and night.

Owner's Private Signal

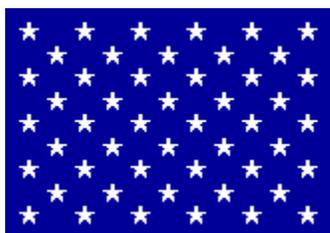
This is generally swallow-tailed in shape, but may be rectangular or pennant-shaped. It is flown from the masthead of a single-masted motorboat or sailboat, or from the aftermost mast of motor or sailing vessels with two or more masts. It may be flown by day only, or day and night. A mastless motorboat may fly this signal from the bow staff in place of a club burgee.

Officer Flags

Flags designating yacht club or USPS officers are rectangular in shape, blue (with white design) for senior officers; red for next lower in rank; and white (with blue design) for lower ranks. Other officer flags may be swallow-tailed or triangular in shape.

An officer flag is flown in place of the [owner's private signal](#) on all rigs of motor and sailing vessels except single-masted sailboats, when it is flown in place of the club burgee at the masthead. On smaller motor boats without a signal mast, a USPS officer flag may be flown from a radio antenna, preferably to starboard, either singly or beneath the USPS ensign.

Union Jack



A rectangular blue flag with 50 stars—the upper quadrant of the National Ensign nearest the hoist, properly referred to as a *canton*. It may be flown *only* at the jack staff on sailing yachts or the jack staff of motor yachts with more than one mast, *only* while not underway on Sundays and national holidays. USPS does not encourage the use of the Union Jack in association with recreational boating.

Size of Flags

Although flags come in a fixed, standardized series of sizes, there are guidelines which will help in selecting the proper size for your boat.

Keeping in mind that flags are more often too small than too large, use the rules given below, and round upward to the nearest *larger* standard size.

The flag at the stern of your boat-U.S. ensign, yacht ensign, or USPS ensign-should be one inch on the fly for each foot of overall length. The hoist will normally be two-thirds of the fly, but some flags such as the USCG Auxiliary ensign have different proportions.

Other flags such as club burgees, officer flags, and private signals for use on sailboats should be approximately 1/2 inch on the fly for each foot of the highest mast above the water. For flying on powerboats, these flags should be roughly 5/8 inch on the fly for each foot of overall length. The shape and proportions of pennants and burgees will be prescribed by the organization to which they relate. A union jack should be the same size as the corresponding portion of the national ensign.

Christine Davis differs with a somewhat more practical approach. She suggest that you let your eye be your guide. Generally, yachts up to 50' in length look properly "dressed" with a 16" x 24" ensign and 12" x 18" courtesy flags. Size up one step for every 25-or-so additional feet in length. If you prefer the look of larger flags, go ahead-just make sure that there is a clear 360-degree fly from your halyards. Otherwise, your flags will soon be in tatters.

Raising and Lowering Flags

"Colors are made" each morning at 0800; as mentioned, at yacht club and similar organization docks or anchorages, this may be signaled by a morning gun. The national ensign or yacht ensign is hoisted at the stern (or set in place on its staff). This is followed by the USPS ensign at the starboard spreader (if not already flying on a day-and-night basis) provided the skipper is an active member of USPS. Then comes the club burgee or Squadron burgee at the bow, and the private signal at the masthead. (An officer flag, if flown in place of a private signal, would be flown continuously.)

If the boat bears a valid USCG Auxiliary Facility decal, it would be flying the Auxiliary ensign at the masthead day and night. The USCG Auxiliary officers pennant or burgee may be flown day or night. On smaller craft, the same sequence should be followed, with the flags on their staff being set in the appropriate locations.

At sunset, colors not properly flown on a day-and-night basis should be lowered in reverse sequence, the ensign at the stern always being the last to be secured.

Dressing Ship

On national holidays, at regattas, and on other special occasions, yachts often "dress ship" with International Code signal flags. The ship is dressed at 0800, and remains so dressed until evening colors (while at anchor only, except for a vessel's maiden and final voyages, and participation in a marine parade or other unique situation).

In dressing ship, the yacht ensign is hoisted at the stern staff, and the Union Jack may be displayed at the jack (bow) staff. A rainbow of flags of the International Code is arranged, reaching from the water line forward to the water line aft, by way of the bowsprit end (or stem if there's no bowsprit) and the masthead(s). Flags and pennants are bent on alternately, rather than in any indiscriminate manner. Since there are twice as many letter flags as numeral pennants, it is good practice, as in the Navy, to follow a sequence of two flags, one pennant, two flags, one pennant, throughout. The sequence recommended here provides a harmonious color pattern throughout:

1. Dress ship at 0800 and keep dress until nightfall.
2. Keep the dressed ship moored, except for its maiden or final voyages or for participation in parades.
3. Hoist the Ensign at the stern. Display the Union Jack (if desired) at the bow.
4. Hoist a rainbow of International Code Flags from the waterline forward to the waterline aft from stem (or bowsprit) to the masthead(s).
5. Bend on flags and pennants alternately. Since there are twice as many letter as numeral pennants, it is regarded as good practice to follow the following sequence:

a. Two flags, one pennant, two flags, one pennant, and so on b. A popular example with an appealing color pattern is (from .forward): AB2, UJ1, KE3, GH6, IV5, FL4, DM7, PO Third Repeater, RN First Repeater, ST Zero, CX9, WQ8, ZY Second Repeater. This sequence is shown on the tallship [Gloria](#) (137K).

Honoring Other National Flags

As a matter of courtesy, it is proper to fly the flag of a foreign nation on your boat when you enter and operate on its waters. There are only a limited number of positions from which flags may be displayed, and consequently when a flag of another nation is flown, it usually must displace one of the flags commonly displayed in home waters. It is not hoisted until clearance has been completed and the yellow "Q" flag has been removed, and the vessel has been granted [pratique](#) by the appropriate authorities.

The following are general guidelines to follow regarding courtesy flags:

- Generally, the vessel's national flag is flown from the stem (or leach) when a courtesy flag displaces it.
- On a mastless powerboat, the courtesy flag of another nation replaces any flag that is normally flown at the bow of the boat.
- When a motorboat has a mast with spreaders, the courtesy flag is flown at the starboard spreader.
- On a two-masted motorboat, the courtesy flag displaces any flag normally flown at the forward starboard spreader.
- On a sailboat, the courtesy flag is flown at the boat's starboard spreader, whether the United States ensign is at the stern staff, or flown from the leech. If there is more than one mast, the courtesy flag is flown from the starboard spreader of the forward mast.

Rule No. 1 is that there are no real international etiquette rules. Customs observed in various foreign waters differ from each other. We've seen cases where not flying or flying a courtesy flag improperly causes some awkward moments; you may be regarded as impolite, but nothing more. In others, it's local law to fly the flag. Officials can—and do—impound passports or assess fines until the proper flag—which, of course, can only be purchased locally at great expense—is flying on board. If in doubt, inquire of other cruisers and observe other craft from your country for guidance.

Courtesy flags are usually Civil *Ensigns*—*not* the national flag of the country. Not every country has a civil ensign. However, most former British colonies do; it is usually the red variant of the flag. It's considered a horrible breach of etiquette to fly the blue national flag. So, if the flag that we catalog doesn't look exactly like the national flag that you remember, it's probably a civil ensign.

Although these points serve as protocol in most waters, keep in mind that customs observed in various foreign waters differ from one another; in case of doubt, inquire locally or observe other craft from your country.

As noted previously, U.S. vessels while in international or foreign waters must fly the U.S. ensign (50-star flag) at the stern or gaff or leech, rather than the USPS ensign or the yacht ensign. When the starboard spreader is used for the "courtesy ensign" of the foreign country, the USPS ensign or similar flag may be flown from the port spreader; if the vessel has multiple flag halyards on the starboard spreader, the USPS ensign is flown there, inboard from the courtesy ensign.

The U.S. ensign, club burgee, officer flag, and private signal are flown as in home waters. Don't fly a foreign courtesy ensign after you have returned to U.S. waters. Although this may show that you've "been there," it is *not* proper flag etiquette.

Half-Masting Flags

A flag is flown at half-mast (or half-staff) in respect for a deceased person. Although there are no laws governing the half-masting of flags on private vessels, or at private homes and clubs, most citizens follow the flag display customs that are used on U.S. Government buildings and ships.

The only authorities who can direct that the U.S. ensign be flown at half-mast are the President and the governor of a state, territory or possession. The duration varies from a day or so up to 30 days, determined by the deceased person's position. It is not correct for a yacht club commodore, or official of a similar organization, to order the U.S. ensign to be flown at half-mast to honor a deceased member -- only the burgee or organization flag may be half-masted. On Memorial Day, the U.S. flag is flown at half-mast until 1220, the time of the final gun of the traditional 21-gun salute commencing at noon.

On a simple flagstaff-as at the stern of a vessel or a flagpole ashore-the "half-mast" position is approximately three-fourths the way up to the top. If the flagpole has a yardarm, or yardarm and gaff, the half-mast position is that which is level with the yardarm.

When the U.S. flag is displayed at half-mast on a vessel, other flags remain at their normal position. When it is half-masted ashore, fly only a private signal or club burgee at masthead of a gaff-rigged mast with it.

When the U.S. ensign is to be flown at half-mast, it should be hoisted fully and smartly, then lowered ceremoniously to the half-mast position. Before lowering, it is again raised to full height and lowered from there.

Some yacht clubs follow the practice of flying the burgee at half-mast for a period of mourning on the death of a club member. A private signal may be flown at half-mast on the death of the owner of that vessel.

2009 Update

Recent information received regarding French Polynesia - they have their own flag and while officially you should fly the French tricolor the locals appreciate seeing their own flag above the French flag.

Also, the Galapagos Islands have their own flag and appreciate seeing it with the Equadorian flag.

There are a number of flags that once were used on large yachts with professional crews (such as owner absent, cocktail, meal, etc.). Others are still common:

1. Diving Flags. There are two flags flown by diving operations: a red flag with a single diagonal stripe of white and International Code Flag "A". It is generally no proper to fly dive flags on shore.
2. Quarantine Flag. International Code Flag "Q" is flown when entering a foreign port (except Canada and a few others) or when returning to a U. S. port from a foreign cruise. It signals to customs and immigration officials that you request clearance. Take it down and replace it with a courtesy flag after formalities are complete.
3. Union Jack. A rectangular blue flag with 50 stars, the Union Jack may be flown as follows
 - a. Flying only at the jack staff--the bow staff on modern craft
 - b. Flying only during the day
 - b. Flying only when moored
 - c. Flying only on Sundays, national holidays, or when dressing shipDressing

Chapter 9 – Pet Information

Chapter Overview

- Cook Islands
- Tonga
- New Zealand
- Hawaii
- First Aid for Pets

This list is the results of my research in January of 2006 going to the South Pacific with a cat. We plan to keep our cat aboard at all times. When we return to the United States, we will import our cat. I copied requirements from Australia and New Zealand. I am working on French Polynesia, Cook Islands, Fiji, Tonga, Niue, Western & American Samoas, New Caldonia. I will post info as I receive it.

Chris Mellor
S/V Sensei

Cook Islands-

Our requirement for pets on-board yachts are; you can bring in your pets cat/dog (s) but they must remain onboard the vessel for the duration of your stay in the Cook Islands. When you come in port our quarantine staff will advise you on all requirements necessary for your pet. For more information pls do not hesitate to contact us on our email: quaranti@oyster.net.ck

Pavai Taramai
Quarantine officer

Tonga Islands-

As long as your cat are totally kept aboard and never leave the yacht or ship anytime and landed in any area or ground of Tonga, your cat will not follow the post quarantine procedures. However, we need to achieve the following information of your cat:

Colour
Age
Sex
The picture photo of the cat
The name of Yacht or ship
Expected date of arrival and departing Tonga.

Thankyou and we need to cooperate with you.

Fehi Moala.

"To'ifalefehi Moala" <vet@kallianet.to>

New Zealand -

To get a nice overview of costs and procedures in New Zealand click on this link:

<http://www.emigratenz.org/moving-pets-to-new-zealand.html>

Copied from: <http://www.biosecurity.govt.nz/imports/animals/standards/domaniic.spe.htm>

Import Health Standard for the Importation of Dogs and Cats into New Zealand on yachts from Specified Countries

Pursuant to Section 22 of the Biosecurity Act 1993

Dated: 26 October 2005

This document is also available in PDF format: [ [domyacic.spe.pdf](#) 164 k]

USER GUIDE

The information in MAF animal and animal product Import Health Standards is presented in numerically ordered sections with descriptive titles. Sections are grouped into one of four parts, designated alphabetically.

PART A: GENERAL INFORMATION

1 Import Health Standard

1.1 Pursuant to section 22 of the Biosecurity Act 1993, this document is the Import Health Standard for the importation of cats and dogs into New Zealand on yachts from specified countries.

1.2 Dogs and cats that are imported directly from Australia which are resident in Australia and are under no quarantine restrictions will be imported under the Import Health Standard for the importation of dogs and cats on yachts from Australia.

1.3 If no biosecurity clearance has been obtained while in Australia, then the Import Health Standard for dogs and cats on yachts from specified countries will apply.

2 Review of Import Health Standards

2.1 This Import Health Standard may be reviewed, amended or revoked if there are changes in New Zealand's import policy or the animal health status of the originating country, or for any other lawful reason, at the discretion of the Director Pre-Clearance, Biosecurity New Zealand.

3 Important Information

3.1 Importers of dogs and cats on yachts from specified countries must obtain an import permit prior to arrival in New Zealand. Dogs and cats without an import permit will not be eligible for biosecurity clearance, the dog will have to be reshipped, destroyed or detained in quarantine.

3.2 The following options are available when arriving in New Zealand:

EITHER

3.2.1 Quarantined in a MAF approved transitional facility for a minimum period of 30 days. The animal will undergo various tests and treatments in the transitional facility. If the results are to the satisfaction

of the Director Pre-Clearance Biosecurity New Zealand and all the conditions of this Import Health Standard are met, then biosecurity clearance will be obtained. Once the animal is in quarantine the yacht will be able to move between ports in New Zealand. When the animal obtains biosecurity clearance the animal will be free of from all biosecurity restrictions.

OR

3.2.2 Quarantine in a MAF approved transitional facility for the entire period until the vessel departs New Zealand. No tests will be done but the animal will be treated for endoparasites and ectoparasites. The animal will not be able to obtain biosecurity clearance.

OR

3.2.3 Bonding aboard the yacht. The animal must not leave the yacht. No tests will be done but the animal will be treated for ectoparasites and endoparasites. The animal will not obtain biosecurity clearance. The yacht is to remain berthed at the port of arrival, for the entire duration of the yacht's visit to New Zealand. [See Appendix 1].

3.3 Before departing the country of origin, importers may choose to have their animal tested for the diseases listed in section 12.

NOTE: These results may inform the importer that the animal is already infected with one of the listed diseases, and will not be eligible for importation. The decisions made by the Director Pre-Clearance MAF, about the importation of the animal into New Zealand, however, will depend on the results of the tests undertaken in post arrival quarantine and not those taken before departing the county of origin.

3.4 To protect cats and dogs once they enter New Zealand, all animals entering quarantine from yachts should have a current vaccination status against:

3.4.1 cats: feline panleukopenia [enteritis], feline rhinotracheitis and feline calicivirus

3.4.2 dogs: canine distemper, infectious canine hepatitis, canine parvovirus, canine parainfluenza and Bordetella bronchiseptica [kennel cough].

4 Definition of Terms

Berth

To moor or place a yacht in a suitable position.

Biosecurity direction

Direction or authorisation given by an Inspector for uncleared goods to proceed to a transitional facility.

Biosecurity clearance

As defined by the Biosecurity Act 1993.

Biosecurity Standards Group Manager

The Biosecurity Standards Group Manager, Biosecurity New Zealand, Ministry of Agriculture and Forestry, or any person who for the time being may lawfully exercise and perform the power and functions of the Biosecurity Standards Group Manager

Equivalence

Acceptance by the Biosecurity Standards Group Manager that the circumstances relating to the importation of a consignment are such that the health status of the consignment is equivalent to the health status of a consignment that complies with the requirements of the import health standard.

New Zealand Inspector

As defined by the Biosecurity Act 1993.

MAF

The New Zealand Ministry of Agriculture and Forestry.

Transitional facility

As defined by the Biosecurity Act 1993.

Official Veterinarian

A civil service veterinarian or a specially appointed veterinarian, as authorised by the Veterinary Administration of the country.

Accredited Veterinarian

A veterinarian accredited to provide export certification on behalf of the Government Veterinary Service.

Veterinary Officer

A registered veterinarian who is an inspector under the Biosecurity Act employed either by MAF or by a supplier contracted to provide services to MAF.

Permit to import

A permit issued by the Director General of MAF pursuant to section 22 1[A] of the Biosecurity Act 1993 upon an importer's demonstration that certain requirements of the import health standard have been met in advance of an importation being made, such that a transitional facility is available to accept the consignment/s. The procedure for application and the information required for a permit to import are detailed within the import health standard.

Yacht

A pleasure vessel not plying the seas for hire, reward or commercial interests.

OIE Code

The Office International des Epizooties *Terrestrial Animal Health Code*.

PART B: IMPORTATION PROCEDURE

5 Permit to Import

5.1 A permit to import is required for the importation of dogs and cats into New Zealand on yachts. Application must be made in writing, at least 30 days prior to the proposed date of importation.

5.2 Applications forms can be obtained from:

Animal Imports, Pre Clearance Directorate, Biosecurity New Zealand Ministry of Agriculture and Forestry [MAF], P O Box 2526 Wellington

They are also available on the internet at:

<http://www.biosecurity.govt.nz/imports/animals/forms/cats-dogs-quarantine.pdf>

5.3 The importer must supply the following information:

5.3.1 name and address of the owner

5.3.2 identification [name and microchip number], breed, age and sex of the animal to be imported

5.3.3 a letter from the animal's veterinarian stating the date that blood was sampled for rabies and sent to an official laboratory approved by the government veterinary authorities of the exporting country

NOTE: The date of importation shall be at least 6 months after the date of blood sampling noted in the veterinarian's letter.

5.3.4 a laboratory result form for the neutralising antibody titration test for rabies, stating that a serum sample from the animal [identified by the microchip transponder number] had at least 0.5 IU/ml of antibody

5.3.5 the date of the proposed importation

5.3.6 the name and address of the post-arrival transitional facility approved to the MAF Standard for Dog and Cat Transitional Facilities 154.02.09 where the animal will be quarantined after arrival in New Zealand

5.3.7 a letter from the approved operator of the facility confirming that quarantine space has been booked for the quarantine period.

5.4 Attached to, and an integral part of the permit to import, is the current Import Health Standard which describes the conditions under which the dogs and cats may be imported into New Zealand on yachts.

6 Equivalence

The Import Health Standard has been agreed as being suitable for trade between the exporting and the importing countries. It is expected that the animal will meet the conditions in every respect.

Occasionally it is found that due to circumstances beyond the control of the importer or exporter a consignment does not comply with the requirements of this Import Health Standard. In such cases, an application for equivalence submitted prior to importation will be considered and may be given at the discretion of the Director Pre-Clearance Biosecurity New Zealand if the following information is provided by the exporting country's government veterinary authority:

6.1 the clause[s] of the Import Health Standard that cannot be met and how this has occurred

6.2 the reason[s] why the consignment may be considered of equivalent health status to a consignment complying with this Import Health Standard, and/or what proposal is made to achieve an equivalent health status

6.3 the reason[s] why the veterinary authority believes this proposal should be acceptable to MAF and their recommendation for its acceptance.

7 Importer's Responsibilities

7.1 The costs of MAF in performing functions relating to the importation of animal shall be recovered in accordance with the Biosecurity Act and any regulations made under that Act.

7.2 All costs involved with documentation, testing, treatment, quarantine, transport, storage and obtaining a biosecurity direction and clearance shall be borne by the importer or importer's agent.

7.3 The Master or person in charge of any yacht intending to proceed to New Zealand territory from outside New Zealand territory is required to give MAF notice of intended arrival in New Zealand.

Contact details are:

Website: <http://www.maf.govt.nz/quarantine/index.htm>

Telephone: +64 9 256 8547

7.4 When giving notice of intended arrival in New Zealand, the Master or person in charge of the yacht shall notify an inspector of the presence of an animal on board the yacht arriving in New Zealand.

7.5 When a yacht arrives in New Zealand with an animal[s], the importer may be required, pursuant to section 18 [2] of the Biosecurity Act 1993, to lodge with NZ MAF a bond of NZ\$1,000 according to the conditions stated in Importer's Declaration and Appendix 1 The Conditions of Security of an Animal Imported into New Zealand Aboard a Yacht. If the conditions of security are broken the bond lodged with NZ MAF will be forfeited.

ELIGIBILITY FOR IMPORTATION

7.6 Eligibility for importation under this Import Health Standard is confined to members of *Canis familiaris* [domestic dog] and *Felis catus* [domestic cat].

Dogs of the following breeds [including crosses of these breeds] are not eligible for importation:

American pit bull terrier

Dogo Argentino

Japanese tosa

Brazilian fila.

7.7 The animal must not be more than 42 days pregnant at the date of departure.

7.8 The animal must be more than 9 months old at departure.

7.9 Prior to importation, dogs and cats that have resided in, or been in vessels that have landed in countries within the last 6 months that are not approved by MAF are not eligible for importation.

Countries and territories approved by MAF include:

America Samoa, Antigua and Barbuda, Argentina, Australia, Austria, Bahamas, Barbados, Belgium, Bermuda, Brahain, British Virgin Islands, Brunei, Bulgaria, Canada, Cayman Islands, Chile, Christmas Island, Cook Islands, Republic of Croatia, Cyprus, Czech Republic, Denmark, Eire [Republic of Ireland], Falkland Islands, Fiji, Finland, France, French Polynesia, Germany, Greece, Greenland, Guam, Hawaii, Hong Kong, Iceland, Israel, Italy, Jamaica, Japan, South Korea, Kiribati, Kuwait, Luxembourg, Macau, Malta, Peninsular Malaysia [excluding the designated rabies control area], Marshall Islands, Mauritius, Federated states of Micronesia, Nauru, Niue, the Netherlands, Netherland Antilles and Aruba, New Caledonia, Norway, Palau, Papua New Guinea, Pitcairn Island, Portugal, Republic of Slovenia, Reunion, Sabah, Samoa, Sarawak, Seychelles, Singapore, Solomon Islands, South Africa, Spain, St Kitts and Nevis, St Lucia, St Vincent Grenadin, Sweden, Switzerland, Trinidad and Tabago, Taiwan, Kingdom of Tonga, Tuvalu, United Arab Emirates, United Kingdom, United States of America, US Virgin Islands, Uruguay, Vanuatu, Wallis and Futuna.

7.10 The inspector may request verification of the countries in which the animal has had contact with by requesting to see the yacht's log and human passports.

7.11 The animal will not be eligible for importation unless the animal completes all the necessary steps at the appropriate times. Please follow the sequence of events below to ensure your animal is prepared:

7.11.1 At least 6 months prior to importation the animal must:

7.11.1.1 be identified with a microchip [see section 9]

7.11.1.2 be vaccinated against rabies with a government approved inactivated virus vaccine

7.11.2 Then at least 3 weeks later [after the rabies vaccination], blood is drawn for a neutralising antibody test for rabies. The test must be conducted at an official laboratory in accordance with one of the methods described in the OIE *Manual of Standards for diagnostic tests and vaccines*, and found to have at least 0.5 IU/ml of antibody in its serum. The animal must be identified by its microchip transponder number on the laboratory result form. A copy of the laboratory report must accompany the Veterinary Certificate

7.11.3 The animal is eligible for importation once a minimum of 6 months and less than 12 months after the date of blood sampling for this test has passed.

7.12 Animals that have been resident in New Zealand [free from quarantine restrictions] and previously exported to countries listed in 8.4, may be re-exported to New Zealand within 6 months after blood sampling for the rabies antibody titre under the following additional conditions:

7.12.1 the animal was vaccinated against rabies with an approved inactivated vaccine at least 1 month and not more than 6 months prior to leaving New Zealand when the animal was at least 3 months of age

7.12.2 the animal was identified by microchip prior to, or at the time of, rabies vaccination in New Zealand

7.12.3 the animal was subjected to a serum rabies neutralising antibody titre test prior to leaving New Zealand, with satisfactory results [at least 0.5 IU/ml].

Permits to import issued under the above conditions in 8.7 will require proof to be provided that these requirements have been fulfilled. In this case a letter of equivalence may be issued exempting the animal from the requirements of Veterinary Certificate in the exporting country. Animals will still have to undergo quarantine and testing/treatment.

8 Identification

8.1 Cats and dogs for which a biosecurity clearance is sought:

8.1.1 Must be identified with a microchip and the identification details shown on the accompanying certification. It is recommended that microchip brands adopted by the International Standards Organisation [ISO] are used. If a non-ISO approved microchip is used, the importer shall ensure that a reader is made available to identify animals arriving in New Zealand quarantine

8.1.2 If not identified by a microchip prior to arrival in New Zealand, then they will be required to complete a 180 day quarantine period

8.1.3 Tests and vaccinations completed prior to microchipping will not be recognised by MAF.

8.2 Cats and dogs for which a biosecurity clearance is not sought must be identified to the satisfaction of an inspector; such that an inspector making visits to the quarantine facility or yacht may correctly identify the animals.

9 Health Certification

9.1 The Veterinary Certificate in the Model Zoosanitary Certificate details the animal health conditions that a cat or dog must be subjected to in order for the animal to be eligible for biosecurity clearance after quarantine in New Zealand [if all tests and treatments in quarantine are acceptable and completed]. The Veterinary Certificate must be completed by an authorised government veterinarian of one of the countries listed in section 8.4.

9.2 All serological tests must be conducted at an official laboratory in accordance with one of the methods described in the *OIE Manual of Standards for diagnostic tests and vaccines*.

9.3 Recommendations for dog owners importing a dog from countries where canine heartworm [*Dirofilaria immitis*] is endemic:

9.3.1 The dog should be tested by a veterinarian for heartworm 7 months after importation using the microfilariae concentration test, and an antigen test

9.3.2 Owners who take their dogs to countries where canine heartworm is endemic should ensure that the dogs are given prophylactic treatment according to the manufacturer's recommendations with appropriate preparations effective against fourth stage larvae.

10 Transport to New Zealand

10.1 The use of straw or hay as bedding is not permitted. Only sterilised peat, soft board or other inert products may be used.

PART C: CLEARANCE PROCEDURE

11 Biosecurity Direction

11.1 Any yacht arriving in New Zealand that has an animal aboard, must notify MAF of its intended arrival in New Zealand, and the presence of an animal on board. Contact details are:

Telephone: +64 9 256 8547

11.2 The yacht must not berth in New Zealand but must make directly for the any one of the following ports:

Opua, Whangarei, Auckland, Tauranga, Gisborne, New Plymouth, Napier, Wellington, Nelson, Lyttleton, Dunedin or Bluff.

11.3 Upon arrival at the port, the Importer must without delay notify MAF of the presence of an animal on board, and of any pre-arranged quarantine for the animal.

11.4 If nothing has been pre-arranged, the inspector shall supply a copy of this Import Health Standard to the Importer who shall, without delay, decide upon a course of action consistent with this Import Health Standard and notify the inspector of their decision.

11.5 Biosecurity direction involves the animal being moved to a transitional facility. This direction will occur once an inspector has verified that the necessary identification, quarantine and transport arrangements have been made. Biosecurity direction will be then issued allowing the animal to be moved from the yacht directly to the transitional facility.

11.6 An inspector is responsible for ensuring the animal is transported from the yacht to the approved transitional facility under secure conditions through the use of officially sealed cage.

11.7 The dog and cat must be transported at the first available opportunity from the yacht to the approved transitional facility named on the permit to import. If no accommodation is immediately available, no biosecurity direction will be issued and the animal will be held bonded aboard the yacht until a place in an approved transitional facility is available.

11.8 Conditions for bonding an animal on board a yacht are covered in APPENDIX 1.

12 TRANSITIONAL FACILITY

12.1 Following biosecurity direction being given, the animal must proceed to a registered transitional facility approved to the MAF Standard for Dog and Cat Transitional Facilities 154.02.09 for quarantine.

12.2 The period of quarantine will be decided by the Director Pre-Clearance Biosecurity New Zealand according to the provision of documentation that can be provided and the results obtained to tests in post-arrival quarantine:

EITHER

12.2.1 The quarantine period shall be 30 days if a satisfactorily completed Veterinary Certificate and Importer's Declaration are provided for the animal, and if the animal passes the prescribed tests in post-arrival quarantine to the satisfaction of the Director Pre-Clearance Biosecurity New Zealand

OR

12.2.2 The quarantine period may be extended beyond 30 days to allow treatment and re-testing where appropriate [see 13.9 of this Import Health Standard] if a satisfactorily completed Veterinary Certificate and Importer's Declaration are provided for the animal, but the animal does not pass the prescribed tests in post-arrival quarantine to the satisfaction of the Director Pre-Clearance Biosecurity New Zealand

OR

12.2.3 The quarantine period may be extended [as a guide, 180 days may be required] if a satisfactorily completed Veterinary Certificate and Importer's Declaration are not provided for the animal. This will allow testing and isolation where appropriate [see 13.9 of this Import Health Standard].

12.3 On arrival in the transitional facility, the animal must be subjected to meticulous examination and treatments for parasites:

12.3.1 the first examination and treatment for ticks and other external and internal parasites [including hook worms and hydatids] must occur within 3 days of arrival in the transitional facility

12.3.2 treatment for external and internal parasites [including hook worms and hydatids] must be repeated at least 21 days after the first treatment

12.3.3 additional treatments for external parasites should be given as appropriate until the animal is tick free

12.3.4 Any external parasites found must be submitted to National Centre for Disease Investigation for identification and a report made immediately to the Director Pre-Clearance Biosecurity New Zealand. The yacht will also be treated for ticks with an approved acaricide [such as cypermethrin spray].

12.4 If biosecurity clearance is sought while in quarantine, each imported dog must be tested and/or treated for the following diseases promptly after arrival:

12.4.1 canine heartworm [*Dirofilaria immitis*] according to the following regime:

12.4.1.1 blood sample must be negative to a microfilariae concentration test

12.4.1.2 antigen test [Witness HW, Agen; Snap Heartworm PF, Idexx; PetChek Heartworm PF, Idexx] must be negative

12.4.1.3 treated with either of the following drugs at the respective dose rate:

EITHER

i] ivermectin at 6 µg/kg

OR

ii] milbemycin at 0.5 mg/kg

OR

iii] moxidectin at 2 - 4 µg/kg

OR

iv] sustained release formulation moxidectin [ProHeart SR-12 Injection] at the approved dose rate.

12.4.2 *Leptospira canicola* the following regime:

EITHER

13.4.2.1 negative results according to the agglutination lysis test [negative is less than 50% agglutination at 1:100]

OR

13.4.2.2 where the first sample shows a positive titre of not more than 1:400, a second sample collected at an interval of not less than 14 days must show no increase in the titre above that of the first test

OR

13.4.2.3 the dog will be treated with doxycycline at a therapeutic dose rate for 14 consecutive days or dihydrostreptomycin at a therapeutic dose rate for 5 days.

12.4.3 *Brucella canis* with:

EITHER

13.4.3.1 negative results using the slide agglutination test [microscopic agglutination test]

[Note: a rapid slide agglutination test using 2-mercaptoethanol and a less mucoid[M-] variant of *Brucella canis* as antigen [as described by Carmichael and Joubert, Cornell Vet. 1987, 77: 3-12] is recommended to reduce the incidence of false positive reactions]

OR

13.4.3.2 negative results using the AGID I [cell wall antigen] test

OR

13.4.3.3 if either test results above are positive, then the dog must be tested using the AGID II [cytoplasmic antigen] test.

Dogs that test positive for *Brucella canis* using the AGID I or slide agglutination test

[microscopic agglutination test] as well as the AGID II test will not be eligible for importation.

These dogs will be ordered as below in 13.9.2].

12.4.4 *Ehrlichia canis* using the indirect fluorescent antibody test with;

EITHER

13.4.4.1 negative results

OR

13.4.4.2 positive results and the dog will be treated with doxycycline at a dose rate of 10 mg/kg body weight on 14 consecutive days.

12.5 The dog must be tested for *Babesia gibsoni* within 10 days of the scheduled date of departure from quarantine. A blood sample and a thin blood smear made from a drop of blood

obtained from an ear margin must be collected at the same time, and the following tests performed:

12.5.1 indirect fluorescent antibody test [IFAT] or PCR using antigens appropriate for the strain likely to be present in all the countries where the dog has been resident, with a negative result [cutoff value is 1:40 for IFAT]

12.5.2 examination of blood smear with negative result for *Babesia gibsoni*.

12.6 If the dog has been resident in South Africa then it will be subjected to a serum agglutination test sensitive to *Brucella abortus* [negative is less than 50% agglutination at serum dilution of 1:100]. It will also be treated for *Babesia canis* using two treatments of imidocarb dipropionate by subcutaneous injection, at an interval of 2 weeks and a dose rate of 6.6mg/kg; the second treatment to be given within 14 days of the scheduled date of departure from quarantine.

[N.B. It is recommended that at least a 48 hour period is allowed to elapse between treatment with imidocarb dipropionate and application of an external parasiticide according to section 13.3 above.]

12.7 If the dog or cat has been resident in Peninsular Malaysia then it must be subjected to a serum neutralisation test for Nipah virus at CSIRO Australian Animal Health Laboratory [AAHL], Victoria, Australia with a negative test result. This will be done promptly after arrival in quarantine.

12.8 The dog or cat will have blood drawn for a neutralising antibody titration test for rabies promptly after arrival in quarantine. The test result must demonstrate a titre of at least 0.5IU/ml.

12.9 If results to any of the tests detailed in section 13.4 to 13.8 are not to the satisfaction of the Director Pre-Clearance Biosecurity New Zealand the animal may be directed to be:

EITHER

13.9.1 retested or treated depending on the epidemiology of the disease

OR

13.9.2 to be re-exported or destroyed, at the importer's expense.

12.10 The quarantine period may be extended [as a guide, 180 days may be required]. For certain diseases this extension may be used to retest, revaccinate, or treat the animal.

13 Biosecurity Clearance

13.1 A biosecurity clearance will be given by the veterinary officer supervising the transitional facility, when all conditions as specified in ELIGIBILITY and PART C: CLEARANCE PROCEDURE have been met.

13.2 Biosecurity clearance cannot be obtained by an animal remaining bonded aboard a yacht.

14 Supplementary Notes

14.1 On arrival, the New Zealand address at which the animal will be domiciled should be verified as being that which is specified in section II of the Zoosanitary Certificate. Pursuant to section 121 of the Biosecurity Act 1993, an inspector may visit the premises to examine the imported animal at any reasonable time.

14.2 Any illness in the imported animal should be reported to a private veterinary practitioner who has an obligation to report any suspicion of exotic disease to MAF.

14.3 All dogs should be registered with the local government authority within 14 days of biosecurity clearance being issued.

PART D: ZOOSANITARY CERTIFICATE

15 Negotiated Export Certification

15.1 The following document is recognised by MAF as equivalent to the requirements of PART D: ZOOSANITARY CERTIFICATION, and is approved to accompany imports of dogs and cats into New Zealand on yachts from specified countries:

MODEL ZOOSANITARY CERTIFICATE

Species: DOGS AND CATS

To: NEW ZEALAND

Import Permit Number:

I IDENTIFICATION OF ANIMAL

Name of animal:

Microchip identification number:

Age, breed, sex of animal:

Physical description of animal:

II OWNER/IMPORTER

Name and address of owner/importer:

III ORIGIN OF THE ANIMAL

Name of yacht:

Name and address of Master or person in charge of the yacht:

Country and port last visited:

Date of departure from country last visited:

Countries yacht has visited previously [including arrival and departure dates]:

IV DESTINATION OF ANIMAL

Proposed date of yacht's departure:

Destination:

V: SANITARY INFORMATION

Owner/exporter's statutory declaration for dogs:

I, , do solemnly and sincerely declare, in respect of a dog for export to New Zealand identified below, that the following dog is not one of the following breeds or types: American pit bull terrier, Japanese tosa, Brazilian fila, dogo Argentino [including a cross of one or more of these breeds or types]:

Name of animal: Breed:

Age: Sex:

Colour/description/identification:

Signature of owner or exporter:

Declared at , this day of 20

before me

[signature and printed name person authorised to take a statutory declaration]

Registered Veterinarian declaration:

I, , being a registered veterinarian, certify, in respect of the animal described above, that after due enquiry and/or physical examination of the animal for export, I have no reason to doubt the owner/exporter's statutory declaration.

Signature of registered veterinarian Date

Name of veterinarian and address:

IMPORTER'S DECLARATION

I, being the owner or owner's agent responsible for the animal imported into New Zealand aboard a yacht, with respect to the animal identified on the accompanying Zoosanitary Certificate, make the following declaration:

1 Any female animal was not more than 42 days pregnant at date of departure.

2 The animal was more than 8 weeks old at date of departure.

3 EITHER

3.1 The animal has in the previous 6 months been resident or landed in countries listed below:

America Samoa, Antigua and Barbuda, Argentina, Australia, Austria, Bahamas, Barbados, Belgium, Bermuda, Brunei, British Virgin Islands, Brunei, Bulgaria, Canada, Cayman Islands, Chile, Christmas Island, Cook Islands, Republic of Croatia, Cyprus, Czech Republic, Denmark, Eire [Republic of Ireland], Falkland Islands, Fiji, Finland, France, French Polynesia, Germany, Greece, Greenland, Guam, Hawaii, Hong Kong, Iceland, Israel, Italy, Jamaica, Japan, South Korea, Kiribati, Kuwait, Luxembourg, Macau, Malta, Peninsular Malaysia [excluding the designated rabies control area], Marshall Islands, Mauritius, Federated states of Micronesia, Nauru, Niue, the Netherlands, Netherland Antilles and Aruba, New Caledonia, Norway, Palau, Papua New Guinea, Pitcairn Island, Portugal, Republic of Slovenia, Reunion, Sabah, Sarawak, Seychelles, Singapore, Solomon Islands, South Africa, Spain, St Kitts and Nevis, St Lucia, St Vincent Grenadin, Sweden, Switzerland, Trinidad and Tabago, Taiwan, Kingdom of Tonga, Tuvalu, United Arab Emirates, United Kingdom, United States of America, US Virgin Islands, Uruguay, Vanuatu, Wallis and Futuna, Samoa.

OR

3.2 The animal has in the previous 6 months visited the following countries, which do not appear on the list of 1.1:

[Delete if not applicable]

4 The animal has been resident or landed in either South Africa or Peninsular Malaysia since birth.

[Delete if not applicable]

5 I have read and understood the conditions attached as Appendix 1 *Conditions of Bonding an Animal Aboard a Yacht*. In the event of the Conditions of Bonding an Animal Aboard a Yacht being broken, I understand that if a bond of NZ \$1,000 was lodged with the Ministry of Agriculture it will be forfeited.

Signature of Importer Date

Name and address:

VETERINARY CERTIFICATE

I, a government veterinary officer of

[country], declare with respect to the animal described in the attached Zoosanitary Certificate that:

1 The animal was vaccinated against rabies with government approved inactivated virus vaccine:

EITHER

1.1 in the case of a primary vaccination, not less than 6 months and not more than 1 year prior to the scheduled date of arrival in New Zealand, when the animal was at least 3 months old

Date of vaccination:

OR

1.2 in the case of a booster vaccination, not more than 1 year prior to the scheduled date of arrival in New Zealand

Date of vaccination:

[Delete either 1.1.1 or 1.1.2 above whichever is not applicable]

2 A copy of the rabies vaccination certificate for the most recent vaccination, and, in the case where the most recent vaccination was a booster, a copy of the rabies vaccination certificate for the previous vaccination, is attached.

3 The animal is identified with a microchip; this has been done at least 6 months prior to arrival in New Zealand and before the most recent rabies vaccination.

Microchip number:

Anatomical site implanted:

4 Not less than 6 months and not more than 12 months prior to the scheduled date of arrival in New Zealand, the animal was subjected to a neutralising antibody titration test for rabies conducted at an official laboratory in accordance with one of the methods described in the *OIE Manual of Standards for diagnostic tests and vaccines*, and found to have at least 0.5 IU/ml of antibody in its serum; a copy of the laboratory report is attached.

Date of test:

Government Veterinary Officer Official stamp and date

Name of veterinarian and address of office:

PART E: APPENDICES

APPENDIX 1: THE CONDITIONS OF SECURITY OF AN ANIMAL IMPORTED INTO NEW ZEALAND ABOARD A YACHT

The Importer of the animal shall, pursuant to section 18 [2] of the Biosecurity Act, if required by an inspector, lodge a bond that is a minimum of NZ \$1,000 with MAF.

The bond will be forfeited to MAF by the Importer upon any condition outlined in this Import Health Standard being broken, or upon non-payment of any charges incurred during quarantine, testing, treatment or inspections.

If the importer of the animal does not want to lodge a bond, then the animal may be directed into quarantine under section 33 the Biosecurity Act and taken to a transitional facility for quarantine. There the animal will remain until the yacht is to leave New Zealand waters or it will be destroyed. All costs in this regard will be recovered from the importer of the animal. If the importer does not wish to have the animal proceed to quarantine, then they must leave New Zealand waters under section 33 of the Act.

For yachts with animals that are remaining at a New Zealand port for a short period then a bond may not be required, but this is at the discretion of the inspector after consultation with Animal Imports and Exports.

The following applies, at the discretion of the Importer, if a biosecurity clearance is not sought and the animal is to remain bonded aboard a yacht:

5.1 The animal will remain bonded aboard the yacht, and the yacht is to remain berthed at the port of arrival, for the entire duration of the yacht's visit to New Zealand. During this period the presence of yacht at the approved port of landing and the presence of the animal on board the yacht will be verified weekly by an inspector, and at no time shall any other animal be allowed on board the yacht [unless it is a customs or police dog]

5.2 When a police/customs dog is aboard the yacht, the bonded animal will have to be muzzled and caged. All animal wastes [faeces and urine] will have to be removed and cleaned/disinfected prior to the police/customs dog boarding the yacht.

5.3 If the animal remains bonded aboard the yacht, all cats and dogs must be subjected to the following treatments on at least two occasions a minimum of 21 days apart and the first within 3

days of arrival in New Zealand, administered by an Official Veterinarian:

5.3.1 efficacious treatments for ectoparasites including ticks

5.3.2 efficacious treatments for endoparasites, hookworms and hydatids.

Any external parasites found must be submitted to National Centre for Disease Investigation for identification and a report made immediately to the Director Pre-Clearance Biosecurity New Zealand. The yacht will also be treated for ticks with an approved ectoparasiticide effective against ticks [such as cypermethrin].

The bond held by MAF will be returned to the Importer upon the animal leaving New Zealand aboard the yacht, or the animal obtaining biosecurity clearance. If there are any charges outstanding from testing, treatment, inspections and quarantine these sums shall be deducted from the bond prior to the bond being returned to the Importer, or, in the case of outstanding charges being over and above the amount of the bond, the animal may be detained at the discretion of the Director Pre-Clearance Biosecurity New Zealand, until the outstanding charges are paid.

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**Application form to import dogs and/or cats into New Zealand quarantine
from Specified Countries (including South Africa and Malaysia)
PLEASE PRINT CLEARLY AND COMPLETE ALL SECTIONS**

Importer (Your NZ address OR address in export country) Date submitted //

Name	
Address	
Phone	Fax
Email	

Description of animals (continue on separate sheet if necessary)

*Species	**Breed	Microchip number	Age (yrs/mths)	Sex (M/F)

* Must be members of the species *Canis familiaris* (domestic dog) and *Felis catus* (domestic cat).

**Dogs of the following breeds (including crosses of these breeds) may not be imported:

American Pit Bull Terrier, Dogo Argentino, Japanese Tosa and Brazilian Fila

Exporter (Your address in export country)

Name	
Address	
Phone	Fax
Email	

Agent contact details (if applicable)

Name	
Phone	Fax

Email	
Country of export:	Approx date of import:

Name of NZ quarantine facility where animal(s) will be taken on arrival

Name

Address to send permit (Fax copies not permitted)

Name
Address

PLEASE NOTE THAT THE ORIGINAL PERMIT MUST TRAVEL WITH THE ANIMAL
PLEASE MAKE SURE ALL THE FOLLOWING DOCUMENTS ACCOMPANY PERMIT
APPLICATION FORM

Letter from the operator of the New Zealand Quarantine Facility, co-signed by the supervising MAF Veterinarian, confirming availability of space for the animal(s) at the time of importation.

A laboratory result form, from a laboratory approved by the government veterinary officer of the exporting country, which indicates that the animal(s) to be imported were subjected to a neutralising antibody titration test for rabies conducted at an official laboratory in accordance with one of the methods described in the OIE Manual of Standard for Diagnostic Test and Vaccines, and found to have at least 0.5IU/ml of antibody in its serum. The laboratory result form must clearly identify the animal to be imported, using the microchip transponder identification of the animal.

A Letter signed by the animal's veterinarian stating (a) the date blood was taken from the animal(s) for the laboratory testing detailed above, and (b) that the microchip/tattoo has been read and confirmed as correct, on the same day blood was drawn.

Payment details

Cheque enclosed for NZ\$130* (GST Included)
Credit card details for NZ\$130* (Visa or Mastercard only)

Exp	
Name of cardholder:	Signature:

* This charge is based on the Biosecurity Regulations 2003

Please note that this fee only covers the cost of the import permit issued by Import Management. The Importer, as listed over, accepts full responsibility for all costs associated with the importation of the animal(s) as listed.

I/we agree to indemnify MAF against all costs, whether commission, legal fees or otherwise incurred by MAF or MAF's duly authorised agents relating to the recovery of

any monies, goods or services owed by me/us to MAF. I/we irrevocably authorise any person or company to provide you with such information as you may require in response to your credit enquiries. I/we further authorise you to furnish to any third party details of this application and any subsequent dealings that I/we may have with you as a result or the application being actioned by you.

Signature: _____

Privacy Act 1993

The information on this form is being collected to enable the Director-General of Agriculture and Forestry, or a duly authorised delegate, to consider whether or not to issue a permit under section 22(3) of the Biosecurity Act 1993. The agency collecting and holding this information is: Import Management, Ministry of Agriculture & Forestry, ASB Bank House, 101-103 The Terrace, PO Box 2526, Wellington. Ph: +64 4 4989624, Fax: +64 4 4744132. If you do not provide any of the information requested in this form, your application for a permit may be declined. You have rights of access to, and correction of, personal information supplied in this form as provided by the information privacy principles in section 6 of the Privacy Act 1993.

Please apply for permit AT LEAST six weeks prior to import date

Post, email or fax application to:

Biosecurity NZ, MAF, MAF

Border Standards Phone: 64 4 8190459

PO Box 2526 Fax: 64 4 8190662

Wellington

Email:

imports@maf.govt.nz

The following facilities are registered and permitted to quarantine domestic pets from specific countries

Quarantine for cats only

Pussy Cat Lodge 29 Crowther Street Avondale Auckland	Proprietor: Gary Burch Ph: (64) 9 8283410 Fax: (64) 9 8280455
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Quarantine for cats and dogs

Qualified Pet Services 150 Airfield Road Takanini Auckland Web: www.qualifiedpet.co.nz	Proprietor: Raymond Cheung Ph: (64) 9 2999539 Fax: (64) 9 2999539 Email: services@qualifiedpet.co.nz
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Canterbury Quarantine Services Ltd Highfield Road Aylesbury Christchurch Mailing address: PO Box 23158 Templeton	Proprietors: Chris & Lindsay Ward Ph: (64) 3 3181279 Fax: (64) 3 3181289 Email: wumba@xtra.co.nz
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Christchurch

Shado-Lans 773 SH 1 RD 31 Levin Web: www.shado-lans.co.nz	Proprietors: Denise & John Clark Ph: (64) 6 3626184 Fax: (64) 6 3626185 Email: shado-lans@xtra.co.nz
Pethaven 71A Homestead Road RD1, Pokeno Auckland	Proprietor: Robyn van den Brink Ph/Fax (64) 9 233 6301 Email: pethaven@xtra.co.nz Web: www.pethavenkennels.co.nz

Hawwiian Pet Importation blood test

I used this lab in 2003 to process the blood sample drawn by a local vet. They will prepare the sample per the requirements of the Kansas State University Rabies facility. They have a web page <http://www.lpcv.com.mx/> and are located downtown in Puerto Vallarta. When they did our sample they packed it in dry ice to protect it in transit. You will need to get the procedures to be used for the lab to process the sample from the Hawaii quarantine web page.

http://www.hawaiiag.org/hdoa/ai_aqs_info.htm

If you follow the procedures the process to get a pet into Hawaii is painless. They pick up the animal from your boat and you can pick it up from their facility later that day.

First Aid for Pets

Basic Supplies:

Gauze pads, gauze roll/ bandages, roll of cloth, thermometer, tweezers, hydrogen peroxide, antibiotic ointment, Q-tips, instant cold pack, rags/ rubber tubing for tourniquet, First Aid book

Handling an Injured Animal

Any animal injured or in pain can bite or scratch you. Even the friendliest of pets must be handled with care for the safety, of all involved. If you are accidentally bitten or scratched, seek medical attention. Both dog and cat bites can become infected quickly!

Vital Statistics: Pulse and Heart Rate

Normal resting rates:

- Cats: 150-200 bpm
- Small dogs: 90-120 bpm
- Medium dogs: 70-110 bpm
- Large dogs: 60-90 bpm

Pulse should be strong, regular and easy to locate.

Checking the pulse

The easiest place to locate a pulse is the femoral artery in the groin area. Place your fingers on the inside of the hind leg and slide your hand upward until the back of your fingers touches the abdomen. Gently move your fingers back and forth on the inside of the hind leg until you feel the pulsing blood. Count the number of pulses in 15 seconds and multiply that number by 4. This will give you the beats per minute (bpm).

Temperature

Normal temp. for dogs and cats: 100-102.5°F. Thermometer should be almost clean when removed. Abnormalities are indicated by blood, diarrhea, or black, tarry stool.

Basic First Aid Procedures

All of the following situations require immediate veterinary care.

1. Fractures

- Muzzle animal.
- Gently lay animal on a board, wooden door, tarp, etc. padded with blankets.
- Secure animal to the support.
- Do not attempt to set the fracture.

- If a limb is broken, wrap the leg in cotton padding, then wrap with a magazine, rolled newspaper, towel or two sticks. Splint should extend one joint above the fracture and one joint below. Secure with tape. Make sure wrap does not constrict blood flow.
 - If the spine, ribs, hip, etc. appears injured or broken, gently place the animal on the stretcher and immobilize it if possible.
2. **Bleeding (external)**
 - Muzzle animal.
 - Press thick gauze pad over wound. Hold firmly until clotting occurs.
 - If bleeding is severe, apply a tourniquet between the wound and the heart.
 - Loosen tourniquet for 20 seconds every 15-20 minutes.
 - A tourniquet is dangerous and should only be used in life-threatening hemorrhaging of a limb. It may result in amputation or disability of the limb.
 3. **Bleeding (internal)**
 - Symptoms: bleeding from nose, mouth, rectum; coughing blood; blood in urine; pale gums; collapse; rapid or weak pulse.
 - Keep animal as warm and quiet as possible.
 4. **Burns**
 - Chemical
 - Muzzle animal.
 - Flush immediately with large quantities of cold water.
 - Severe
 - Muzzle animal.
 - Quickly apply ice water compresses.
 - Treat for shock if necessary.
 5. **Shock**
 - Symptoms: weak pulse; shallow breathing; nervousness; dazed appearance.
 - Often accompanies severe injury or extreme fright.
 - Keep animal restrained, quiet and warm.
 - If unconscious, keep head level with rest of body.

Restraint Methods

If your animal is injured, you must restrain him/her for your safety as well as your pet. Muzzle your pet to restrain it unless it is unconscious, has difficulty breathing or has a mouth injury.

Dogs--Muzzles

1. Speak and move calmly and quietly.
2. Have someone restrain the dog with a leash.
3. Approach dog from the side and behind its head; do not attempt to put muzzle on from the front.
4. Quickly slip a nylon or wire cage muzzle over nose, secure snugly behind ears.
5. If a muzzle is not available, you can make one from a strip of gauze, rag, necktie, belt or rope about 3 feet long.
 - Make a large loop in the center. Quickly slip loop over dog's nose.
 - Bring ends under chin. Tie snugly behind ears.

Cats--Muzzles

1. Speak and move calmly and quietly.
2. Have someone restrain the cat by holding the scruff of its neck firmly. This does not hurt the cat; it just prevents him/her from moving.
3. Working from behind the cat, quickly slip a nylon muzzle over the cat's face. The muzzle will cover most of his/her face, including the eyes. Secure snugly behind head.

4. If you are alone, scruff the cat with one hand and put the muzzle over the cat's face with the other. Slide both hands along muzzle straps and secure behind the head.
5. If a muzzle is not available, one can be made with a rag or a strip of gauze. Make sure that it is carefully placed around the cat's mouth and securely fastened, as cats can escape from these temporary muzzles.

Cats--Body Restraint

1. Most cats can be restrained by holding the scruff of the neck.
2. The "Cat Sack" can be used for fractious or very frightened cats. Slip sack over cat from tail to head, zip up appropriate zippers.
3. Wrap cat in a towel, making, sure his/her front legs are covered and against the body.
4. Gloves are not recommended for handling cats. They reduce the handler's dexterity and can easily be penetrated by a cat's teeth.

Chapter 10 – SOUTH PACIFIC DIVING

Chapter Overview

- Hazards and Warnings
- Dive Destination Highlights
 - Fiji
 - Hawaii
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- Dive Destinations
 - Fiji
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- Other Dive Destinations
 - The Solomon Islands
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- SSCA Article: Panama to Bora Bora, by s/v Ventana
 - Isla Cocos
 - Galapagos
 - Marquesas
 - Tuamotus
 - Tahiti & Society Islands

Great diving is just one of the reasons to make the puddle jump. And by “diving”, we are not referring just to SCUBA, but also to free diving and/or snorkelling. A mask and snorkel is part of the mandatory equipment list for every cruising boat. If you are not a certified scuba diver, it is a useful cruising boat skill as well as a fun recreational activity. If you are not already a qualified scuba diver, and decide to learn while cruising, there are a couple of things to bear in mind. Take a course from a qualified instructor who follows a recognised curriculum such as PADI or NAUI. Be prepared to put in some classroom hours and book study. And after you qualify, dive at sites that are suitable for your skill and experience levels.

As cruisers, we already have the means to get to the dive site; a boat! But it may prove worthwhile to join a dive charter for a dive or two, when you are new to an area or an inexperienced diver. Prices will vary with the Cook Islands and Tonga the least expensive and French Polynesia the most. For example, a one tank dive in the Cook Islands or Tonga will likely be under \$50 USD while the same dive could be up to \$100 USD in French Polynesia. Fiji and Samoa will fall in between these prices. If you supply your own equipment, they’ll likely knock about \$10 or so off the cost.

Hazards and Warnings

There are a few things the prudent diver should be aware of while diving in the South Pacific. The only re-compression chamber facilities are in Papeete, Fiji, N.Z., Australia and Hawaii. Evacuations from other areas will have to be by chartered low flying aircraft, thus very expensive. Evacuation insurance such as that offered by D.A.N. would be a very good idea if you plan to scuba dive in remote areas.

If you are spear fishing, bear in mind that ciguatera poisoning is a problem with many species of reef fish including wrasses, groupers, jacks, and shellfish and particularly top of the food chain species such as Barracuda. Symptoms include numbness and tingling around the mouth and extremities, itching, nausea, vomiting, erratic heartbeat, and joint and muscle pain. If you suspect ciguatera poisoning, induce vomiting, take a laxative, avoid alcohol and seek medical treatment as soon as possible.

Local knowledge will help you avoid ciguatera as well as not eating over 45 cm (15") or 1 kg (2 lb.) . Open water (pelagic) fish such as Mahi-mahi or tuna do not cause ciguatera poisoning. While you are spear fishing, your kill may attract unwanted attention from sharks. Experienced spear fishers in shark waters never attach their kill to their bodies. Instead, they trail it well behind themselves.

There are a number of poisonous hazards that one could potentially encounter while diving, or for that matter swimming. Among them are stonefish, cone shells, stingrays, jellyfish, and sea snakes. Learn to recognise these creatures and/or how to avoid them.

Dive Destination Highlights

Fiji ; soft coral capital of the world

Fiji is reputedly the best South Pacific destination for both scuba diving and snorkelling. Fiji is renowned as the soft coral capital of the world and is caters to a large scuba diving enthusiast crowd. There are a number of specialist scuba diving resorts exclusively for scuba divers, as well as luxurious scuba diving charter boats that explore the region and a decompression centre. Most other resorts in Fiji have either their own PADI scuba instructors or lease out to private scuba diving companies.

Hawaii : submarine lava tubes and unique marine life.

Hawaii is known for its submarine lava tubes on the Big Island, Maui and Lana'i. Although there are no specialist dive resorts, almost all resorts offer scuba diving. Snorkelling is excellent in many parts of the islands, but is generally off rocky coasts rather than from the beach.

Tahiti : drift diving in tidal flow channels off Rangiroa Atoll and caves, channels and portals off Bora Bora.

Tahiti is best known for its large pelagic fish, particularly sharks and rays, and for its enormous schools of colourful reef fish. There are great dives on Bora Bora, Moorea and off the atolls of the Tuamotu Group, but diving in Tahiti is more expensive than its Pacific neighbours.

Tonga: tidal flows and large marine life including whales plus gorgonian fans.

Tonga offers some good diving, notably around the Ha'apai group although there are only a couple of dive operators. There are several excellent snorkelling spots in Vava'u which rank amongst the best in the South Pacific, and if you snorkel between May and October, you're likely to hear the singing

humpback whales!

Cook Islands : Easily accessible sites off Rarotonga in all conditions- good for casual divers.

The Cook Islands are limited for experienced divers but are excellent for beginners and holiday divers. The dive sites are good for marine life and are all just off the coastline of Rarotonga - getting to them takes no time at all.

Samoa : lava tubes and marine life

Samoa has average scuba diving with only a couple of scuba diving operators and no specialist resorts. Snorkelling is good on the south west coast of Upolu.

Dive Destinations

Fiji

Fiji scuba diving highlights include a fantastic variety of colourful soft corals, over 1200 species of fish, 12 species of whales and dolphins, lots of specialist scuba diving resorts and live aboard dive charters as well as excellent snorkelling off the beach. Fiji dive sites offer good variety and easy access.

The Fiji archipelago is encircled by a huge reef. Within its protected waters are shallow lagoons, steep drop offs, and thousands of scuba dive sites. Most areas are easy to get to with plenty of resorts offering scuba diving scattered around the islands. Sea temperatures are very warm - typically 25C in winter (May to Nov) and up to 30C in summer at depths of 5 metres. Visibility is also excellent with depths of 40metres not unusual. The best diving conditions are early morning before the winds pick up. Heavy rainfall in the summer can obscure visibility off the main islands with river run-off.

Many of the Fiji scuba diving operations around the islands will be independent companies operating from the premises of the hotel. The majority are active members of the Fiji Scuba Diving Operators Association and agree to be bound by the Associations code of practice and thereby support the Fiji Recompression Chamber Facility.

Mamanuca Islands

The compact nature of the group means that all dive sites are accessible from all resorts. Each resort has its own certified PADI dive concession with prices for a two-tank dive starting at F\$120 and an open-water course with 4 dives from F\$540. Rich nutrients carried by strong south-easterly currents feed the Malolo Barrier Reef, a ten mile long system along the south-eastern side of the group which extends to Castaway Passage. This nutrient flows create the most spectacular setting for marine life on the western side of Fiji with over 400 species of colourful reef fish as well as dolphins, sharks and turtles. Hard and soft corals, fans, caves and pinnacles act as the backdrop. Unfortunately, the popularity of the Mamanucas and resort-diving means that many divers are either novices or recreational divers with little consideration for the protection of the reef or the marine environment. Shark and fish feeding is common to make the dives more appealing, look but don't touch practice is often overlooked and the popular dive sites can be overcrowded. For a more peaceful environment, dive the Outer Reef around the islands of Tokoriki, Monuriki and Vomo where large pelagic fish are common and some unusual sites make diving for beginners and experienced divers a more fulfilling experience.

Southern Islands

World famous Astrolabe Reef on Kadavu in the Southern Islands (45 minutes flight from Nadi) has

excellent hard and soft corals and excellent marine life. More soft corals along the north and south coast with some excellent caves and deep drop-off's on the western tip of Kadavu. Good all-round diving centre but south-easterly tradewinds can make diving difficult at times. On calm days, visibility can be up to 150 metres. Beqa Lagoon to the north of Kadavu includes numerous soft corals, reef bommies and passages. Small secluded dive resorts accessible only by boat. Lush rainforest and tropical beaches. Humid and wet at times. Very traditional Fijian lifestyle and culture. Beqa Lagoon is accessible by boat (1 hour plus) from Pacific Harbour on the main island of Viti Levu. The famous shark feed with many species of sharks including hammer heads is right off the coast from Pacific Harbour.

Northern Islands

World famous Rainbow Reef in Northern Islands (1 hour 20 minutes flight to Taveuni lies between Taveuni and Vanua Levu and has lots of scuba diving experiences including the Great White Wall (all white soft corals) and advanced drift diving through channels. Numerous smaller reefs around Vanua Levu, Taveuni, Qamea, Laucala and Matangi Islands with abundance of soft and hard corals and excellent marine life. The Northern Islands have been developed for Eco-tourism as well as diving and the regions outstanding mountains, rainforests and waterfalls are all relatively accessible with tours and trails to the major attractions. Humid and wet at times.

Lomaiviti Group

Two separate barrier reefs between Viti Levu and Vanua Levu in the north east of Fiji are accessible from Nananu-i-Ra and the Lomaiviti Group. Rich area fed by tradewind currents with excellent marine life including Manta Rays and hammerheads as well as bommies and pinnacles in the lagoons. A handful of small island resorts, some luxurious. Also accessible by charter dive boats that explore some of the unexplored areas of these huge reefs including the up-and-coming E6 reef. Shipwrecks can be explored around the old Colonial capital of Levuka on Ovalau.

Hawaii

Hawaii scuba diving attractions evolve mainly around its rich and unique marine life. There are about 2000 different species in Hawaiian waters, 30% being endemic to Hawaii. Many are small and colourful reef fish that are as inquisitive as the divers. Hawaii's isolation has made it an attractive feeding ground for large marine life and the waters abound with sharks, manta rays and eagle rays, as well as turtles, dolphins and whales. There are no soft corals in Hawaii and although extensive coral reefs are present, scuba divers who have dived in Australia, Fiji or the Solomons will be disappointed. What Hawaii does offer are endless networks of submarine lava tubes. Most dive sites are accessible direct from the shore, making snorkelling a good alternative. Scuba diving in Hawaii is relatively expensive. An Open Water certification course typically cost US\$500 whilst a simple one-tank reef dive will cost US\$60.

The two best islands for scuba diving are Maui (including Lanai) and the Big Island. Scuba diving operators thrive at all tourist centres and offer everything from beginner courses in swimming pools to advanced night dives and photographic sessions. Head to the local marina to find the best deals.

Maui is well known for its excellent scuba diving. There are excellent scuba diving sites along the entire west coast of Maui with the most popular destination being Molokini (see further down). However, serious divers should head for the very best sites on the neighbouring island of Lanai, a 40-minute ride from Lahaina Harbour. Lanai is famous for its lava formations, caves and arches with compelling sites named cathedrals and Secret Cove. Spinner dolphins are always a big attraction here. The tiny island of Molokini has excellent scuba diving off the deeper back side with dramatic wall dives to 300 feet and pelagic activity. Being a small island, snorkelling and scuba diving are good

whichever way the wind blows.

Big Island scuba diving is amongst the best in Hawaii with the top locations off the Kona coastline along the west coast. This area is particularly good for its rich marine life and steep drop-offs. Protected from winds and with mostly clear skies, visibility is seldom less than 100 feet. Honokohau Marina a few miles north of Kailua Town on the west coast is the centre for scuba diving charters.

Kauai scuba diving is growing in interest although this is not the islands major attraction. Scuba diving operators are based at all major locations (Poipu, Lihue, Kapaa and Princeville) and will offer good marine life and interesting caves to explore.

Tahiti

Tahiti scuba diving offers an excellent variety with some of the healthiest coral reefs in the world and a wide range of large marine life, particularly rays and sharks. Drift diving through channels is particularly exciting. Visibility is excellent with 30 metres common the outside reefs and 20 metres in the shallow lagoons. And sea temperature are warm year round (26-29C). There are more than 30 certified scuba diving companies throughout the islands offering everything from beginner courses certified by both the French standard CMAS and by PADI to advance diving. Most instructors speak good English. There are several live-aboard scuba diving charters available for those with a real passion for exploration diving.

As a summary, Bora Bora is renowned for its manta rays, Moorea for its shark feeds and Raiatea for its wreck dives. The best corals and reef fish are found in the Tuamotu Group with Rangiroa and Fakrava atolls famous for its exciting channel dives with sharks and other pelagic fish and Manihi and Tikehau reputed for their enormous schools of reef fish and soft corals.

Tahiti - the Main Island - Society Islands

Offers a good introduction to scuba diving with a bit of everything: wrecks, nudibranchs and leaf fish, and conveniently close to the western hotel chains. There are Gorgonian fans on the attractive Southern Peninsula, also walls from 3 to 60 metres. Experienced divers will enjoy the rich caves off Tahiti in the east.

Moorea - Society Islands

Abundant shark population, sometimes in packs of 50 or more. Also Sting Rays, Napoleon Wrasse, Moray Eels and Turtles. Oponohu Canyons off the north coast and Tiki Point off the West Coast are the best shark feed dives in Tahiti.

Bora Bora - Society Islands

Anau is regarded the most prolific Manta Ray Sanctuary in the South Pacific, and whilst there's a good chance of seeing rays all over Tahiti, at Bora Bora you'll see hordes of them, particularly at Teavanui Pass. Its also great for sharks: lemon tips, black tips. Excellent also for snorkelling.

Tahaa & Raiatea - Society Islands

Little tourism in these islands so diving takes on more of an adventure. There's excellent diving off the Hawaiki Resort along the north east coast with the Norsby wreck, an intact 3-masted vessel from 1900 being a favourite with 23 recorded species of Nudibranchs, Drift dives through Miri Miri Pass

offer soft corals and Eagle Rays.

Rangiroa Atoll - Tuamotu Group

The most famous shark diving destination in the South Pacific with over 10 species commonly sighted. There's 2 channels at the northern end of the atoll with fast flowing currents (good for experienced divers), lots of fish and the ocean plummets 1,200 metres so there's a good chance of seeing humpback whales between July and August.

Fakarava Atoll - Tuamotu Group

Very similar to Rangiroa (above) but less touristy. Garvae Pass in the north offers drifts in 3 to 4 knots with silver tips, grey's, hammerheads and the possible white tip encounter. Tumakohua Pass in the south is narrower and more concentrated.

Manihi Atoll - Tuamotu Group

Moderate channel drift dives, good for intermediate and beginners. Lots of rays and sharks.

Tikehau Atoll - Tuamotu Group

Exceptionally rich coral reefs with numerous and often vast schools of fish. Also has two passes with sharks, rays and turtles.

Tonga

Tonga scuba diving is good in places but there are not a great many dive sites or scuba diving operators around the islands. Tonga is most renowned for its caves, drop-offs and pinnacles, as well as the opportunity of diving near whales.

The main island of Tongatapu lacks any outstanding dive features, although there are some excellent walls around the offshore islands with an abundance of marine life. For those after caves, the island of 'Eua to the south offers some good diving.

The Ha'apai Group offers the best colourful coral and small marine life in Tonga around its countless coral reefs. There is just one scuba diving operator in the group, Ha'apai Happy Divers based on Foa Island and they arrange transfers for those staying at the guesthouses at Pangai on adjacent Lifuka Island.

Vava'u offers some excellent drift dives along walls and drop-offs where you'll encounter lots of large marine life including humpback whales (July to Oct), as well as the interesting wreck of a copra steamer right off Neiafu. There are also some good coral reefs with lots of fire coral and several areas with large gorgonian fan grottoes. Visibility is usually excellent, often exceeding 40m. A couple of dive operators are based at the main town of Neiafu and offer full dive courses.

Vava'u also offers some exceptional snorkelling sites which are popular stops on the regular day tours of the island. Coral Gardens off Nuapapu Island and the reef off Mala Island are both excellent for clams, corals and other smaller marine life, and you'll usually be able to hear the singing humpback whales when their around between May and October. Other good snorkelling can be found off Ha'atafu Beach on Tongatapu and around the offshore islands which are all noted for their small marine life.

In all, there are just a handful of scuba diving operators around Tonga. A two tank dive with all equipment will cost from T\$120. Expect to pay T\$500 for a PADI open-water certification course (5-days). There are no live-aboards operating in the islands.

There is no decompression chamber in Tonga - the closest is in Fiji and low-flying aircraft will be used in cases of emergency.

Cook Islands

Cook Islands scuba diving is available on the main island of Rarotonga and to a lesser extent on Aitutaki. However, scuba diving on both islands is limited to the surrounding reefs beyond which the sea drops off dramatically. There are no specialist scuba diving resorts or live aboard diving charters as with some of its south pacific neighbours. That's not to say the scuba diving is not good - there is excellent marine life on Rarotonga, from colourful tropical fish to sharks, manta rays and barracudas and some inspiring 40 foot drop offs around both Rarotonga and Aitutaki. There are a few wrecks around Rarotonga dating from the 1950's to explore but these have been badly damaged by recent cyclones. The best drop-off's on Rarotonga are on the south coast whilst the north coast has a more gentle descent and therefore better corals. A Crown of Thorns invasion has unfortunately destroyed some of these corals but the government has begun a culling project, though too late in the eyes of local dive operators.

Visibility is usually 30-40 metres, most dive sites are within 25 metres and the water is always warm - 25C in July to 30C in December. Experienced divers will not find any challenging dive sights in the Cook Islands but will never-the-less find enjoyable all weather diving conditions. For casual scuba diving, the Cook Islands is great due to the close proximity of dive sites. The small circumference of Rarotonga also means that whichever way the wind blows, access to the protected side of the island is quick and easy.

PADI scuba diving courses are available on both islands. Scuba diving in the Cook Islands is considered very good for both beginners and casual divers as all sights are close together and there is always good diving conditions whichever way the wind blows. Proof of certification is required for the use of equipment. The four independent dive operators on Rarotonga pick up from all hotels around the island as does the one operator on Aitutaki.

There is no decompression centre in the Cook Islands - emergencies are flown to New Zealand by special low-flying planes so travel insurance covering travellers for scuba diving is essential - otherwise you will be faced with a bill of around NZ\$20,000!

Samoa

Samoa scuba diving sites and facilities are slowly being opened up, but the experience here is geared towards general holiday divers and beginners and not for the serious scuba diving enthusiasts. There are of course some very good reefs for scuba diving but these are limited to the south coast of Upolu . Probably the best diving is around the Aleipata Islands off the east coast of Upolu .

There is no decompression chamber in Samoa - the closest is in Fiji.

Other Dive Destinations

While by no means complete, a list of other South Pacific dive sites include The Solomon Islands, Vanuatu, New Caledonia, Tuvalu, and Niue.

The Solomon Islands

Tulagi Island offers wreck diving on the destroyer USS Aaron Ward as well as a tanker USS Kanawha. There is also reef diving in the area.

Ghizo Island also has wreck diving as well as reef and dish dives. Wreck highlights include the 140 metre Japanese transport ship Toa Maru, and two WWII fighter aircraft; an American Hellcat and a Japanese Zero.

Marovo Lagoon- The world's largest lagoon, Marovo covers 700 square kms. and has over 200 islands. Gorogonian fan forests, black coral gardens, giant clams, sea turtles, eels, and barracuda are among the dive highlights.

Vanuatu

Efate Island- The Port Vila area has several dive destinations close by including Mele Reef, Cathedral Cavern and Outboard Reef. The wreck of the clipper ship "Star of Russia" is right in the harbour.

Espiritu Santo Island- is famous for the largest diveable wreck in the world; the 210 metre SS President Coolidge. Also, Million Dollar Point where vast quantities of war materiel were dumped following the end of WWII.

New Caledonia

Grande Terre Island- In the Noumea area, the Passe de Dumbea is known for good shark diving. The Poindimie area is reported to offer good diving.

Isle of Pines- The best diving is at the north end of the Island at Gadji Pass and Oupere Grotto. Strong tidal flows mean abundant marine life and amazing coral and sponge colours. You can also dive some freshwater caves and see huge stalagmites and stalactites.

Tuvalu

Funafuti- on the west side of this atoll is the 33 square km Funafuti Conservation Area. The diving is reported to be good.

Niue

Niue is known for extremely clear water with visibility up to 70 metres. A number of reefs and caves offer excellent snorkelling and/or scuba diving. Beveridge reef, 200 km southeast of Niue is a good bet for a snorkelling or scuba diving stop between The Cook Islands and Tonga.

Panama to Bora Bora

We are now in our second season in the Society Islands and thought we would pass on information we have learned about scuba diving sites between Panama and Bora Bora. In a future article we hope to write about the Western Pacific dive sites. **Ventana** carries a small Bauer Jr. air compressor that fills a tank in about 18 minutes and for many of the areas we visited filling your own tanks (or buddy boating with someone with a compressor) is the only way to dive. In the Tuamotus gas was only available in a few places so take plenty of fuel for your dinghy and compressor motor. Unless otherwise noted in the text commercial dive operators and air fills were NOT available. In Tahiti and the Society Islands the dive operators usually but not always refused to fill tanks without a French hydro stamp. Rules varied from place to place and it was often difficult to tell if there really were rules or if they were just being French. In any event your chances will be improved if you have a current VIP and hydro. In Tahiti the cost of getting the French hydro stamp was reportedly over \$125.

Isla Cocos

Our first stop was Isla Cocos, Costa Rica. This is a National Park. Charges in Cocos are \$15 per day per boat and \$15 per day per person plus an additional \$4 per day to dive. The diving is FANTASTIC and worth the trip and expense. Several of the dives there are drift dives or require someone to stay in the dinghy so it is handy to have two boats or extra crew to swap dinghy chores. We anchored in Wafer Bay and dove the rock at the entrance to the bay, Isla Manulita and Sucia Rock all of which were fantastic with hundreds of lobster, many white tip and scalloped hammerhead sharks, 4' tuna and thousands of smaller fish everywhere. Dos Amigos rock was a bit of a disappointment but we did see many rays. (For additional information on Isla Cocos see the August 2002 SSCA bulletin).

Galapagos

Our next dive stop was Galapagos where there are many commercial dive operations. We did 2 dives at Gordon Rocks with a dive operator and found the water cold and visibility only 35'. We saw Galapagos sharks and black tip reef sharks and quite a few rays. During lunch two 12-foot bull sharks circled the dive boat.

Marquesas

Fatu Hiva-- We had nice diving along the wall about one half mile north of the Bay de Vierges anchorage where a small bay indents the cliff. Five foot tuna, turtles and large octopi.

Tauhuata –Off the point just south of the Hanna Moe Noe anchorage we played with several octopi that had bodies about 14" across- one inked us. We also saw several lionfish, stonefish and some large moray eels.

Hiva Oa- Several excellent dives on the large rock in the entrance to the bay (from a certain angle the rock looks like a silhouette of Dizzy Gillespie). We managed to hand place the dinghy anchor on the lee side of the rock and circumnavigate the rock then follow the rib that extends towards shore.

Nuka Hiva – We did not do any diving here but heard good reports about diving on the rock at the southwest entrance to the bay of Taiohae.

Tuamotus-

In most areas you will be on your own, however in Makemo, Fakarava and Rangiroa there are commercial operators who might fill tanks and who do offer dive trips and certification courses.

Diving the Passes

Drift diving in the passes of the Tuamotus is a special experience and for many will be the best diving you've ever seen. While the conditions are generally fantastic it does require some experience to be comfortable with fast drift dives. Diving with the big guys in the gray suits takes getting used to also – and there are hundreds of them.

If you are not ready for the drift dives then go outside the passes and dinghy along the outer reef about half a mile and you should find a safe place to drop the dinghy anchor and dive the wall free of the strong currents. The walls generally have fantastic coral, in general far healthier than we saw in the Caribbean. Wall dives are also excellent for when the current is flowing out all day long. We found the Cap'n 32 tide tables for Rangiroa to be reasonably accurate. Keep in mind that any heavy swells break over the reef and into the lagoon so the currents may flow out continuously trying to empty the lagoon regardless of the state of the tide. In most of the atolls slack tide may only last a few minutes and 10 minutes after slack the current may be 4 knots in the other direction. Many of the passes get 4' standing waves with current against the sea conditions- this makes it difficult for dinghy drivers so be alert to such conditions.

Though I have been diving for over 30 years I am neither a dive master nor instructor. The following are my suggestions for diving the passes based upon my own experiences.

Dive the passes only on the incoming tide and the closer to slack water the better. Every diver should carry an orange rescue sausage and whistle or horn. Trail a float or be sure the surface conditions are calm enough to allow the dinghy driver to easily follow your bubbles. If your group gets separated everyone should surface immediately and regroup. You may want to get in the dinghy and begin again. Check the current direction and speed while you are still in the dinghy before you start your dive. Start your dive just outside the pass not in the middle where the current flow is strongest. Have everyone suit up with tanks on and be ready to roll over the side at exactly the same time. We found the best way to keep everyone together was by exiting the dinghy or dinghies together with propellers in neutral and BC's deflated. Then immediately swim down while keeping everyone in sight. People floating on the surface or slowly submerging were carried at a different speed and would often get separated. Diving in larger groups offers more opportunity to keep a shark lookout in 360 degrees. If you see something interesting and grab a rock to stop yourself, make certain that everyone in the group does so together. In fast currents it takes only seconds to carry your partners a long ways off. Fortunately the 200' visibility helps keep everyone in sight.

Sharks-

The only injuries we have ever heard of all involve fishing so we make it a point never to fish or be anywhere near even a drop of blood in the water. After a few dives with the sharks you begin to calm down and you can watch for any aggressive behavior. Specific actions to be on the lookout for are circling closer and closer then facing you and putting the pectoral fins down very stiffly, or swimming with a sort of jerky motion as if they are shaking their shoulders. Bumping you is another serious sign. On one occasion we had a shark show aggressive behavior and it alternately swam right up to each of the three of us. Each one of us kicked it in the face with a fin and it backed off. We then departed the area quickly by letting the current take us on into the lagoon. Safety suggestions include keeping on the bottom, getting back to back with others so you can see in all directions (watch your 6 as the fighter pilots say), put your elbows out a bit and try to look bigger and try not to surface when you are near any sharks. Ascending in the open water feels very vulnerable so try to do it away from

any of the big boys. On one occasion I had surfaced and was floating next to the dinghy for about 4 minutes watching the two divers still down when I was bumped by a reef shark who had not been anywhere nearby a moment before. Most of the sharks we saw were reef sharks but at times we did see lemons, silkys, dusky and bull sharks- all more aggressive. In general the farther into the lagoon you go the less sharks you will see.

Raroia

Slack tide seemed to be two hours after Rangiroa low and one and a half hours after Rangiroa High. This is one of the best pass dives in the Tuamotus and we dove it quite a few times. We saw from 50-150 sharks on every dive as well as 4-foot groupers, tuna, large parrotfish and many smaller species. We also had excellent diving on the walls outside the pass.

Makemo

There is a small dive operation here and two boys on **sv Kela** got certified here. We had standing waves at the time of Rangiroa high and for several hours afterwards on the day we arrived at the East pass. We never dove this pass. The West pass at Makemo is excellent and the walls outside are spectacular. Anchoring is difficult near the west pass with coral heads coming up 15 feet off the bottom to grab your anchor whichever way you swing. The walls were better than the pass and we found the south wall the best. Lots of large pelagic fish here- tuna weighing two hundred pounds, silky sharks and two 60 lb. Cubera snappers that followed us one entire dive like lost puppies.

Tepoto-

We spent one calm night anchored outside off Tepoto, which has no pass entrance. The wall was so steep that it was like throwing your anchor against the Empire State building. I had to dive down and place the anchor by hand but the two dives to set and retrieve the anchor were stupendous. The healthiest coral anywhere and teeming with fish. The wall was so steep that the anchor was in 20 feet of water and the stern in over 300'.

Tahanea

We did several dives on the walls outside Teavatapu pass as well as a drift dive in the pass. Our favorite was the wall to the east of the pass. On one pass dive we started during the last 15 minutes of the incoming tide. Slack tide lasted 5 minutes and 10 minutes after the tide change the outgoing current was raging and there were 8-foot standing waves in the pass entrance. In this case surfacing IMMEDIATELY is essential to avoid being swept out the pass where the dinghy would have great difficulty finding you.

Toau

We missed Toau but **sv Lady Starlight** and **sv Bali Ha'i** both reported this as a fantastic stop and possibly the best dive in the Tuamotus. From Amyot go outside the pass and approximately 1 mile north past the point, where two canyons descend to over 230' and you can swim down one and back up the other. No night diving as tiger sharks have been caught there. There is also excellent snorkeling and the locals are very friendly here.

Fakarava

There are dive shops at both passes here but they will only fill French certified tanks. Neither shop is reported to be cruiser friendly. They will take you diving after a checkout dive. We did not dive here but *s/v Lady Starlight* reports the North pass is a dangerous pass and that last year the local dive shop lost divers who spent nearly 24 hours floating in the lagoon even though they were diving on the inflowing tide. Nice diving on the walls outside with manta rays. Fakarava's south pass is reported to be excellent diving with hundreds of sharks during their breeding season in May. Also sightings of manta rays, napoleon wrasse and barracuda. A diver was reportedly lost last year diving on the outgoing tide.

Rangiroa

There are several commercial dive operators here and they have made diving this atoll world famous and justifiably so. Rangiroa was Dee's first post certification dive about 20 years ago and we were anxious to go back and see if it was as great as we remembered. It was still wonderful but the truth is that the other atolls are better diving. The dive magazines don't write about them because no one but cruisers with their own compressors ever get to see them. Our first pass dive in Rangiroa was a bust and we saw very little so on the next try we received some guidance from one of the commercial dive boats and had a much better dive. The walls outside were interesting as well. Just inside Tiputa pass is a fantastic snorkeling area called the aquarium.

Tahiti and the Society Islands

We did not do any diving in Tahiti though there are a number of sites. There are commercial operators in all the major Society Islands. There is also a guidebook available showing the major dive sites in the touristy areas of French Polynesia. This would be the best place to get tanks French certified. There is one dive operation in the Maeva Beach marina and another just north of there that may be able to do this for you. Downtown near Nautisport is PolyIndustrial who can tumble tanks.

Moorea-

In Moorea like Rangiroa and all the Society Islands the dive operators feed the sharks, morays, stingrays, turtles and other fish. It assures that their clients see lots of action but of course alters the creature's natural behavior. An excellent dive here is on the buoys just east of the entrance to Opunohu Bay. There are half a dozen buoys strung out along the reef here or you can also drop your dinghy anchor in the sand if need be. The buoys are sometimes hard to see but if you continue east along the reef you will come upon them. Besides the sharks and turtles expecting handouts the highlights are the Opunohu Canyons and The Roses – plate corals that look like giant roses at about 100 feet. There is also good snorkeling between the anchorage and the east end of the public beach. Another adventure is to dinghy from Opunohu to the first green marker past the Intercontinental hotel. Anchor on the reef side of the marker in 5 feet of water and get in to snorkel with the stingrays. Dozens of them will swim up within arms reach expecting to be fed. If you comply you can pet them and play with them.

Tahaa

We tried two dives on Toahotu pass and have to report that both were unimpressive with only 25' visibility and not much sea life. We did see garden eels inside in the vicinity of the fish traps in only 35' of water.

Bora Bora

There are several dive sites inside the lagoon that are easily accessible from dinghies as well as one site just outside the entrance to the pass to the South. All sites have mooring balls on them and should be easy to find. We found the visibility inside the lagoon a bit disappointing. Near the Southwest tip of the lagoon is Topua Iti motu. There is a drift dive on the Southeast corner of the motu that the dive boats do daily. Jump in the water by the green mark and drift towards the yellow and black marker. You will go right past a good snorkeling area with lots of mooring balls marking it. On the East side of Bora Bora you can anchor North of the Meridien hotel in 8-12 feet near 16 29.1S and 151 42.4W and you will see several mooring balls on the reef to the West. Diving here is reportedly worthwhile for the dozens of manta rays that cruise the channel. We were told to go to the sandy area off the wall in 75 feet of water. Unfortunately on the day we tried it visibility was very poor and we saw no mantas. It may be a dive where local knowledge is helpful. The chart shows a small boat pass through the reef just east of here but we were unable to get through to the wall outside.

It is important to note that we found most of these great dive sites on our own with little outside input. You can do the same so please do not rely on this article as more than a minor roadmap. Get out and explore and you will no doubt find places even better than we did.

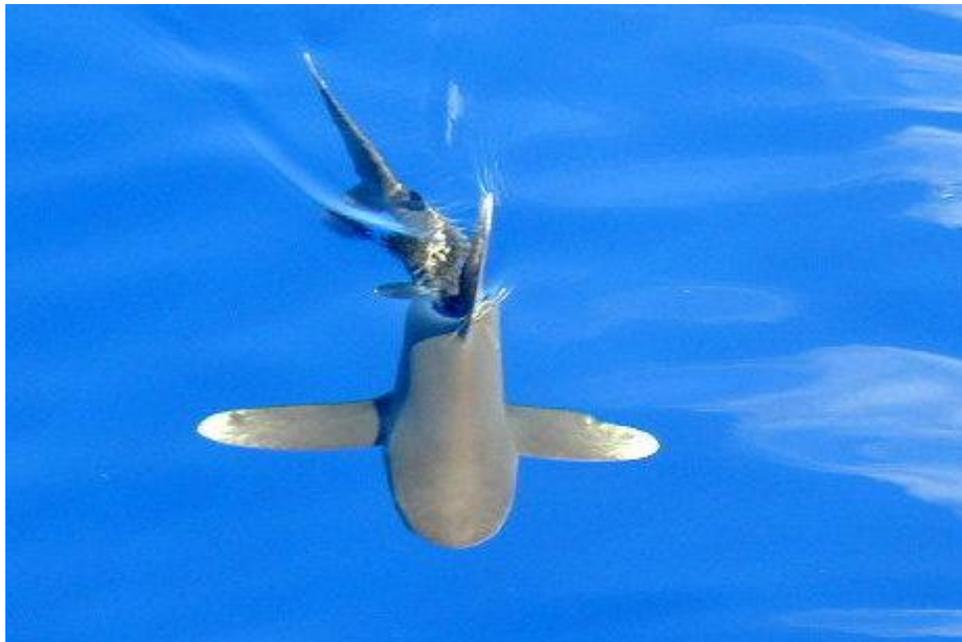
Commodores Rob (KG4PMZ) and Dee (KG4AYO) Dubin

Appendix I- **Ten Minute Rule**

When sailing in the mid ocean shark sightings are not uncommon!! Not that you should not go swimming in mid-ocean, just take care and follow the Ten Minute Rule. Do not swim for longer than ten minutes at a time. If possible a person should also be on watch to see if any uninvited 'toothy guests' drop in for a snack....

Here is a picture taken from Susiutl during the crossing to French Polynesia in 2003. We were in a dead calm area 1000 miles off shore and I went over the side to clean the stuff on the waterline. This oceanic white tip came by to see who was splashing around in *his* ocean. It is a bit unnerving to realize that not all animals see man as being at the top of the food chain!!!!

The **oceanic whitetip shark** (*Carcharhinus longimanus*) is a large pelagic shark of tropical and warm temperate seas. It is named after both its oceanic habitat (living in deep waters), and the white tips on its fins. It is a stocky shark; its most notable features include its rounded fins and the fins' extreme length. It is an aggressive fish which dominates feeding frenzies, and is said to attack more humans than all other shark species combined - as such it is a notable danger to survivors of oceanic ship and plane wrecks. Given its abundance and threat to humans it was a serious concern in the World Wars — for example, a Nova Scotia steamship carrying 1000 was sunk near South Africa by a German submarine and only 192 survived, with many deaths attributed to the oceanic whitetip shark.



Have a great crossing and try to arrive with everybody you left with....

Bob Bechler
Sv SISIUTL

Appendix I I- South Pacific Charts

CHART NAME	CATLG #
NORTH PENDER IS. TO THETIS IS.	3442
VIRGIN IS ANCHORAGES	0
S.F. BAY TO ANTIOCH	0
SAN JOAQUIN R. & DELTA	0
SO. PACIFIC, EAST, SHEET 1	0
NIAUTOPUTAPU & TAFahi	0
TONGA, VAVA'U GROUP	0
WALLIS ISLAND	0
DOUBTLESS BAY AND WHANGAROA	0
CAVALLI PASSAGE	0
WAIKARE INLET	0
WHANGAREI HBR., APPR. TO MARSDEN POINT	0
NAGASAKI HARBOR]	0
ENTRANCE TO SASEBO AND OMURA WAN	0
FIJI, YASAWA ISLAND, WAYA GROUP	1
FIJI, YASAWA ISLANDS NANUYABALAVU	2
FIJI, YASAWA ISLAND, NAVITI	3
FIJI, YASAWA ISLANDS, YAQETA	4
FIJI, YASAWA ISLANDS, NACULA	5
FIJI, YASAWA ISLANDS, SAWA-I-LAU	6
FIJI, YASAWA ISLANDS, YASAWA	7
FIJI, LAUTOKA TO YASAWA	8
FIJI, VITI LEVU	9
KOBE & OSAKA, APPR. TO	16
Eastern So Pac	51
MUGI KO TO KANNOURA KO	59
INDIAN OCEAN, WESTERN PART	72
YURA KO & KII WAN	97
KUSIMOTO KO & APPROS.	99
GREAT NE CHANNEL	103
KURISIMA KAIKYO & APPRS.	104
E. ENTRANCE TO KANMON KAIKYO	127
BINGO NADA & OZUCHI SHIMA	128
AKASI KAIKYO & APPRS.	131
BISAN SETO, E. PART	137
OSAKA WAN, SOUTHERN PART	137
GULF OF ST LAWRENCE TO ST OF JUAN D FUCA	145
KII SUIDO	150
BUNGO SUIDO	151

KYUSHU, NW PART	187
FUKUOKA WAN	190
OUTER BAY OF IMARI, APPRO TO NAGASAKI KO	198
ATLANTIC OCEAN, MIDDLE PART	210
NAGASAKI TO XIAMEN	210
WARD HUNT STRAIT TO ST GEORGE CHANNEL	217
KAGOSIMA WAN	221
OKINAWA GUNTO	226
APPROACHES TO MORETON BAY	235
MORETON BAY	235
BRISBANE RIVER	237
PORT CURTIS	245
CLEVELAND BAY	256
APPROACHES TO HINCHINBROOK CHANNEL	258
PLANS OF THE CAIRNS & COOK TOWN	262
SANDY TO KEPPEL ISLES	345
KEELP TO PERCY ISLES	346
PERCY ISLES TO WHITSUNDAY PASSAGE	347
WHITSUNDAY PASSAGE TO PALM ISLES	348
KYUSHU, GOTO RETTO	359
CAPE MORETON TO SANDY CAPE	365
THURSDAY ISLAND HARBOR	383
GULF OF MEXICO	401
FIJI, PASSES AND ANCHORAGES	416
TORRES STRAITS	447
HOKKAIDO	452
MOLLE CHANNEL & LONG ISLAND SOUND	498
N. PACIFIC, EAST	520
NORTH PACIFIC, EAST	520
WESTPAC, PHILLIPINES & INDONESIA	520
N. PACIFIC, MIDDLE	521
N. PACIFIC, S. CHINA SEA TO SAKHALIN I.	522
PACIFIC OCEAN CENTRAL PART	526
SAN FRANCISCO TO PUNTA SAN TELMO	528
APPRO TO KANMON KAIKYO	532
HAWAIIAN ISLANDS	540
TOKELAU - SAMOA - TONGA - FIJI - N. NZ	605
FRENCH POLYNESIA	607
SO. PAC. OCEAN, FR. POLYN., SHEET 2	621
CABO SAN LAZZARO TO CABO SAN LUCAS	621
CABO SAN LUCAS TO MANZANILLO	622
SOUTHWEST PACIFIC OCEAN	622
SO. PAC. OCEAN, AUSTRALIA, N.Z. SHEET 4	623
CABO SAN QUENTIN TO PUNTA EUGENIA	623
KAGOSHIMA KO & APPR.(KIIRE,ABARATSU ETAL	626

BANDA SEA TO SOLOMON ISLANDS	630
MAUPITI	688
PORTS IN SETO NAIKAI	694
HARBORS IN SETO NAIKAI	698
INDIAN OCEAN, NORTHERN PART	721
ELLICE ISLANDS (TUVALU)	766
CLAREMONT ISLES TO CAPE WEYMOUTH	834
CAPE WEYMOUTH TO CAIRN CROSS ISLETS	835
FIJI, KANDAVU PASSAGE TO KUATA ISLAND	845
VIRGIN ISLANDS (INCL. ST. CROIX)	905
COOK ISLANDS - NORTHERN	979
MINERVA REEFS	985
NAHA KO & YONABARU KO	990
PENRHYN/TONGAREVA	997
GOULBURN ISLANDS TO MELVILLE ISLAND	1005
WOOLI HEAD TO CAPE MORETON	1029
CAPE ARNHEM TO CAPE FOURCORY	1044
ISE WAN (NAGOYA)	1051
IRAGO SIUDO & APPR.	1053
IRAGO SUIDO	1064
PUSAN & MASAN, APPRS. TO	1065
SERUGA WAN	1075
TATIBANA URA & APPRS.	1104
BORA BORA	1107
NORFOLK & PHILLIP ISLANDS	1110
KASAOKA WAN TO MIHARA WAN	1118
NABE SIMA, APPRS TO	1122
TOKUSIMA - KMATUSIMA KO	1126
MIZUSIMA KO	1127
OSAKA WAN, TOMOGASIMA SUIDO	1143
ARIDA & SIMOTU	1144
SUVAROV	1174
TUAMOTUS PASSES AND ANCHORAGES - 3	1175
CENT. PORTION OF TUSIMA (TUNA WAN)	1211
BEPPU WAN	1218
W. PART OF OSUMI KAIKYO (SW KYUSHU)	1222
KYUSHU NO COAST, GENKAI NADA	1228
NAGASAKI & OMURA WAN	1231
FIJI, MOALA	1252
HAWAIIAN ISLANDS HARBORS	1490
IO SHIMA TO MIDARA SHIMA	1527
KANMON KAIKYO	1578
GILBERT ISLAND (KIRIBATI) PLANS	1600
GILBERT ISLAND (KIRIBATI) ANCHORAGES	1615

ELLICE ISLANDS (TUVALU) FUNAFUTI ATOLL	1620
MARQUESAS	1640
FIJI, PLANS IN VITI LEVU	1670
MORETON BAY APPROACHES TO BRISBANE	1673
ALDOPHUS CHANNEL	1937
MATSU SHIMA TO KURO SHIMA	2026
PLANS IN NEW GUINEA	2054
TORRES STRAITS	2321
FRANKLAND ISLAND TO BLIZZARD ISLAND	2344
HONSHU, KYUSHU, SHIKOKU	2347
PALM ISLANDS TO FRANKLAND ISLANDS	2349
CAPE SIDMOUTH	2354
BLIZZARD ISLAND TO CAPE SIDMOUTH	2355
KURIL IS., HONSHU TO KAMCHATKA	2405
NAGASAKI, OUTER APPR. TO	2415
FIJI	2691
AUSTRALIA NORTHERN PART	2759
CORAL SEA & GREAT BARRIER REEFS	2764
NAGASAKI KO & APPROACH TO	2815
SETO NAIKAI, WESTERN SHEET	2874
BANKS ISLAND NEW HEBRIDES	2877
PLANS IN TORRES & BANKS ISLANDS	2878
KUNIE TO BAIE DU PRONTY	2906
CAPE GRENVILLE TO CAPE YORK	2919
NAGOYA & YOKAICHI, APPR. TO	2960
ANCHORAGES ON THE EST COAST OF AUSTRALIA	3088
TONGA, HAAPAI GROUP	3099
TONGA, HAAPAI GROUP	3100
PLANS, KYUSHU(NAGASHIMA KAIKYO,MISUMI)	3112
TAHITI, PORT PHAETON	3137
AMAMI O SHIMA	3237
SANTA ISABEL TO NEW GEORGIA GROUP	3402
ST OF GEORGIA, EAST PT. TO SAND HEADS	3450
TAHITI AND MOOREA	3500
TOKYO WAN	3548
GAZELLE PEN & ST GEORGE'S CHNL N. GUINEA	3553
PLANS IN VIC OF FIFE SOUND & WELLS PASSAGE	3557
WELLS PASSAGE & ADJACENT CHANNELS	3570
BURRARD INLET - DISCOVERY PASSAGE	3579
JERVIS INLET	3589
DISCOVERY INLET, TOBA PASSAGE & ADJ CHANNELS	3594
CHATHAM POINT TO PORT HARVEY	3595
PORT HARVEY TO QUEEN CHARLOTTE STRAIT	3596
PULTENEY POINT TO EGG ISLAND	3597
AO SHIMA TO OOSAKI SHIMA (KURE KO)	3603
BARKLEY SOUND	3671
OKINAWA GUNTO, PLANS IN	3701

OKINAWA & OKINAWA S. PART	3702
SMITH SOUND AND APPROACHES	3776
ENTRANCE TO RIVERS INLET	3779
WEDNESDAY ISLAND TO BOOBY ISLAND	3781
ENDEAVOUR STRAIT	3782
ENDEAVOUR STRAIT	3783
SASEBO KO	3881
NUKU HIVA	3931
HIVA OA, TAHUATA, MOTANE, FATU HUKU	3997
WORLD CHART	4000
BAY OF ISLANDS	5122
NUKU HIVA PORTS	5988
UA HUKA UA POU ANCHORAGES	5989
HIVA OA AND TAHUATA ANCHORAGES	5990
TAHITI AND TUAMOTUS	6000
MARSHALL I., LIKIEP ATOLL	6020
MARSHALL I., AILUK ATOLL	6022
UTIRIK AND TAKA ATOLLS	6023
APPROACHES TO TUAMOTUS	6109
APPROACHES TO TUAMOTUS - 2	6110
MARQUESAS	6198
TAHAA SOUTHERN PART	6281
RAIATEA AND TAHAA - PASSES BETWEEN	6282
TAHAA	6283
RAIATEA SOUTHERN PART	6284
MAKA TEA	6320
APPROACHES TO TUAMOTUS - PASSES	6363
TUAMOTUS PASSES AND ANCHORAGES	6364
TUAMOTUS PASSES AND ANCHORAGES - 2	6365
APPROACHES TO TUAMOTUS - 4	6420
APPROACHES TO TUAMOTUS - 3	6421
HUAHINE	6434
MOOREA, COOKS BAY	6657
MARSHALL I., WOTJE ATOLL WESTERN PART	6819
BREAM HEAD TO MERCURY ISLAND	7601
NEW CALEDONIA SE PART	9361
NEW CALEDONIA NW PART	9362
LITTLE EGG INLET TO HEREFORD INLET	12127
CHESAPEAKE BAY, CHOPTANK RIVER & HERRING BAY	12266
CHESAPEAKE BAY, EASTERN BAY & SOUTH RIVER	12270
GULF OF MAINE & GEORGES BANK	13009
CAPE BLANCO TO CAPE FLATTERY	18003
MONTERREY BAY TO COOS BAY	18010
SAN DIEGO TO SAN FRANCISCO	18022
ST OF GEORGIA - ST OF JUAN DE FUCA	18400
SAN JUAN ISLANDS	18421
ROSARIO ST. S. PART	18429

ROSARIO ST. N. PART	18430
ROSARIO ST TO CHERRY POINT	18431
BOUNDARY PASS	18432
PUGET SND. N. PART	18441
APPLE COVE TO KEYPORT (INSET AGATE PASS)	18446
PUGET SND. S. PART	18448
SEATTLE TO BREMERTON	18449
ST OF J D FUCA , ENTRANCE	18460
PORT TOWNSEND	18464
ST. OF J D FUCA, E. PART	18465
AGATE PASS TO SHILSHOLE	18466
OAK BAY TO SHILSHOLE	18473
DESTRUCTION IS. TO AMPHITRITE PT.	18480
COLUMBIA RIV. TO DESTRUCTION IS.	18500
YAQUINA HEAD TO COLUMBIA RIVER	18520
COLUMBIA RIVER	18521
PORT OF PORTLAND	18526
TILLAMOOK BAY	18558
APPROACHES TO YAQUINA BAY	18561
CAPE BLANCO TO YAQUINA HEAD	18580
COOS BAY	18587
TRINIDAD HEAD TO CAPE BLANCO	18600
POINT ARENA TO TRINIDAD HEAD	18620
S.F. TO PT ARENA	18640
POINT DUME TO PURISIMA POINT	18720
POINT HUENEME TO SANTA BARBARA	18725
SANTA CRUZ CHANNEL	18728
ANACAPA PASSAGE	18729
SAN DIEGO TO SANTA ROSA ISLAND	18740
SAN PEDRO CHANNEL	18746
SAN PEDRO BAY	18749
SANTA BARBARA ISLAND	18756
SANTA CATALINA	18757
SANTA CATALINA HBR, ISTHMUS, AVALON BAY	18759
SAN CLEMENTE ISLAND	18762
SAN DIEGO BAY	18765
SAN DIEGO BAY	18772
HAWAIIAN ISLANDS	19004
HAWAII	19320
HAWAII NE & SE HARBORS	19322
HILO	19324
HAWAII WEST COAST	19327
HAWAII TO OAHU	19340
MOLOKAI, MAUI, LANAI, KAHOO LAWE	19347
OAHU, MOLOKAI, AND LANAI	19351
OAHU	19357
KANEOHE BAY	19359
OAHU	19380
KAUAI	19381
POINT LOMA TO PUNTA COLNETT	21003

GOLFO DE CALIFORNIA, NORTHERN PART	21008
PUNTA EUGENIA TO CABO SAN LAZZARO	21011
CABO SAN LAZZARO TO CABO SAN LUCAS	21014
CABO SAN LUCAS TO MANZANILLO	21017
MANZANILLO TO ACAPULCO	21020
BAHIA DE TODOS SANTOS (ENSENADA)	21021
ACAPULCO TO PUERTO MADERO	21023
LA PAZ HARBOR	21025
PUERTO MADERO TO CABO VELAS	21026
CABA VELAS TO PUNTA MALA	21030
ISLA DEL CANO TO ISLA LA PLATA	21033
PLANS OF THE W COAST OF BAJA CALIF	21041
BAHIA DE SAN QUENTIN TO ISLA CEDROS	21060
BAHIA DE SAN QUENTIN	21061
ISLA SAN BENITO, BAHIA SUR	21062
WEST COAST OF BAJA CALIFORNIA	21080
PUERTO SAN BARTOLOME	21081
PUNTA ABREOJOS TO CABO LAZZARO	21100
GUAYMAS	21182
MATZATLAN AND VICINITY	21301
ACAPULCO	21401
GOLFO DE NICOYA	21544
PUNTA ARENAS AND APPROCHES	21545
WEST COAST OF COSTA RICA	21560
PUNTA QUEPOS ANCHORAGES	21561
GOLFO DULCE	21562
GOLFITO	21563
ISLA DE COIBA	21583
MORRO PUERCOS TO PANAMA	21601
APPROACHES TO PANAMA CANAL	21602
APPROACHES TO BALBOA	21603
THE PANAMA CANAL	21604
ISLA DEL COCOS	21621
ISLA DE GUADELUPE ET AL	21661
GALAPAGOS ISLANDS (ARCH. DE COLON)	22000
GULF OF PARIA TO MARONI RIVER	24028
LA GUAIRA TO PUNTA UNARE (VENEZUELA)	24440
CARIBBEAN SEA, EASTERN PART	25001
HISPANIOLA TO SANTA LUCIA	25008
BAHIA DE LAS CALDERAS, DOM. REP.	25445
ANEGADA PASSAGE, WITH ADJACENT ISLANDS	25600
CABO GRACIAS A DIOS TO PUERTO COLOMBIA	26000
GRAND CAYMAN TO HAITI, INCL. JAMAICA	26010
GRAND CAYMAN TO HAITI, INCL. JAMAICA	26011
JAMAICA	26120
CABO CRUZ TO SANTIAGO DE CUBA & JAMAICA	26217
WINDWARD PASSAGE (CUBA) TO JAMAICA	26219
LORD HOWE ISLAND	74141
CLARENCE STRAIT	74392

NEW CALEDONIA TO NEW ZEALAND	76020
FIJI - TONGA TO NEW ZEALAND	76030
CAPE MARIA VAN DIEMEN TO TUTUKAKA HEAD	76040
APPROACHES TO OPUA	76041
MANUKAU HBR	76050
AUCKLAND HARBOR	76053
MERCURY BAY TO TOWN POINT	76054
CAPE EGMONT TO MANUKAU HARBOR	76060
COOK STRAIT	76070
PORT NICHOLSON,LUMBTON HBR, EVANS BAY	76071
CAPE FOULWING TO D'URVILLE ISLAND	76080
COOKS STRAIT ANCHORAGES,CROISILLES HBR	76081
POVERTY BAY TO CASTLE POINT	76160
APPROACHES TO NAPIER	76161
MAYOR ISLAND TO POVERTY BAY	76170
TAURANGA HARBOR	76171
RAOUL ISLAND	76181
CAROLINE I. FARAULEP TO PALAU	81002
CAROLINE I. HELEN REEF	81127
CAROLINE I. PALAU ISLANDS	81141
CAROLINE I. PALAU ISLANDS NO. PART	81145
CAROLINE I. PALAU, TORGEL MLUNGUI	81148
CAROLINE I. PALAU, ARANGEL & KOROR CHNLS	81151
CAROLINE I. PALAU, MALAKAL HARABOR	81155
CAROLINE I. NGULU ISLANDS	81166
CAROLINIE I. YAP ISLANDS	81187
CAROLINE I. YAP ISLANDS, TOMIL HARBOR	81187
CAROLINIE I. ULITHI ISLANDS	81209
NGATIK ATOLL	81427
CAROLINE I. SENYAVIN ISLANDS	81435
CAROLINE I. PONOPE HARBOR	81453
MARSHALL I., UJELANG ATOLL	81511
MARSHALL I., PLANS	81557
MARSHALL I., WOTJE ATOLL	81604
TRONGI AND BIKAR ATOLLS	81626
WAKE ISLAND	81664
WAKE ISLAND AND MARCUS ISLAND	81664
MARSHALL I., KWAJALEIN ATOLL SO. PART	81711
MARSHALL I., MALOELAP AND AUR ATOLLS	81711
MARSHALL I., KWAJALEIN ATOLL	81715
MARCHALL I., NAMU ATOLL	81723
MARSHALL I., AILINGLAPALAP ATOLL	81729
MARSHALL I., ARNO ATOLL	81791
MARSHALL I., MILI ATOLL	81796
CAROLINE I. KOSRAE TO NGATIK ATOLL	81816
MARSHALL I., JALUIT ATOLL	81817
CAROLINE I. NGATIK TO NAMONUITO ISLAND	81819
MARSHALL I., PLANS - 2	81830
BISMARCK ARCH & SOLOMON ISLANDS	82010

SOLOMON ISLANDS	82015
SOLOMON TO NEW HEBRIDES	82020
VANUATU	82025
NEW CALEDONIA TO, FIJI, NEW HEBRIDES	82030
NINIGO GROUP	82046
MANUS ISLAND AND APPROACHES	82060
MANUS IS., SEEADLER HARBOR	82071
PASSAGE BETWEEN N. IRELAND & N. HANOVER	82093
KAVIENG HARBOUR	82107
BLANCHE BAY (RABAU)	82192
LOLOBAU IS. TO WILLAUMEZ PENNINSULA	82211
BOUGAINVILLE	82244
BOUGAINVILLE TO GIZO ISLAND	82253
NEW GEORGIA GROUP	82304
SANTA ISABEL - WESTERN PART	82349
MALAITA ISLAND TO SANTA ISABEL ISLAND	82356
INDISPENSABLE STRAIT	82367
GUADALCANAL & NGGELA GROUP	82374
RUSSELL ISLANDS	82384
SANTA CRISTOBAL	82412
SANTA CRUZ ISLANDS	82449
SANTO, NEW HEBRIDES	82543
ANCHORAGES IN NEW HEBRIDES	82555
MALO TO EFATE NEW HEBRIDES	82564
EFATE ISLAND NEW HEBRIDES	82571
PLANS TO NEW HEBRIDES & ADJ ISLANDS	82587
LIFU-UVEA PASSAGE, LOYALTY ISLANDS	82668
EASTERN APPROACHES TO NOUMEA N. CALDONIA	82684
NOUVELLE CALEDONIA SE PART	82684
WESTERN APPROACHES TO NOUMEA	82685
NOUMEA NEW CALEDONIA	82690
GILBERT ISLAND (KIRIBATI)	83005
SAMOA - TOKELAU - PHOENIX ISLANDS	83010
CHRISTMAS IS. TO PHOENIX ISLANDS	83015
Iles Marquises Islands (South Pacific Ocean)	83020
TAHITI TO MANUAE	83021
Makemo to Tatakoto (Omega)	83022
TAHITI TO TAKA ROA AND MAKEMO	83023
RANGIROA TO KATIU	83023
Hao to Fangataufa (Omega)	83024
Iles Tuamotu to Iles Gambier (Omega)	83025
SAMOA ISLANDS	83026
SAMOA ISLANDS	83026
TONGA	83030
FIJI	83033
Fiji - Iles de Horne (Omega)	83034
PHOENIX ISLANDS	83037
FIJI - SAMOA - TONGA	83039

PHOENIX ISLANDS	83101
PHOENIX ISLANDS, CANTON ISLAND	83105
CHRISTMAS ISLAND	83130
KINGMAN REEF	83153
PALMYRA	83157
FANNING ISLAND	83158
NUKU HIVA	83207
Hiva Oa, Tahuata & Motane	83218
SOUTH PACIFIC ISLANDS	83225
Archipel Des Tuamotu Iles Gambier	83251
Ile Mangareva (Iles Gambier)	83252
Iles Gambier - Southern Part	83253
Rade de Rikitea	83254
Muraroa to Fangataufa	83255
TAHITI AND MOOREA	83382
PAPEETE HARBOR	83385
HUAHINE TO MAUPITI	83392
RAIATEA NORTHERN PART	83393
BORA BORA	83397
COOK ISLANDS	83425
COOK ISLANDS	83425
SAMOA WESTERN - SAVAI'I AND UPOLU	83473
SAMOA, UPOLU HARBORS	83476
SAMOA ISLANDS	83484
Isles Wallis, (South Pacific Ocean) (Iles Wallis-Lleuvea)Plans: Mouillages de Mua And Mata-Uta, Passe Honikulu NOTE:Chart Error - Correct coordinates for the Passe Honikulu are:South 13deg 23.5 min,West 176deg 13.0 min	83495
Fiji to Tonga Islands (Omega)	83500
TONGA, VAVA'U GROUP	83555
Tonga Islands	83560
TONGA ISLAND PLANS	83563
TONGA, APPROACHES TO NUKA'ALOFA	83567
Fiji Islands - Western Part	83570
Suva and Approaches, Plan: Suva Harbor	83572
Approaches to Lautoka and Vatia Wharf, Plans: A.Lautoka, B. Vatia Wharf	83574
Fiji Islands - Southeastern Part, Plan: Ono-i-lau	83580
FIJI, EASTERN ARCHIPELAGO	83582
FIJI, VITI LEVU, EAST COAST TO NAIRAI	83584
Fiji Islands - Northeast Part	83590
FIJI NORTHERN PARTS	83594
FIJI, VANUA LEVU	83597
FIJI, SUVA HARBOR	83605
FIJI, VATU'I'RA CHANNEL	83611
JOHNSTON ATOLL	83633

OMAE ZAKI TO MIKI ZAKI	97180
KII SUIDO, APPR TO	97200
IYO NADA & APPROACHES	97227
KOBE KO	97229
HIROSHIMA WAN	97267
KAGOSHIMA WAN (S. HALF-PARTIAL)	97342
NAKAGUSUKU WAN	97469
MOORINGS GUIDE TO TAHITI	NONE
MOORINGS GUIDE TO TONGA	NONE

Appendix III - **Abandon Ship Bag**

ABANDON SHIP SUPPLIES

Reference: Survivor written by Michael Greenwald and Edited by Steve Callahan (Adrift) and Dougal Robertson (Survive the Savage Seas)

This book should be required reading for anyone going out on the big Pacific. It has suggestions for even those who cannot catch fish; i.e. use pantyhose for gathering plankton.

Sonrisa carried 4 Abandon Ship Bags. The bags were each purchased from West Marine. In our list the bags are called MOB's (man over board) bags. The uses of all the items are spelled out in the book Survivor. Each bag had life preservers placed around it so that it would float when thrown over. We used the one offshore life jacket inflatable PFDs with harness and automatic inflator on each bag. On the heaviest bags we had a second standard life vest (the commercial type you are to use in a life raft) also tied to the bag. In addition, we tied all four bags together with lines. There was a line to tie the bags to the life raft. And we included one of the blue West Marine water jugs ½ full tied to the last bag. If you only fill the water jug ½ full of water, it will usually float. You need to test your jug. We carried 2 water makers in these bags (see the list). We packed as many Datrix packets in the bags as we could. The count of Datrix items are not correct in the list. We also tried to spread items over several bags just in case some bags didn't make it on board the life raft. We had a white Persian aboard named Nube, so we had food for him too.

You need to discuss who is going to do what in cause you have a sinking situation. We had a Galaxy Inmarsat-C that would put out an automatic distress signal with location that was preprogrammed. So all one needs to do was press the distress button. This device was also useful for when we could not get weather through the Furuno weather Faxes or could not connect through the computer (and this does happen) we could always get written marine weather for our location (free) on the Inmarsat-C. Jim Coreman had written the software that runs on this device.

In addition to the above, Sonrisa carried 2 lift rafts. One was a 6 person Switlik life raft and a Tinker. We carried the Tinker because it is rowable and sailable. After reading about all the poor people that had been in life rafts that had drifted by islands unable to get ashore because the life raft just drifts on the current, we decided we wanted something we could get into and sail ashore.

Our best advice is read the book and make your own list and decisions. We had a friend on a Valiant 40 that sunk in 4 minutes. The wife had to go overboard in her nightgown, so plan ahead. It is not always the reefs, but there are a lot of floating containers that float just under the water

line. These containers fall off a ship, and the ship sails on making no attempt to pick them up. And of course there are whales that sometimes do not like boats. There are some unlighted markers that are around 2 to 8 degrees north that are quite large. So make sure someone is on watch.

Ditch Kit Essentials

Watershed's Ultimate Ditch Bag –15-32”

Everything in freezer Ziplocks

Waterproof VHF radio powered by
alkaline batteries

-Garmin 720

-Standard Horizon's HX260S or
HX460S Mini

-Icom's IC-M2A

2 complete changes of batteries

Icom ICA5 radio to talk with
commercial aircraft

Spare 406 Epirb

Waterproof flashlight w/ LED bulbs
C Crane Co makes a good one

Jugs of water to last a few days

Supply of favorite seasickness medicine

Waterproof sunscreen

First aid kit (Datrex makes a good one
with many other products)

Bar of soap in watertight container

Tooth brushes, tooth paste

Antibiotic cream to add to first aid kit

Datrex- water packets,
36 200-calorie bars

At least one water bottle-
nalgene lasts longer

A space blanket- datrex makes one
w/ sleeves

Fishing kit

Small spear gun

Folding boye knife or similar

Swiss army knife for its versatility-
though it will rust

Waterproof matches
Photocopies of your passport,
 shot records, boat documents
 & other important documents
Credit card and some cash in \$20
Several lengths of light nylon line
Roll of duct tape
Patch kit for raft
Flares- lots of them
 At least 14 red aerial flares
 4 parachute flares
 1 each smoke flare-
 handheld & floating
 6 handheld signal flares
Hand held mirror
Small rescue strobe- get one that
 uses the same batteries as your VHF
Light & whistle should be on each
 life jacket
Another whistle for bag
sea-dye marker
Para-foil rescue kite
waterproof notebook (rite in the rain) plenty of pencils
Davis Mark III sextant
Garmin's Etrex GPS
Hockey puck Hand Bearing
 Compass
Waterproof quartz wristwatch
Deck of cards
Rescue quoit w/ floating line
Hand held water maker
Two weeks worth of any
 prescription drugs
Sea anchor for the life raft
 w/ a swivel & 90 feet of 3/8
 line
two can openers

BAG	Items	Count
MOB 1	Advil	
MOB 1	Agrylin	
MOB 1	Bandages	
MOB 1	Batteries – C	8
MOB 1	Calcium	
MOB 1	Catheter	
MOB 1	Centrum Silver	
MOB 1	Dental Floss	
MOB 1	Dial soap	3 bars
MOB 1	Dividers	
MOB 1	Enema	
MOB 1	fishing hooks	
MOB 1	Hand sterilizer lotion	
MOB 1	Kerri lotion	
MOB 1	Kerri Lotion	
MOB 1	lighted Magnifying glass	
MOB 1	Lipitor	
MOB 1	Mini-EPIRB	
MOB 1	package of food	1
MOB 1	package of our food	1
MOB 1	parachute flares	1
MOB 1	Plotting plastic ruler	
MOB 1	power bars	6
MOB 1	power bars	5
MOB 1	Datrex Dry food	1
MOB 1	Prilosec	
MOB 1	Shampoo	
MOB 1	spear that spreads-out for spear gun	1
MOB 1	suite solar	
MOB 1	Toothbrush	1
MOB 1	Vicodin	
MOB 1	Vicodin	
MOB 1	Watermaker Pur 06	
MOB 2	1 pair panty hose – plankton	
MOB 2	Aloe Verz lip chap stick	
MOB 2	Antibacterial Wipes	
MOB 2	Batteries – C	6
MOB 2	Batteries AA	24

MOB 2	Blanket Solar	
MOB 2	Celestial Calculator and book	
MOB 2	Cortizone-10 cream	
MOB 2	Fishing line	
MOB 2	Fishing small kit	
MOB 2	Flashlight	
MOB 2	Garmin EPIRB with GPS	
MOB 2	Hand - held spear gun	
MOB 2	Kitty cat bowl	
MOB 2	Kitty Cat Claw Clippers	
MOB 2	matches	
MOB 2	Motrin IB	
MOB 2	Neosporin	
MOB 2	Datrix	4
MOB 2	Papaya	
MOB 2	Parachute flares	2
MOB 2	Phisohex	
MOB 2	power bars	12
MOB 2	Datrex	4
MOB 2	Solarcaine	
MOB 2	spear that spreads-out for spear gun 1	1
MOB 2	Suite Solar	
MOB 2	Sun tan lotion	
MOB 2	toothbrush	1
MOB 2	Seasickness patches	
MOB 2	Vitamin C	
MOB 2	waterproof notebook	
MOB 2	Waterproof Tape	
MOB 3	Bag of Nube's food	
MOB 3	bandages	
MOB 3	Batteries - C	8
MOB 3	Batteries - C	8
MOB 3	Batteries AA	24
MOB 3	clothes -Long johns, panties, and socks	
MOB 3	Sylvia	
MOB 3	Clothes -longjohns, underwear, socks -	
MOB 3	John	
MOB 3	cotton swabs (small package)	
MOB 3	cup (Plastic)	
MOB 3	flashlight	

MOB 3	gloves rubber (medical)	
MOB 3	GPS - Garmin	
MOB 3	life preserver	
MOB 3	Package of our food	
MOB 3	pencil sharpener	
MOB 3	pencils wooden	
MOB 3	power bars	6
MOB 3	Datrex	4
MOB 3	thermal blanket	1
MOB 3	Toothpaste	
MOB 3	watermanker PUR 35	
MOB 4	bag of Nube dry food (our cat)	
MOB 4	Batteries – C	8
MOB 4	Flashlight	
MOB 4	Hose	
MOB 4	Keri-Lotion (small)	
MOB 4	Krimpers for fishing wire	
MOB 4	Lifepreserver	1
MOB 4	Matches	
MOB 4	Datrex dry food	2
MOB 4	Parachute flare	3
MOB 4	power bars	6
MOB 4	power bars	6
MOB 4	power bars	4
MOB 4	Sea Anchor	
MOB 4	Ship's Papers	
MOB 4	spear that spreads-out for spear gun 1	1

Appendix IV - Recommended Books & Websites

Book Lists

Coconut milk runs recommended book list

Other info

Noonsite- how to email them at sea

List of Helpful Websites

Our website - <http://groups.yahoo.com/group/pacificpuddlejump/>

General-

Cruising site- <http://www.callipygia600.com/callnugget/allcruising/clinks.htm#six>

French for cruisers- <http://frenchforcruisers.com/ffc-cheatsheet.htm>

SSCA links- <http://ssca.org/links/links.htm>

Visas-

France - <http://www.info-france-usa.org/visitingfrance/usvisas.asp>
www.tahiti-ocean.com/clearance.html

US - http://travel.state.gov/travel/tips/brochures/brochures_1229.html#f

Health-

Center for Disease Control & Prevention - <http://www.cdc.gov>

World Health Organization - <http://www.who.int/en/>

Weather-

Don on Summer Passage

http://www.csus.edu/indiv/f/foxs/Summer%20Passage/sumpas_index1.html

Buoy weather- <http://buoyweather.com/>

NOOA weather - <http://www.nws.noaa.gov/om/marine/home.htm>

- <http://www.opc.ncep.noaa.gov/>

Pangolin - <http://www.pangolin.co.nz/index.php>

Yotreps- <http://www.pangolin.co.nz/yotreps/index.php>

Essential site - http://www.franksingleton.clara.net/essential_sites.html

Nets- Pacific Seafarer's Net - <http://www.pacsea.org/>

Dock side - http://www.docksideradio.com/sw_brdest.htm

Short wave radio - <http://www.ac6v.com/swl.htm>

From The Coconut Milk Run doc

Books we recommend

We loaded up on books before leaving and found some more useful than others:

- Exploring the Marquesas was given to us as a gift just before leaving Mexico. Great book and worth carrying though info was a bit outdated.
- Charlie's Charts provided decent coverage through popular stops in French Polynesia. Quality isn't as good as we got used to on the West coast, but things change so much and the area is so vast that it is quite hard to prepare a quality cruising guide.
- Landfalls of Paradise was a good book to read before arriving at (or even leaving for) a destination. The chapters are short and you get a good briefing before actually arriving. Content is obviously limited by necessity.
- South Pacific Anchorages was almost never used. It does provide better coverage of less-visited areas than other books though. Good as a cross-check of information.
- World Cruising Handbook was duplicative of Landfalls of Paradise in many ways – but this book covers the world. Again, good to read the appropriate chapter before going somewhere.
- World Cruising Routes is a great planning guide to use while dreaming of going somewhere. Essential resource, but limited use.
- Passport to World Band Radio provides excellent coverage of what frequencies to use throughout the world for listening to programs over your HF radio. The guide was invaluable during the September 11 incident but otherwise has gone unused as we're not big news junkies. If you're into NPR, this guide will be your best friend.
- We have several Dashew books. Offshore Cruising Encyclopedia was useful during outfitting but doesn't get much use now. Mariner's Weather Handbook is a good teaching aid and was helpful for learning about squalls and teaching us basic forecasting. I'd like to read the rest of the book but for now is reference text. Surviving the Storm hasn't been opened yet.
- Bowditch and Chapmans rarely see daylight.
- Storm Tactics and the Drag Device Database are the most tactical books for heavy weather we've found and learning gleaned from these two books make up 90% of our storm survival strategy.
- In addition to your engine manual, look into getting a shop manual and a parts manual.

Noonsite email gateway

Welcome to the system that allows you to retrieve any information on Noonsite as plain text documents via email, without the need for web access. You can request any page if you know the address, by sending 'get' followed by the page to text@noonsite.com, however there are some additional features for retrieving country pages.

In order to receive the list of Noonsite countries, send an email with the following message:

To: text@noonsite.com
Subject: (leave blank)
get Countries

This will return an alphabetical list of countries. Choose the country you are interested in, and send an email as follows:

To: text@noonsite.com
Subject: (leave blank)
get CanaryIslands

You will next receive an email with the index to that country. To assist downloading over a slow link, all country and port pages are divided where possible into subsections less than 5 kilobytes. The Country Index will indicate the size of the whole Country, as well as the size of each subsection. For example, the Canary Islands Index:

CanaryIslands/All (8.2kB)
CanaryIslands/Profile (3.3kB)
CanaryIslands/Formalities (3.2kB)
CanaryIslands/LasPalmasdeGranCanaria/All (20.5kB)
CanaryIslands/LasPalmasdeGranCanaria/Profile (2.7kB)
CanaryIslands/LasPalmasdeGranCanaria/RepairFacilities (4.2kB)
etc.

Countries and ports of less than 5 kilobytes will not be divided, and a request can be made for the whole document (eg `get CanaryIslands/Arrecife/All`). If a page is subdivided, then getting '/All' is identical to requesting each subsection listed below it in turn.

It is possible to request up to 10 pages in one email, by placing multiple 'gets' in a document, one on each line. For example:

To: text@noonsite.com
Subject: (leave blank)
get CanaryIslands/Profile
get CanaryIslands/Formalities
get CanaryIslands/LasPalmasdeGranCanaria/RepairFacilities

If you have any problems, we can be contacted at help@noonsite.com. A crude attempt at filtering spam means any messages over 4kB are silently dropped. This is an experimental service, so any feedback will be gratefully received.

Ivan Cornell
noonsite.com

A – Z Cruiser’s Dictionary

By

Jeanne Pockel

A dictionary for boaters.

This extremely useful cruising dictionary has been compiled over a period of 17 years from personal cruising experience on their sailing yacht Watermelon and from various other qualified sources. The author, Jeanne Pockel, and her husband Peter left Boston to cruise for a couple of years aboard their Jeanneau Sun Fizz. Seventeen years later they are still “cruising for a couple of years” and Jeanne has graciously offered her gold mine of information to assist fellow cruisers as well as those planning to follow in their wake.

If you cannot find what you're looking for in Jeanne's DICTIONARY then please go to her very comprehensive online CRUISING FAQ database (<http://www.cruiser.co.za/faq.asp>). Questions from visitors to her site as well as the answers are posted on the "Q & A Database" page.

This cruising dictionary will always be a "work in progress" and this ebook will be updated from time to time. Should you wish to be notified when an update is available, kindly contact Jeanne at watermelonjp@aol.com with "Ebook updates" as the subject of your email.

Visit JeanneP's websites:

Sailing Yacht Watermelon <http://www.cruiser.co.za/hostmelon.asp>

MV Watermelon <http://www.sailblogs.com/member/mvmelon/?xjMsgID=4073>

This ebook is FREE and for free distribution.

Download from: <http://www.cruisingconnections.co.za/ebooks.htm>

Visit the above webpage for more marine ebooks of special interest to cruisers & sailors.

This edition: Dec.'05

A

ACETIC ACID - Essentially, what makes vinegar sour. If you can obtain acetic acid, which is diluted 1:25 with water to make “artificial vinegar”, you can have a year’s supply in a litre bottle, cheaply and compactly. Flavor it with wine, apple cider, herbs, and it’s a reasonable substitute for fermented "gourmet" wine or cider vinegar. Try a Chemist (Pharmacy), or in some countries, an industrial chemicals supplier. Chemical symbol for Acetic Acid: CH₃COOH (See “Vinegar”)

ACETOMINOPHYN - (For example, Tylenol®). In Australia, NZ, is called Paracetamol. Same thing, different name. The only painkiller that should be used if Dengue Fever is suspected. Liver damage can occur if taken in too great quantities, or with alcohol.

ACID - Various types of acid are useful on a boat, and we probably carry all of them. Always dilute acid by pouring the acid slowly into water, not by putting water into acid. (See “Acetic”, “Citric”, “Hydrofluoric”, “Muriatic”, “Phosphoric”, “Oxalic”, “Tartaric” acids, “Stain Remover”, “Vinegar”, “Heads”).

ALLERGIES - Some marine toxins, such as from jellyfish, cause extreme allergic reactions. Our doctor recommended that we carry at least one type of liquid antihistamine (such as Children's Benadryl) as well as antihistamine pills as a preventive measure against reactions to new substances. In the event of a severe allergic reaction you may not have time to reach professional medical help. The liquid is faster-acting than the pill form and is more easily swallowed, which can be important if reaction causes swelling of throat and airway passages. If you carry Children's Benadryl, be sure you adjust the dosage for an adult. Better yet would be an "Epi-Pen" which is a premeasured dose of injectable epinephrine. It is most commonly provided to people with severe allergies (such as to bee stings, peanuts, fish, etc.) (See "Charcoal Tablets"; "Scombroid Poisoning")

ALGAECIDE - Algae in your fuel tank will break down diesel and deposit water. In the tropics it can form quickly and clog fuel filters. Many marina fuel docks in the tropics sell an additive to handle algae. It is worth carrying. For potable water, Sodium Metabisulphide, the bactericide that is used to "pickle" the PUR desalinator membrane, is a good water tank algaecide, though the taste is dreadful. (See "Water Filter")

ALUMINUM - Extremely vulnerable to electrolysis. We do not recommend for cooking utensils, or storage containers. (See "Rust")

ANCHOR - be sure anchor is locked securely before making any passage (we secure ours in chain locker so there is nothing on deck to be caught by green water). In foul anchorages, it is helpful to buoy the anchor with a trip line. In very deep foul anchorages it may be necessary to buoy the anchor rode to prevent it from so tangling with the rock and/or coral on the bottom that it is hopelessly fouled. (Danger in areas with heavy swells is that rode fouls straight down leaving no catenary - has broken rode or bow stem of a number of boats. (See also, "Fenders"; "Fouling"; "Recycling")

ANCHOR LIGHT - The April 1998 SSCA bulletin had two do-it-yourself automatic anchor lights, to turn on at sunset, off at sunrise.

ANGIOSTRONGYLIASIS - ("heart-lung worm") is a relatively rare but serious parasite that comes from locally grown lettuce or Bak Choy, but is prevalent in Fiji, Tonga, Hawaii, Tahiti; reported in Puerto Rico. The parasite's eggs are deposited by land snails that crawl and feed on the leafy vegetables - are found in shrimps, crabs, fish. Care must be taken to wash thoroughly, although does not always eliminate infective larvae. For shellfish, boiling for 3-5 minutes, or freezing for 24 hours will kill the larvae. (Source: "Control of Communicable Diseases in Man", 1990, An official report of the American Public Health Association.)

ANTIBACTERIAL SOAP - Such as Softsoap™ (and Softsoap Hypoallergenic works in salt water), excellent for bathing and for first cleansing of cuts and abrasions. This is not the same thing as PhisoHex Facial Wash (which is for acne). When we ran out of, and could not get in Australia or Western Pacific islands, got the first Staph Infection in nine years. Any Pacific Island nation where they keep pigs, particularly French Polynesia, you would be wise to carefully disinfect all insect bites, especially the sand flea ("no-see-ums") bites, or they will become infected, and we have seen lots of nasty scars from them. N.B. Treat cuts and scratches aggressively in the tropics.

ANTIBACTERIAL TABLETS - Water purification tablets: Milton's (mfn'd. by Proctor & Gamble in England for Aust. consumption. AUD\$6.85 for 30 tablets). Also in Australia, AMCAL, AUD\$4.95 for 30 tabs. Also made in England. As are AquaTabs sold in West Marine for a lot more money. You can also find them in the baby bottle section of stores in Malaysia, Thailand,

and Singapore, various labels. Another option is sodium metabisulphide, used in Australia (and other places) to sterilize home beer-making bottles and equipment. It works, and is the same stuff that is used to "pickle" the membrane in small water desalinators. But it smells, and water treated with it needs to be filtered through a charcoal filter. (See water filters)

“ARMOR-ALL™” - We have heard reports that it should not be used on rubber dinghies because the silicone eventually migrates through the fabric and loosens the glue, letting go of the seams, which are then unrepairable because of the silicone.

ASPIRIN - Although aspirin is my pain tablet of choice, it is important to note that if Dengue Fever is suspected, do not give aspirin or Ibuprofen. Only acetaminophen (or Paracetamol in Australia, NZ) is safe.

ATMOSPHERIC PRESSURE - The United States' insistence on giving barometric readings in inches of mercury seems, to my mind, to be quite silly. Less than two-tenths of an inch of mercury is the difference between low pressure & standard atmospheric pressure. So out of my own personal need, I've drawn up a small conversion table for atmospheric pressure in inches of mercury & in hectopascals (or millibars). You will find it easier to keep track of weather patterns when you only have to keep track of whole numbers. A low pressure system at 29.77 inches of mercury doesn't seem that much different from a high pressure system at 30.59 inches. For me, a gradient of 1006 to 1036 seems to be easier to recognize and understand.

So, for what it's worth, here are the two tables.

Inches of Mercury	Millibars or Hectopascals	Millibars or Hectopascals	Inches of Mercury
29.2	988.8	1004	29.65
29.3	992.2	1006	29.71
29.4	995.6	1008	29.77
29.5	999.0	1010	29.83
29.6	1,002.4	1012	29.88
29.7	1,005.8	1014	29.94
29.8	1,009.1	1016	30.00
29.9	1,012.5	1018	30.06
30.0	1,015.9	1020	30.12
30.1	1,019.3	1022	30.18
30.2	1,022.7	1024	30.24
30.24	1,024.0	1026	30.30
30.3	1,026.1	1028	30.36
30.4	1,029.5	1030	30.42
30.5	1,032.8	1032	30.47
30.6	1,036.2	1034	30.53
30.7	1,039.6	1036	30.59
30.8	1,043.0	1038	30.65

B

BACKPACK - Don't carry money in pack - use fanny pack or money belt (back pack is too easily picked). On busses or trains, watch out for thieves who help you put your backpack onto the rack directly over your head, only to loot it while you are riding. At the risk of sounding too cynical, very helpful locals sometimes have ulterior motives.

BAMBOO SKEWERS - More useful than we ever expected. Useful as a disposable stirring stick for small amounts of epoxy; as filler in stripped wooden screw holes; for cleaning out small diameter tubing; etc., etc. We even use them for cooking at beach barbecues.

BIMINI - Sailing in the tropics won't be very much fun if you can't get out of the sun during the day while sailing. Fitted with PVC gutters, makes a good passive rain catcher as well.

BLACK MARKET MONEY CHANGING - We have never encountered or tried this, but have been warned by others that one runs the risk of being short-changed. If you decide to risk changing money on the black market, do not hand over your money until you have personally counted the local currency given to you. Smarter people than us have been cheated badly.

BODY ODOR - A landlubber friend of ours, a travel agent, commented once to us how so many yachties have terrible B.O. Our first reaction was "not Americans!", but then we smelled a few. Occasionally we get to smelling a bit ripe, and have found that usually a bathing with Selsun Blue Shampoo, or more drastically, with Selsun Concentrated (in yellow bottle) and then continuing with antibacterial soap solves the problem. In the tropics, the constant moisture on the skin as the body pumps out perspiration to cool itself is a perfect breeding ground for bacteria and fungi, which lead to smelly bodies. Most people don't realize when they start offending, so it's better to err on the side of caution. It's healthier, too. Cuts don't infect as often, or as severely, if the skin is kept relatively bacteria-free.

BOOKS - Useful books:

- "DUTTON'S NAVIGATION AND PILOTING" by Elbert S. Maloney, Naval Institute Press, Annapolis, MD (Even after all our years of cruising we continue to check information in here; one of the appendices is translations of foreign chart symbols and notations - most languages of the world, most useful);
- "HEAVY WEATHER SAILING", by K. Adlard Coles, Peter Bruce, Intl. Marine Pub. ;
- "HEAVY WEATHER GUIDE" by Rear Admiral William J. Kotsch, USN (Ret.) and Richard Henderson. Naval Institute Press, Annapolis, MD;
- "THE OFFSHORE DOCTOR" by Dr. Michael H. Beilan. Dodd, Mead & Co., New York
- "WHERE THERE IS NO DOCTOR" by David Werner. The Hesperian Foundation, P.O. Box 1692, Palo Alto, CA 93402 (website: <http://www.hesperian.org/>); (please support this worthy cause)
- "PUTTING FOOD BY", Janet C. Greene, Penguin USA (Paper);
- "SITTING DUCKS" (author unknown, about Caribbean misadventures);
- "WORLD CRUISING ROUTES" by Jimmy Cornell; A good World Atlas; an almanac.

To keep books mildew-free, see "Mildew".

BOTULISM - The most terrifying food poisoning, because it is usually fatal within minutes of ingesting the toxin, and an incredibly tiny amount is all that is needed to fell an army. Poorly processed home-canned meats and vegetables, cans damaged by dents or rust so that the botulin spores can get in and grow, are the most common sources of botulism. Discard bulging cans. If the lid on a "pop-top" has popped, discard the contents. These are telltales of the bacteria growing in the container. However, the toxin is easily destroyed by heat, 5 minutes of boiling food in an open pan destroys the toxin, so one should be careful to adequately heat all canned foods before eating, just to be safe. The spores, however, are a different matter. To destroy, for canning meats, for example, requires processing in a pressure cooker at under 10 lbs. pressure for 75 minutes (for pints) to 90 minutes (for quarts).

BURGLAR ALARM - We have rarely locked our boat while we are away from it for a day and have had no problems. However, we have built an alarm system with which we are comfortable. We did not want a motiondetector system because there are too many things that can set off a false alarm; we wanted a system that would work even if we were on the boat or anytime we left the boat leaving the hatches open, thereby eliminating magnetic contact-type sensors. The alarm therefore consists of a pressure pad that sits in the cockpit in front of the companionway

hatch, a 12V exterior horn, and a time-delay relay switch. The parts are readily available from do-it-yourself electronics shops, cost under \$100, and can be tailored to the specific owner's requirements. It fits our need and philosophy of frightening away the amateur thief, or warning us of intrusion in the middle of the night should we be in a location where that is of some concern. (see "Thieves")

C

CANNING FOODS - when we started out, we weren't going any farther than the Caribbean, where a new island (and market) is just a day sail away in most cases. I therefore didn't think that canning meats was worth the trouble of carrying the jars, lids, and going through the effort. Once leaving the Caribbean for the South Pacific, however, passages are longer, we had no freezer, and we have found great destinations where there was no civilization - indeed, wonderful anchorages where there was no land. As much as we might like fish, a little bit of beef or chicken is welcome, and the longer we do without, the more we crave it. I preserve meatballs, stewed beef, ground beef ("mince"), and chicken. The most appreciated by Peter is the meatballs and loose ground beef. No matter how confident I am that the food is okay (opening the lid of a properly canned jar gives a resounding "pop" as the vacuum seal is broken), I still make sure that the contents are cooked/boiled for a full five minutes before consuming. And so I put up meats before any extended cruise or long passage. (See Appendix: Food Canning)

Remote destinations. In 1991 we decided to stop at Cocos Island, owned by Costa Rica and about 500 miles off its coast. Back then there were only two people living on the island - members of the Costa Rica Coast Guard, stationed there for three-month tours. Cocos Island is a national park, and we aren't sure if the two fellows were there to police the park from fishing boats, since commercial fishing was outlawed, or whether it was just to be sure that Costa Rica maintained a presence there so that squatters couldn't just move in and claim the island. Regardless, we found it to be exquisite, and wound up staying for almost two months. At this time I wasn't canning meats, and so we were eating fish, the occasional lobster, and whatever sparse stores I had in our locker. We shared the anchorage with a French boat, EOA, and found ourselves trading back and forth for items one had that the other didn't. But neither of us had meat, so we grew very inventive with preparing fish in different ways. Near the end of our stay at the island, we started getting a bit silly, looking at the sea birds walking around within neck-wringing distance from us (all the wildlife on land and in the waters of this island were unafraid of humans - not having been hunted, they didn't perceive humans as a predator), and saying, "here, chicken, chicken, chicken", though we never quite had the nerve to catch and kill one.

APPENDIX: FOOD CANNING. Although I have been conditioned my entire life to not reuse vacuum lids, I do not care to carry as many canning jars and lids as I need for a long cruise to remote places; and thus I save pint jars with "button" pop-top lids, such as spaghetti sauce, to use once more before discarding. Also, for smaller quantities, I save smaller jars, such as the jars that Salsa comes in. The risk is the rubber gasket, which is just a small thin strip in the commercial jars, becoming worn or damaged. Be sure that whatever jars and lids you use that you close them tightly before placing them in the water bath and processing, or the liquid will boil over and seep out of the jars.

Precooking meats before canning will insure that the canning broth remains clear and appealing looking. Skim off the scum and if still unacceptably cloudy, you may wish to strain the broth through cheesecloth (or a paper coffee filter!) before covering the meat in the jars with it. I prepare meats slightly differently than if they were being used immediately. Meatballs are better if there is little or no spices, and I do not add bread crumbs; rather than browning in a frying pan, I drop them into boiling beef broth to partially cook, then lift out with a slotted spoon, pack

loosely but firmly in pint jars, use the processing broth (strained to remove scum) to cover the meat, cover, and process. Ground beef: drop loose into boiling beef broth, boil for a minute or two, lift out of broth with slotted spoon, pack into jars, cover with broth, cover and process.

Chicken: remove bones and skin, process as for beef, but use chicken broth rather than beef broth. (Chicken bouillon cubes are fine). I also add 1 tsp. citric acid to each quart of broth.

CAUSTIC SODA - Same stuff as drain unclogger (such as "Drano") - useful for cleaning out the last bits of animals from seashells without harming the shell. But is nasty stuff - generates lots of heat, so add to water, not other way around; be careful of the fumes. Make up a solution, put smelly seashell in and swish around so solution goes all the way into the shell and let sit overnight. Rinse out. (Also useful when toilet in head has bits of rotting animal in it - when the smell gets too much, disconnect intake line, pump in caustic soda solution, let sit for a few hours, pump out, repeat and then flush with clear water)

CHARCOAL TABLETS - Available in most health food stores, good for absorbing ingested toxins such as Salmonella toxin from food poisoning, or for accidental overdoses of medications. It is not a medicine, but the same activated charcoal used to absorb minerals and odors from drinking water. Must be taken when symptoms first appear to have any effect. Can't hurt, often helps, and with food poisoning, helps dramatically. (see "Allergies", "Botulism", "Salmonella")

CHOLERA - For normal healthy adults cholera is not fatal, just nasty, so one should not feel intimidated by it, nor avoid places where cholera has been reported. However, one should always take precautions against food-borne infections - very few places in the world have the same hygiene standards as in the States. As with typhoid, giardia, cryptosporidiosis, the majority of the carriers are asymptomatic - i.e., transmission is often effected by carriers who show no symptoms of the disease themselves, so the disease is transmitted by their handling of food - for this reason, even very clean restaurants can transmit various diseases if the people preparing or serving the food are unknowingly infected. We have eaten food from street vendors in cholera-endemic areas without any problems. If they are selling fried food and the food is handled with tongs and paper napkins without the vendor ever actually handling the cooked food, it is unlikely that the food is contaminated. If the vendor is dirty or the utensils are dirty, avoid it. (See also, "Cryptosporidiosis"; "Giardia"; "Newspapers"; "Preserving Food - Fresh Vegetables"; "Rehydration"; "Typhoid")

CIGARETTE LIGHTERS - Useful for searing and sealing cut ends of lines, webbing, etc.

CIGUATERA - Food poisoning from reef fish. Caused by reef fish eating a toxic dinoflagellate - doesn't hurt the fish, but the toxin builds up in its flesh and is really nasty to humans - can be fatal. Symptoms include shivering, severe flu-like symptoms, reverse sensations (hot feels cold, cold feels hot). The toxin is a nerve toxin, can suppress breathing in severe cases. The larger the fish, the more toxin it could have in its flesh. Is found in tropical reefs worldwide, though some areas are worse than others. Not caused by pollution, so do not think that just because you are far from civilization that you are safe. In the Caribbean, do not eat barracudas, and we suggest avoiding large reef fish, such as groupers. Intravenous Mannitol (glucose drip) has been successful in treating it, if done as soon as possible after showing symptoms. Local remedies include drinking a whole can of sweetened condensed milk. Because the toxin builds up in the body tissues, one can eat ciguaterainfected fish without severe effect over a period of time, and then suddenly eat the one fish that puts the level in the system over the edge. It seems to take about two years for all the toxin to leave the tissues. When Peter got it, he couldn't stand the taste or smell of fish for about six months. Our island friends told us that this is not unusual. It's a scary thing and is not to be taken lightly. In many areas of the Caribbean

we are so wary of it that we try to only eat pelagic fish, such as Mahi-Mahi, Wahoo, tuna; never eat any but the smallest reef fish.

CLOCK - We have a small 24-hour digital clock that also shows the date at the navstation set to Universal Coordinated Time (Greenwich Mean Time). Radio and Weatherfax schedules are usually given in UCT, and this saves trying to remember what time zone we are in.

COCKROACHES - South Pacific roaches are big enough to throw a saddle on. If you see even one roach walking around in daylight, chances are you have a severe infestation (mild to moderate infestation, you won't see one during the day). One cruiser roach treatment is boric acid mixed with sweetened condensed milk until stiff, rolled in balls and put around - especially in bilge. (This is a terrible idea if your bilge has even a little water, and if you make a lot of passages. People who found this most effective were cruisers in Baja California and dry ABC island in Caribbean. It's not worked for us). We've found bombing the boat is the only sure way to get rid of them, but it means opening all lockers and leaving the boat for the day. Best bombing was set off after dark and left for a day. Prevention is better than trying to exterminate, but they'll get on the first time you let down your guard. Do not bring store boxes onto the boat - unpack and discard before bringing stuff below. Leave stuff in sun in cockpit for an hour (if possible) before stowing it. No paper bags; even plastic bags can carry the eggs. Always keep one or two fresh roach traps around galley area. If you send your laundry out to be done by hand and it comes back the next day (as is common on some Caribbean islands), there is a possibility that there will be roaches in the clothes. Unpacking and laying out in the sun before bringing below reduces the risk. (See also "Mildew")

COFFEE - For those who use Melitta paper coffee filters, there is a reusable cotton alternative from: The Coffee Sock Company, P.O. Box 10023, Eugene, OR 97440. They also make hand-held coffee socks with a stainless steel frame. At \$3.95 per sock for a #6 Melitta filter, they are cheaper than the paper version, and it's less trash generation. (We bought coffee socks in a plastic hand-held-type frame in Venezuela, very cheap, and in a metal frame in Phuket, Thailand - in between, couldn't find them)

COMPUTER - Is there a cruiser nowadays that doesn't have a computer on board? Hooked up to a short-wave (HF) radio, can receive weather faxes or can send and receive e-mail, faxes. There are several worldwide perpetual tide table programs available for computers. Hints: learn how to set "sleep" or "Suspend" mode; an inverter is a boon. We believe that a 12-volt adapter is better for the computer and its internal battery than plugging it into an inverter on the boat. (see also, "E-mail", "References" [for internet sites]; "Weather Fax"; "Tide Tables")

COOKWARE - Handles on stainless steel pots & pans are usually not screwed on with stainless steel screws; they will rust and the handles fall off. If you decide to remove long handles and have ear handles welded on, do it before you leave the States. Another option: often you can buy small handles and screw them on in place of the long handles. Try Salvation Army or such for cheap pots with handles or lids you want.

Pressure cooker - a very useful pot. Good for home canning; fast preparation of meats and stews, thereby saving fuel; lock on cover, good for nasty rough passages; and is usually the largest pot carried. Have only found one model (European) that had absolutely no aluminium on it (if yours has an aluminium pressure valve, check frequently and clean oxidation off before using it or it might clog and not work properly). Be sure you carry a spare gasket for your particular model if you plan to travel far from your origin point, or you might find it impossible to replace the gasket when it fails.

Stove. - Be sure your stove has potholders to prevent pots from sliding around and jumping off the stove when cooking while under way. Not all stoves are fitted with them.

CORN

- Corn Meal is available in Australia as "Polenta".
- Real Corn Flour is nonexistent outside of US (except a few places in S. America). Most places, "Corn Flour" means cornstarch.
- Cornstarch is called Corn Flour in many places. Be careful.

COUNTRIES: We have visited the following countries: Anguilla, Antigua and Barbuda, Aruba, Australia, Bahamas, Belgium (via 747), Bonaire, British Virgin Islands, Chile (Easter Island), Colombia, Costa Rica, Curacao, Dominica, Dominican Republic, Ecuador, Fiji, France (including French Polynesia and its Caribbean islands), Grenada, Indonesia, Malaysia, Netherlands (via 747), New Caledonia, Niue, Panama, Papua New Guinea, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Singapore, Solomon Islands, Taiwan, Thailand, Tonga, Trinidad and Tobago, Vanuatu, Venezuela, Western Samoa.

CREDIT CARDS - an easier and safer way for cruisers to obtain money than traveler's checks. Little cash needs to be carried on board, very few places where they are not accepted, and one gets a better exchange rate than either cash or traveler's checks, and they're waterproof. Contrary to information we received, we were able to obtain cash from ATM's using our US VISA and MasterCard in Indonesia, Malaysia, and Thailand.

CULTURE SHOCK - The rest of the world isn't as particular as Western Europe and the US. Sanitation, food and fuel quality, services, are not up to standards we have come to expect. In addition to a sense of humor, one must be on guard to prevent problems caused by our expectations being higher than local conditions provide.

CYBERCAFES: Clumsy and paranoid, I will not carry my precious computer ashore in the dinghy for fear of dropping it overboard. With Internet cafes becoming so prevalent, under most circumstances it is easier and safer to use their facilities rather than our own computer. To save time I write most of my messages on the computer and carry a floppy disk with me to the Internet centre, and copy messages received onto the disk for reading and replying at my leisure back at the boat.

WARNINGS: Not all cybercafes are diligent about running their antivirus software and updating it. In Malaysia, I have experienced virus-infected computers in practically every cybercafe I visited; caught another one in Maryland cybercafe. In self-defense I have taken to checking their antivirus software, and how recently it's been updated, before I download anything, though that's cumbersome. But a great many viruses hide in Microsoft Word programs, to infect your floppy disk when you open a MS Word file to copy it to your e-mail program. There are a few precautions to take that will make it a bit safer. Write protect the disk you are using to store letters you will be sending. This prevents the virus from infecting your floppy disk, but still enables you to open and read the file. You might also save your MS Word files for transfer to your e-mail at the cybercafe, in "Rich Text Format", or simply in "Text" format. When you copy files to the disk you are bringing back to the boat, save the files in ".txt" format, which has no room to hide most viruses. When you get back to the boat, scan that floppy disk for viruses before opening anything that you have downloaded. Of course, this requires that you have an antivirus program and have been diligent in updating it. I download updates to my antivirus program frequently (every 7 to 14 days if at all possible).

D

DAMP - For spices I have resorted to buying very small containers and storing them in sealed Tupperware-type containers until needed. Once the seal is broken, they seem to go bad very quickly (especially certain ground herbs). Since spices can be found everywhere, and are relatively inexpensive, it is not worth stocking up on them. Crackers packaged in foil packs keep fresher than those packed in plastic or wax paper. Pringles never seem to get any worse than they are when bought. Flour goes bad rather quickly in some places. The best-lasting flour was put into heated metal containers which were then placed in hot oven for about 5 minutes after filling with flour, lid placed on, and lid seam sealed with plastic mailing tape after they had cooled slightly. It was well worth the extra effort. Electronics will suffer significantly from the damp. All too often we would find that upon turning on our GPS, or SSB radio, or whatever, after having been in an anchorage for a month or longer, would not work properly. Drove us crazy. We finally realized that the high humidity was slowly corroding the electronic connections, and we found that the easiest solution to our problem was to turn on all our gear several times a week and leave them on long enough to warm up sufficiently to dry them out. So long as we turned the equipment off again long before sunset, when the relatively cooler air caused condensation, everything stayed dry and trouble-free, and our need for repairs plummeted. Computers on a boat seem to be extremely susceptible to the humidity, probably because they are not made for the marine environment. My solution is to run the computer at least every other day. Even so, I'm on my third computer in twelve years (though I probably would have replaced them that frequently anyway).

DEHYDRATION - Severe diarrhea, vomiting, or sunstroke will dehydrate a person, throwing electrolytes out of balance. Rehydration powder is commercially available - easy to carry - packed in envelopes to treat one liter at a time.

Homemade rehydration formula: 1 liter boiled water; 1/2 tsp. Each salt and baking soda, and 8 teaspoons sugar. Give person sips of this every five minutes, day and night, until he begins to urinate normally. Coconut milk is an excellent natural rehydration fluid.

DEBIT CARD - It's advantage over a credit card is that it is a direct debit from one's bank account, meaning that there are no bills to be paid, no interest charges. Some banks and most brokerage houses offer this service. The down side is that should the card be stolen, or its number only stolen, one can have one's account gutted in a short time. If you are going to be away from prompt and regular mail service, strict safeguards need to be observed. If you have a computer and regularly use it to send and receive e-mail, you might be able to obtain bank statements on-line. Merrill Lynch has such a service.

DECKS - The debate over teak decks, good or bad, goes on and on. Our input: In the tropics, the sun is incredibly strong, and is more directly overhead. As a result, dark surfaces, be they dark paint or dark wood, will heat up more than white, which reflects all the of the light's spectrum. There has never been a time when our white fibreglass decks were too hot to walk on. This heat is transferred below, so that our interior is cooler as well. This is most important while underway when you don't have a sun canopy up. Cracks, leaks, problems are also easier to see on a white fibreglass deck.

Keeping the decks clear: We carry nothing on deck during a passage. It keeps the 'Melon looking good, and is safer - nothing to go around or trip over if one of you must go forward during a passage. Nothing to catch and offer resistance to water washing over the deck in storm conditions - yacht designers take great pains to streamline a yacht's deck as much as possible to offer the least resistance to water, so why would you want to sabotage that with clutter? All our jerry jugs are stored below, which also serves to lower the centre of gravity.

DEPTH SOUNDER: Our depth sounder transducer is mounted well forward of our fin keel, and thus we will frequently have warning (but only seconds) that we have run out of water before our

keel hits. It is preferable, in our opinion, to those boats with depth sounders behind the deepest part of the keel, especially in boats with a full keel with a cutaway forefoot - where the boat can slide up onto a reef or shoal and be well and truly stuck before the depth sounder gives you any indication of a problem. If people tell you they've never run aground, chances are they haven't been anywhere.

DENTAL FLOSS - Makes a very good and strong emergency substitute for sail thread.

Caution: Because it is untwisted it frays from friction of sewing, so cannot be used in long lengths unless in a sewing awl.

DIESEL - called "Gasoil" in most Spanish-speaking countries, "Distillate" in South Pacific islands, "Solar" in Malaysia and Indonesia. (See "Fuel Filters"; "Algaecide")

DINGHIES - We never, never, never tow our dinghy if we are sailing, will tow it only if we are motoring for a very short distance in protected waters (and rarely even then). This is the result of several unpleasant experiences in our very early days of cruising. We've had dinghies try to board our stern in a following sea, scared ourselves when we put the dinghy onto a long (100' or so) painter to tow, lost a dinghy we were towing on a day sail, and found a drifting dinghy that was lost from another sailboat. And we have heard worse stories from other yachts. Wheels on a dinghy are a great idea. If you have a RIB, or a heavy dinghy with more than a 5 HP outboard, getting the dinghy into our out of the water in places where the tide range is greater than 6 feet (2 meters) can be a real chore.

Security: From all the stories we have heard, we doubt that there is any foolproof security measures that can be taken. One tactic yachties use is to raise the dinghy out of the water each night, either onto davits or hauled up to the deck using the main halyard. In Puerto La Cruz, Venezuela, just hauling the dinghy out of the water alongside the boat on a halyard wasn't sufficient for several yachts, who lost their dinghy while they were sleeping when the halyard was cut and the dinghy set free. (our wire halyard makes this a bit more difficult). We had two outboards stolen from the stern rail of the Watermelon. Both were secured with SS chain and padlock. The thieves used bolt cutters to cut the chain while we were sleeping. Amazing how quiet they were, since our cabins are in the stern, just a few feet from where they had to board the boat in order to cut the outboards free. Our alarm system was useless because they never stepped into the cockpit, which would have set it off. We have read of a boat whose outboard was chained to their dinghy, and while they were ashore one night the stern of the dinghy was cut off and the outboard made away with. In general, thieves want the outboards. An exception is in the Caribbean, where there is a big market in used (stolen) dinghies. Yachties, of course, are the victims, and also the market for the stolen goods (many are stolen in April and May each year when the European boat bums return to the Med, and the stolen dinghies and outboards are sold there). We have a small (4 HP) outboard, and we now take it on board and stow it in the lazarette each night (our lazarette is so big it could be a mother-in-law apartment!). We also row our dinghy when possible (not often enough, though).

Emergency kit - fine sandpaper to clean spark plug contacts; spare shear pins; spare cotter pins; wrench; screwdriver, duct tape or other very sticky waterproof tape for emergency leak repairs. (see "Armor-All"; "Fouling")

St. Martin is definitely getting too crowded. Two severe accidents involving dinghies in the lagoon - two American tourists from Pelican Key were seriously hurt when their dinghy ran into an anchored sailboat; and a German fellow who worked at Pelican Key was killed when a larger dinghy ran into his at night (neither dinghy was running with any lights). The only dinghy we're using now is so slow it can't get out of anybody's way, and as a result I've gotten paranoid and won't go into the lagoon at all in it, and won't let Peter go out at night anymore, even though we always carry a light. (Peter and Irv share the same philosophy, I think - "I can take care of myself, it's the other guy I have to watch"). When he went over to see Sally and Tony at Pelican

I was a nervous wreck until he got back. Poor Peter, it means we've given up our jaunts over to Pizza Hut for dinner. It's not only in St. Martin - the problem is so serious in the U.S. Virgins that the Coast Guard there is now inspecting dinghies and prohibiting them from running at night if they don't have running lights. (They patrol the dinghy docks just before sunset and "ground" anyone with a dinghy without lights. We were inspected when we were there in January. Good for them - I wish there were someone on St. Martin to do the same thing).

DISHES - Dinner plates with a moderate rim keep juices and sauces from spilling all over the place while under way. (We eat a lot of meals from deep soup bowls). (See "Non-skid")

DOCTOR - The best friend a cruiser can have in preparing for his cruise is a doctor who treats him as the intelligent person he really is. This means accepting that the cruiser must take primary responsibility for his own health and well-being. The best doctors I have met were themselves sailors, more familiar with the peculiar circumstances in which we travel. The worst doctors were those who told us to never mind carrying all those antibiotics, just go to a doctor if we felt sick (tough to do seven or more days from any land whatsoever, with just a minimally-trained public health nurse at the end of the passage). "The Offshore Doctor" (see "Books") includes a good listing of medications, which should be included in a cruiser's first aid kit, and should be brought with you to your doctor's office. "Where There Is No Doctor" (see "Books") is another excellent book to help with medical problems encountered. Do not let a doctor put you off carrying whatever you feel is necessary - find another doctor if the first one proves intractable.

(Quoting from our insurance co. newsletter): "...in the majority of airports all over the world, one is in good hands..... which include ambulance support... an ambulance will arrive [at an airport] quicker than if called outside an airport... many airports have their doctors or other medical personnel available - the doctor's job is primarily to treat passengers who become ill during a flight as well as to ensure that incoming passengers with contagious diseases are examined before they get permission to enter the country." The upshot of this is that, in an emergency, you might find your best medical care at the nearest international airport. Worth a try.

[Note - new Dec 98] We might take a long time to make up our minds about where we're heading, but once we decide we pursue it with singleminded doggedness. We have had all our shots for our trip to Papua New Guinea, Solomon Isls., etc. Poor Peter was sick for about three days from the shots, but since I suffered not at all I wasn't particularly sympathetic (but he had a lump on his butt the size of a grapefruit from one of the shots probably the tetanus - looked nasty). Hepatitis is a disease to be concerned about out here, so we got immunized for that (according to an Australian doctor who is an expert on hepatitis, it should be of more concern to people everywhere nowadays, and the immunization is so simple and painless it's silly not to get it). We got polio booster immunizations because there is apparently a lot of polio in Asia (?!); tetanus because our last shots were so long ago and again it's a concern for us yachties; and typhoid because it's worth getting. Elsbeth said that after traveling through the Asian countries they are convinced that any and all precautions taken are necessary. We have an advantage over a tourist who is forced to eat and drink the local food and water, though - we can draw on our own resources. Jean-Paul, as a chef, said that the worst problem they had with food-borne illness was in a very good, clean, and expensive touristy restaurant where they hadn't expected it, although this didn't surprise us after we had been educated on the pathology and spread of typhoid and cholera, etc. But in any case, we have the most astounding collection of drugs now to protect us against, or treat us for: amoebic dysentery, bacillary dysentery, malaria, thrush, staph, streptococcus, anaphylactic shock. Cost a bundle, but gives some peace of mind. We even got a prescription for morphine, although I recently learned about a non-narcotic pain drug called Toradol which is supposed to be as effective as morphine, so we're carrying the Toradol;

but I had to inform the doctor of its existence so we could get a prescription for it. Annoying, this requirement that prescriptions for antibiotics, etc. be given by a doctor - in Latin America you can buy anything you want except for narcotics without a prescription which makes the cost for drugs much, much lower than in the States or here in Australia. Also, for knowledgeable cruisers, it frees one from the ignorance of a bad doctor. Our doctor experiences belong in a letter to SSCA, and I will probably write one soon. Bad advice from a doctor can be dangerous!

DRIED VEGETABLES - When I can get them, I prefer them to canned vegetables - saves weight, space, and they taste better. Canned vegetables contain a lot of salt as a preservative and flavor enhancer for flavors lost in the canning process. Peter and I are very sensitive to this added salt, and even though I rinse canned vegetables with fresh water before heating, there is usually still too much salt for our tastes. Australia and New Zealand have excellent dried vegetables, which can be rehydrated while being cooked, or can be rehydrated in advance in just water and then used in stir-fried meals with almost the same texture as fresh vegetables. Dried beans require more time, since they should be soaked, usually overnight, before being cooked, but not only do they taste better, but they will not contain as much salt.

DROGUE: When we set out cruising we did not carry a drogue, thinking that trailing a rope warp with weight on the end would suffice in an emergency. Several rather nasty storms made us reconsider this idea, and when our friends survived the Queen's Birthday Storm sailing between New Zealand and Tonga with much thanks to their drogue, we started looking for something better. A careful reading of Tony Farrington's "Rescue in the Pacific" made us doubt that the traditional parachute anchor or parachute drogue was what we wanted. Around the same time we had read in the SSCA (Seven Seas Cruising Association) Commodore's Bulletin of a Jordan Series Drogue, and the more we read about it, the more we believed that this was the right gear to carry. We made our own from scrap sailcloth out of the local sail maker's scrap box. The pattern can be bought from the SSCA as an Extra Publication.

A few comments about our experiences & our rejection of a parachutetype drogue or anchor:

Deploying a sea anchor under the philosophy of keeping the bows to the seas where they will break with relatively little stress ignores the stresses on a boat taking on large seas on a regular basis. The most serious problem is that hanging on a sea anchor means that the boat is going backwards, albeit very slowly. Each time a wave boards the boat, it is being thrust backwards, placing severe strain on the rudder, which is not designed to take stress from that direction. No amount of lashing is going to secure the rudder sufficiently. In K. Adlard Cole's book, "Heavy Weather Sailing" (see "Books"), which I think is a must read for anybody going offshore, he recounts, and advocates, running with a storm whenever possible. There will be fewer collisions with waves as the boat presents a moving target and is usually lifted with the wave and rides it out. But here is where one needs a device to slow the boat down so that it doesn't go careening down the face of the wave at surfing speeds, risking pitch-poling or broaching. A drogue will slow the boat significantly and evenly - the Jordan Series Drogue that we carry consists of many (over 100) small "droguelets" or small cones, spaced about 18" apart. In this way the drogue is always exerting constant pressure on the stern of the boat. The parachute-type drogues (and sea anchors) are deployed with a long line, and when the parachute is on one side of a wave and the boat on the other, the line will fall slack, to tighten with a sudden jerk as the boat accelerates. The series drogue never allows that acceleration. It seems to be a rule of cruising that as soon as you acquire a piece of emergency gear the emergency never arises again. We have deployed the drogue only once and that was to test it more than because we needed it. But as I've said to others: if you cross oceans carrying a drogue and never have to use it, good for you! If you do not have one and are unlucky enough to be in the path of one of those big storms, good luck!

E

EMAIL - It almost need not be mentioned, it is so prevalent in the cruising community now. Some hints: Internet cafés make it easy to check in on your e-mail without lugging your computer ashore in the dinghy (this is Miss Paranoid talking). Learn how to type your messages in e-mail text format and carry them ashore on a floppy disk to save time in sending messages from an Internet Cafe. Learn how to Save your messages on disk so you can bring them back to your own computer to read at your leisure. Saves time and money in the Cafe. But be sure that you have a good anti-virus program that you update regularly if you use Internet cafes. I've had floppy disks infected with viruses from three different Cyber-cafes in three different cities.

EGGS - if bought unrefrigerated, will stay fresh unrefrigerated for weeks. I've found that Vaseline™ (petroleum jelly) does keep them fresh longer. They should be turned over every three to four days to keep yolk from sinking and attaching to the shell and thereby going bad. To tell if an egg is spoiled, place it in a cup of fresh water. If it floats high out of the water it's bad, if it sinks, it's okay. (I still break an egg into a separate dish rather than mixing bowl, just in case). Substitute for baking: in recipe calling for 1/3 cup oil + 2 eggs, can substitute ½ cup mayonnaise + 1 tablespoon cornstarch. Texture will be less firm than using fresh eggs, but will hold together better than with no egg product at all. Be careful, some mayonnaise includes mustard, and some Australian and New Zealand mayonnaise is so sweet that you might be advised to reduce sugar somewhat. But this substitution is a great use of that awful Australian mayonnaise that you bought by mistake and can't stomach.

ELECTRICAL CONNECTIONS - We have seen a million-dollar boat fitted out by the dealer using crimp connectors - guaranteed to start failing shortly after setting sail. All connections should be soldered; tinned wire is now readily available in the US and should be used everywhere on the boat.

ELECTROLYSIS - In our opinion, a bonding system for a cruising boat is essential. Some locations have such electrolysis problems that frequent inspection of zincs is necessary. Electrolysis is not restricted to throughhulls and electronics on board. Also affects canned food, juices, and soft drinks. Some anchorages, if there is a lot of debris (such as old steel boats, batteries, other metal garbage) on the bottom, will also create electrolysis problems. When at anchor, or at a marina, it is prudent to attach a special zinc to the boat for extra protection. (see also, "Polarity"; "Zincs")

F

FAX - Some SSB and ham radios can be equipped with a modem to send faxes from a computer. If fast accurate communication is important to you, this is worthwhile investigating. The wonders of modern communication via FAX have reached the most unlikely places in the world, and are a reliable and fast method of long-distance communication. Where long distance telephone calls are used to subsidize local rates, the information transmitted by FAX or e-mail for a few dollars can cost \$50 to \$100 by telephone (!!)

FENDERS - Good for buoying a trip line for one's anchor, or for buoying one's anchor rode in foul anchorages. (see "Fouling"; "Recycling") Story about Verity: Our friends Rich & Pam, new to cruising, had just recently arrived in the Caribbean when they came to Sint Maarten. Simpson Bay was so roly that they went into the lagoon when the bridge opened that afternoon. As they were making their way to a suitable anchorage Pam noticed a mooring buoy, & decided to pick it up rather than go through the effort of anchoring. So she brought out their trusty boat hook & pulled up the ball, looking for the mooring line attached. A loud shout from a nearby boat caught their attention as the man yelled angrily, "That's my anchor float you've just picked up!" Oops!!

FIRST AID - the following things we have used and found successful for tropical problems not usually found in first aid books. (see also, "Acetic Acid"; "Books"; "Vinegar")

Bug bites:

- **Ants & bees:** Venom is acid, so apply Bicarbonate of Soda (Baking Soda) to neutralize the venom. (NS 16Sept00)
- **Wasps:** Venom is alkaline, so apply vinegar (NS 16Sept00).
- **Centipede stings:** (unconfirmed) Extremely painful sting, apply water as hot as you can tolerate.
- **Coral cuts:** Wash with vinegar immediately, then treat as for any cut or abrasion. NOTE: I have experimented with treatments for coral cuts many times. All cuts treated with vinegar have healed faster and more effectively than cuts left untreated or treated with standard antibiotic soaps and creams (Neosporin™, for example, was practically useless).
- **Cuts:** A chef's trick to stop minor cuts from bleeding is to sprinkle a little turmeric (in your spice cabinet) on them. Not suggested for large cuts that might need stitching.
- **Jellyfish stings:** Do not try to brush the tentacles off or they will continue to sting you. Vinegar applied to the tentacles clinging to the skin will stop the nematocysts from injecting their toxin, after which they can be removed. Papain (in Adolph's Meat Tenderizer or papaya skins, or the sap from its leaves) is said to neutralize the toxin (stingray toxin is also a protein, and therefore the papain should neutralize it also, although I have not had occasion to try it). Take an antihistamine. (see "Allergies")
- **Sea Anemones:** Vinegar (again) will stop the burning, and usually reduce the swelling within several hours.
- **Sea Urchins:** Ammonia (or urine) will stop the pain immediately (you can try a paste of Bicarbonate of Soda [Baking Soda], it worked once for me). Lamp Oil (kerosene) or limejuice will dissolve the spines embedded in the skin (as gritty as they feel, the spines are protein, not calcium). Do not try to dig the spines out – they won't hurt you, but the removal process will.
- **Stonefish:** Incredibly painful poison. Immerse wound in hottest water the body can stand.

FIRST AID KIT - Good first aid list is given in "The Offshore Doctor" (see "Books"). Additional suggestions: antihistamine (two: pill, liquid); charcoal tablets; fabric Band-Aids (in our experience plastic strips don't stay stuck); Selsun™. (see: "Charcoal Tablets"; "Fungal Infections"; "Staph Infections"; "Allergies"; "Salmonella")

FLAG ETIQUETTE: Once you have cleared into a country and lowered the yellow "Q" flag, it is a matter of courtesy to fly the flag of the host country (the French demand this courtesy, so be aware). It should be flown at your starboard spreader, and no flag should be flown higher than the host country's flag. For U.S. vessels, the only national flag that should be flown is the national ensign ("Stars & Stripes"). The yacht ensign (13 stars surrounding a fouled anchor in the blue field) is proper to be flown only within the U.S. We have seen yachts with several nationalities on board who all want to display their country's flags. Properly, only the host country flag and the vessel's national ensign should be flown, but sometimes in a foreign port the flying of other flags can be a practical method for advertising "(*) language spoken here", "books on board" "member of **"). In those instances, these informational flags would be flown from the port spreader, remembering that it (they) must not be flown higher than the host country's flag. Some local customs might differ from the above, so keep an eye out when you arrive at a new port to see what is being done. For more information on flag etiquette, you can refer to the U.S. Power Squadron website, <http://www.usps.org/>

FLOUR - goes bad rather quickly in some places (see "Damp"). Specialty flours (such as rye flour, graham flour) are difficult to obtain outside the US. (see "Provisioning"; "Weevils"; "Rice Flour")

FOOD (Cheap, i.e., restaurants) - SSCA suggestion: ask person recommending a good, cheap place (a) what do they usually spend in the States for a good meal, and (b) do they like McDonald's? We have been disappointed by other people's recommendations because their idea of cheap and ours were quite different (we appreciate inexpensive, but have yet to eat in a good "cheap" place).

FOOD (Preparing underway) - Some substitutes that have made things a bit easier:

- Ramen Noodles (found everywhere we've been, under various names) - 2- or 3-minute noodles, safer and easier than any other pasta or rice (unless you like Minute Rice, which you aren't going to find many places in the Pacific or SE Asia).
- Rice Noodles (Mie Hoon, Mee Hoon, Bee Hoon, Long Rice are various names for them), available in Chinatowns worldwide, we think - just pour boiling water over them and let sit for a few minutes, then toss with vegetables, meat, maybe some sauce, you have a quick but filling meal. But try these before you set out - don't buy a lot on my say-so.
- Breakfast Bars - quick energy when one or both of you need energy, and it's just too dreadful to go below and make something.
- Vacuum Thermos & Carafes for hot water, tea, coffee; they hold a liter of water or coffee, so you always have something hot, but don't have to boil water too frequently; we carry two carafes, boil water in a two-liter tea kettle and fill them.

FOOD POISONING - SEE: "Botulism"; "Charcoal Tablets" (very important); "Salmonella"; "Scombroid Poisoning"

FOREIGN LANGUAGES - "Dutton's Navigation and Piloting" (see "Books") has English translations of foreign terms found on nautical charts - most languages - very, very useful. See "Books", "Charts" You do not need to learn a foreign language to travel since English is so prevalent everywhere, but you will have an easier time if you learn a few words of the local language. "Hello", "good-bye", "please", "thank you", and "how much?" are universally appreciated. "Where is" plus a note or map will get you directed to the approximate destination cheerfully (caution - our experience leads us to believe that very few people in the world know how to read a map - place names and addresses are more useful). Learn how to count in the language - it will save you a lot of money when the local says fifteen and it sounds like fifty and you pay it! Also, in some places, especially where they see a lot of Americans and/or Australians, the locals will refer to their currency as Dollars, even if it isn't called Dollars - so be careful and always assume they mean their own currency - again, it will save you money. Even if you speak the local language, don't be annoyed if nobody understands you. Aside from the fact that Americans tend to butcher languages; local accents and dialects can render the version you were taught unintelligible. If the local language is some form of English, you might be wise to treat it as a foreign language anyway. And remember, wherever you are, you are the foreigner, not the locals.

Another hint. We have found a lot of misunderstandings where the locals think that they understand English well. We will say something like: "I would like to go to Ban Nit, because I'm staying there, not in Ao Chalong where I was last week" - the poor taxi driver hears and understands only "Ban Nit" and "Ao Chalong" - since he's not sure what else you said, he's as likely to take you to Ao Chalong as to Ban Nit. It is wise to keep all your discussions and instructions as simple and as positive as possible -leave out the extraneous, forget about telling them what not to do because they will probably understand only half of what you're saying, and "no" and "not" are not universally understood.

We sailed from Cocos Island, off the coast of Costa Rica, to Salinas, Ecuador in 1991, arriving the first week of December. Checking in, we paid the annual light fees that are assessed to vessels, be they commercial liners or private yachts, based on tonnage, - for WATERMELON, a

bit less than \$40.00. Salinas is a small village, and very few cruising yachts come there - for almost the entire three months we were there, only our friends on the yacht OBSESSION, and WATERMELON, were at anchor, and so the Port office has no trouble recognizing each of us. Peter quite obviously couldn't speak Spanish, though they knew that I could, since I had done the checking in. On a Saturday near the end of January a small speedboat came by the 'Melon. Two bathing-suited couples were in the boat, and they called to Peter, saying something he clearly couldn't understand, but telling him nonetheless. Peter shrugged his shoulders, looked blank, and they went on out to OBSESSION, where our friend Gary was able to understand them. That afternoon Gary came by to tell Peter that the fellows were from the Port Captain's office, and that we had to go in and pay the current year's light fees. Peter of course objected, since we had, after all, already paid for a year's worth of light fees. No, Gary patiently explained, the light fees we had paid were for last year. It was now a new year, we needed to pay new light fees. Peter argued that there weren't any lights, so paying one set of light fees was a bit much, two sets of light fees in two months was ridiculous (why Peter was arguing with Gary, another foreign cruiser, I don't know, but I think it was because Peter just had to argue with somebody, and the local officials couldn't understand a word he said, so poor Gary had to be the goat). Gary sensibly said, "whatever", and left. Now, Peter had no intention of paying for this second assessment, and so he ignored the entire issue. The following weekend the fellows came out again when I wasn't there. Peter had his strategy all thought out. As they came alongside the boat, Peter smiled, and shouted, "that's it, no more cerveza [beer], you've had enough, no more cerveza!" The men tried to talk to him, but Peter of course couldn't understand Spanish and was certainly having too much fun not understanding it. They couldn't speak a word of English, and so there they were, trying to explain to him that the Port Captain wanted to see him, and Peter shouting "No more cerveza!" Again they left, slightly frustrated. We never did pay the second light fee assessment, and that's another story.

FOULING - Anchors: See "Anchor"; "Recycling" for anchor rode in foul anchorages. "Chain fouling" can occur in areas of light wind and strong tidal currents. The anchor rode lies in a pool directly under the boat and can wrap around the anchor as the boat turns with changing tides or currents. If a squall hits tightening the anchor rode, the loops around the anchor can close into a noose, fouling the anchor and the boat goes walkabout.

Dinghies: To treat the bottom of the dinghy to slow algae and barnacle growth, wax to which a few drops of an algaecide designed to be added to house paint works reasonably well. In some countries one can find liquid tributyl tin, which is excellent (but illegal in the US) - but be careful, it's toxic to humans too, so use rubber gloves. Must be reapplied periodically. (see "Armor-All")

Water tanks: Rainwater can be fouled by passing birds, algae, dust. We run our water tanks out periodically to purge silt that collects in the bottom of the tank. Water purification tablets are a good idea to carry: they are sodium dichloroisocyanurate, sold by West Marine as AQUATABS (made in England, as most of them seem to be, under different brand names). Once you reach the middle of the Pacific, you will find that they can be obtained under the following brand names, at about half the price of Aquatabs from West: AMCAL; Steadiflow Antibacterial Tablets; Milton's; Boots ... (imported from England) - much cheaper, can be found in Pharmacies/Chemists in baby care section, as "Feeding Bottle Steriliser Tablets", or "Antibacterial Tablets". This will also slow down, or prevent, algae from growing in tanks. Remember that the locals are acclimated to their water, so what is safe for them is not necessarily safe for you. These tablets, essentially chlorine, will not kill the spores of the parasites that cause Giardia, Cryptosporidium, or Amebic Dysentery. (see also "Giardia", "Cholera", "Water Purification")

FUEL FILTERS - We have discovered that in many places in the world the fuel pumps are unfiltered. For various parts of the world (Bahamas outislands, Latin America, Mexico) it is useful to have what is called a "Baja Filter" for pre-filtering diesel before it goes into the tank. In

addition, in the tropics, algae can grow in the fuel tank, depositing water in the fuel. All the "gunk" sits in the bottom of the fuel tank until a rough passage, when it is stirred up and taken up in the fuel line, precisely when one is least desirous of having the engine stall. After having had this happen to us twice in uncomfortable conditions, we clean the fuel tank periodically to remove as much sediment and water as possible. There are sponges that can be inserted into the fuel tank to remove water, leaving the diesel, which is a simple precautionary measure that can be taken frequently with little effort. Most boats have found that two in-line fuel filters are necessary for high-performance diesel engines. (See also "Algaecide")

FUNGUS INFECTIONS - "White spots" on your skin, or itching areas, or rough patches that don't respond to moisturizer, or patchy skin discoloration, could be fungus infections. Common in the tropics. Selsun™ (Gold, not the shampoo), is an effective treatment, and Selsun Blue shampoo used regularly is an effective preventative. Boric Acid (quite toxic, it also kills cockroaches) solution (1 tbs.. to 1 litre sterile water) is also a topical fungicide; read directions carefully. (see also, "Ringworm", "Staph Infections")

FUSING TAPE - The nylon mesh-type strips used for non-sewn seams, etc. Handy for quick repairs, reinforcing raveling seams. If no steam iron on board, steam from whistling teakettle will work to activate fusing tape though not as effectively. [NOTE: experiment with heated pot as iron.]

G

GASOLINE - Called "Petrol" where British influence.

GIARDIA - Parasite found in fresh-water streams into which local sewage is dumped. Although infection is usually without symptoms, sometimes it is manifested by such intestinal symptoms as chronic diarrhea, abdominal cramps, bloating, frequent loose and pale greasy stools, fatigue and weight loss. Water from such sources must be heated to 131 degrees Fahrenheit, 55 degrees Celsius, or passed through a filter of no greater than one micron - chemical treatment is less reliable. Chemical treatment: 0.1 to 0.2 ml (2 to 4 drops) household bleach or 0.5 ml of 2% tincture of iodine per liter of water, let stand for 20 minutes (longer if water is cold or turbid) [ref.: CC DISEASES]. Do not swim in fresh-water streams in the Caribbean islands - almost all are infested with Giardia. (See "Intestinal infections/parasites"). In all cases, 1.0 micron filter will remove cysts - Amebic dysentery, Cryptosporidium, Giardia. Chlorine treatment unreliable, iodine a bit better. See above.

H

HEADS - Calcium precipitating out of salt water will build up in waste line, eventually clogging it. Daily squirt of vinegar left in head overnight will slow this process. We tried putting a little oil in the head every few days as was suggested by some cruisers - we found significant calcium buildup after six months, so have gone back to the vinegar treatment. Clearing head and lines of calcium, you can use phosphoric acid or dilute muriatic (hydrochloric) acid, but be very, very careful.

Our procedure: jammed a plastic hose into the outlet through-hull to bring outlet above sea level, flushed dilute muriatic acid through with fresh water, and let it sit in the line for about an hour, then flushed through after removing the hose. It is very satisfying to see all the junk that flushes out. (see "Acids")

HEPATITIS - It is worthwhile to be immunized against hepatitis, both strains A and B. They are becoming a menace just about everywhere in the world. (We have recently read reports in Australia of people contracting Hepatitis B through contact with contaminated eating utensils and dishes, which we had previously been told was highly unlikely). The new Hepatitis A vaccine (as a course 2-4 weeks apart) gives long term protection, doing away with repeated gamma globulin injections. Booster at 6 or 12 months. (See Medical College of Wisconsin website: <http://www.intmed.mcw.edu/ITC/Health.html/>)

HOSPITALS - If you need medical care outside of Western Europe, US, Australia, NZ, we strongly urge that you do not go to the local hospital. In major towns and cities find the private clinic that treats the well-to-do (applies to every South American country, every Caribbean island, and most Pacific islands). If you can find it, read a book called "Sitting Ducks"

HYDROFLUORIC ACID - In weak solution, a rust stain remover for clothing. Sold in US in hardware stores, in Australia in pharmacies when available. Be very careful when using it and wear rubber gloves - it does not burn the skin, but will go through the skin and burn the nerves. Used carefully it's great stuff, but it requires more care than other acids because its burning effects are not so obvious. It also etches glass, so don't put in a glass or glazed china container.

HYPODERMIC NEEDLES - Warning about unsafe hypodermic injections. Please be alert, and make sure that the injection you receive in some out-of-the-way place is done with a new disposable needle. You might want to take your own with you when you go to a hospital for emergency medical treatment.

- **See the following:** * "In the Far East, South Asia, Africa and parts of Eastern Europe, unsafe injections cause between 10 and 20 million hepatitis B and C infections every year. The 20-year time lag between infection and terminal liver disease means that the true cost of dirty needles is only emerging now. Children are particularly vulnerable: around 80 per cent infected with hepatitis B can't shake off the virus, and 20 per cent will eventually die from liver disease.

* In the Pakistani city of Karachi, dozens of unqualified health workers sell sick people "curative" injections. "These places have to be seen to be believed," says Hutin. The injections are usually worthless as well as passing on viral infections, says epidemiologist Arshad Altaf of the Aga Khan University in Karachi. "Formal and informal healthcare advisers are in the habit of providing unnecessary injections. Usually they're just water and vitamins. Sometimes they contain antibiotics."

* "If we don't control this, I think the problem will increase tenfold in the next 10 years. There's a dearth of data, but what we have suggests that between 2.5 to 10 per cent of the population have hepatitis B or C. The situation will be horrendous. Hospitals are already seeing a big rise in people with liver disease."

* "If you look at hospitals in Europe and, I suspect, around the world, more and more people are coming down with end-stage liver disease,' says Steve Luby, of the US Centers for Disease Control and Prevention in Atlanta, who spent five years in Pakistan studying the problem. Excerpted from New Scientist magazine, 21 October 2000.

INTESTINAL INFECTIONS/PARASITES: Amebic dysentery, cryptosporidiasis, giardiasis - these are parasites, all caused by contaminated water, all found worldwide. In developed countries, control in public water supply is through filtration. Chlorination is not considered completely effective, iodine treatment is preferred, though also not necessarily effective. Where iodine is used, a waiting period of between 10 and 30 minutes (longer if water is cold) is recommended before drinking. Most effective treatment of water is filtration through a 1.0 micron (or smaller) pore filter. Further information, see "CC DISEASES". Cryptosporidiasis and

giardiasis infections, although they may show symptoms of intestinal upset, diarrhea, etc., is frequently without symptoms. (See "Preserving Food",)

INVERTER - Alternating current (AC) is necessary to run certain appliances, so an inverter is a good idea to have. Evaluate voltage needs before installing, or you may have one too small or too large for your regular needs. Here is where one needs more information than this database is designed to provide. Many inverters provide a "square wave" rather than a true "sine wave". Our sources indicate that a true "sine wave" inverter is far better for your equipment. You will pay more for it.

JKL

LAUNDRY - High on my list of wants is a washing machine. Since it isn't going to make the list of items we have, laundry is done in 5-gallon buckets. A toilet plunger makes a good agitator. Liquid laundry detergent and non-chlorine bleach (difficult to find outside the US) is easier to use in a bucket of cold water than powdered, though it does increase the weight of your stores.

LAUNDRY BLEACH - Carrying bottles of laundry bleach, like Clorox, has become too much of a nuisance. Can be bought in most places in the world, so there is no need to stock. When you run out of chlorine bleach, use one or two water purification tablets ("Steadiflow", "Milton's", "Boots") dissolved in 1/2 litre of water - works almost as well, although not as strong.

LAUNDRY MARKER (INDELIBLE) - Invaluable for labeling plastic and glass containers into which strange substances have been transferred (honey and hydraulic oil look the same in a bottle, but salad dressing made with hydraulic oil just doesn't taste the same). Be careful, the newer ones we've found use alcohol as the solvent (label says "Alcohol-based, Xylene free), and I have found that they are not really indelible. Most annoying.

LEMON JUICE - Good substitute for fresh lemon juice is Kool-Aid Unsweetened Lemonade mix (in the tiny envelopes). Add to 1 cup of water, can be substituted in any recipe calling for lemon juice – almost indistinguishable from fresh. Will make ceviche (poisson-cru) or non-cook lemon meringue pie exactly the same as fresh lemon juice.

LIGHTS - Dinghy navigation lights are a good idea in busy harbors. US Coast Guard requires them in US waters, should be required elsewhere. Personally know of one dinghy accident resulting in a death that would have been avoided had either or both dinghies had lights.
- Waterproof flashlights - a necessity. Carry a small one with you all the time - those paths to the dinghy dock don't look so treacherous in daylight, but can be frightening to reach in the dark.

LYSOL™ - One of those products for which no comparable substitute seems to exist. Used by the Center for Disease Control in Atlanta to wash and disinfect scientists working in the extremely dangerous virus section (where they study Ebola Virus, for example), so it must be pretty good. Kills mould, mildew, bacteria; acts as a mildew preventive if a mild solution is allowed to dry on surfaces. Difficult to find outside the US.

M

MAIL - In sixteen years of cruising, we have had mail forwarded to practically every country/island nation that we have visited, and only once in all this time has our mail been lost. Only two or three times has the mail taken more than two weeks to reach us (and that usually in

the month of December, when the U.S. postal system is deluged with holiday mail). In the Caribbean mail usually arrives within 10 days of its being sent from the States. In Southeast Asia and Australia it will take approximately two weeks. Singapore - six to eight days. It is better to have a mail address that is not Poste Restante (or General Delivery). French Island post offices return unclaimed mail after two weeks ("it's the law"). (The French will drive you crazy - another silliness - if the envelope is addressed to "John and Jane Cruiser", the postal employee will often insist that both people be there to receive the mail (!!)) We present our calling card to the postal employee rather than try to get them to understand our spoken words, in some places they will demand to see your passport. After the terrible mess that we have seen in too many post offices, we suggest that you have mail addressed to your surname only (including first names seems to mean that there are a few more letters under which they can file your mail), and your boat name. Boat name because if you are forced to have another yacht pick up the mail, they are more likely to remember your boat name than your surname. Try not to have mail included with parcels that will have to go through customs (for that matter, be sure that any parcels will be sent only to the least problematical countries). Latin America has been a problem, various other places are at various times - other cruisers will be your best source of information. Large packets of mail may be in the parcel section of the post office, so you would be wise to check both areas. We have our mail forwarder put our mail into distinctive, easily-recognized envelopes as multiple smaller parcels rather than one large packet that will draw the attention of Customs (or sticky-fingered postal employees), and to note on multiple packets of mail "1 of __, 2 of __, " etc. On three occasions, in three different countries, this notation was the only way we got parcels 1, 3, and 4 - only "2 of 4" was given to us the first try. On two occasions the post office involved had placed the parcels in different locations, and only the notation on the label that it was only one of the four parcels sent convinced the postal employees to look for the other ones (that, and my nagging insistence that they had the mail - one must be polite, but firm). When we were in the Caribbean we heard of a couple who generously offered to pick up another yacht's mail from the post office to bring it to them down the line. They were arrested - the mail packet had contained ammunition - smuggling guns or ammunition is frowned upon. Being a good sport is wonderful, but we suggest that you know the people you are doing favors for.

- **Niutoputapu, Tonga:** The reason we can't mail anything from here is that the Post Office has sold all its stamps to another yacht, and "who knows when there will be more". This island of about 1500 people has a "doctor", a nurse, Immigration Officer, Customs Officer, Agriculture Officer, and a Post Office. The five boats here all agree that these people don't have a clue as to what they're doing.

- **Several examples:** John and Petra, the yachties who bought out all the stamps needed more than they bought, so the postmaster pulled out an envelope with about \$10.00 worth of uncanceled stamps on it, addressed to some place in France, said that it had arrived on the plane that day, and gave it to John. John said that that wasn't right, somebody had mailed it - the postmaster said that it was okay, because there wasn't any letter or anything in the envelope, so there was no reason to send it on. Since the postmaster had made a gift of the envelope to John and Petra, they had to accept it, and will now have to mail it from Neiafu for the poor fellow. Since the postmaster opened it to prove there was no letter in it, they plan to include a letter explaining why the stamp collector is not getting an envelope postmarked from Niutoputapu, as he had obviously wanted, because the postmaster doesn't understand stamp collectors, just envelopes with something inside them.

MALARIA - After reading lots of conflicting information regarding malaria, as well as getting misinformation from medical doctors who were unfamiliar with it, we have come to the conclusion that a tropical disease specialist, with access to up-to-date information from the World Health Organization, is most important. This is a disease that is too serious for its prevention or treatment to be left to the advice of other cruisers or inexperienced medical practitioners. Because the parasite mutates, effective prophylaxis or treatment regimes one year may not be effective twelve months later. Tropical disease centres in conjunction with WHO publish current information on the best prophylaxis and treatment, as well as alternative medications. I caught malaria in the Solomon Islands, and the local doctor blamed it on the fact that the Australian travel medicine that the doctor prescribed is an inappropriate prophylaxis regime for their area. (see also, "Doctor")

MAYONNAISE - Non-U.S. produced mayonnaise is very different from stateside mayo, even if it carries a US brand name. Unless you like Miracle Whip, mayonnaise in the South Pacific does not appeal to US tastes (too much sugar in Australian and NZ brands, even with a US brand name). And for you Aussies and Kiwis, US mayonnaise, or that produced in most other countries, is too sour for your tastes. (See also "Eggs")

MEAT GRINDER - Small, plastic meat grinder is very helpful in places where quality of the meat or sanitation is questionable. Whole roasts are safer than ground meat - beef roast is very dense and relatively low in moisture content, and thus if you cut off the outside layer, the inner meat is uncontaminated (to a point - rotten meat is rotten meat).

METAL WAX - Our latest discovery and "best thing since sliced bread". Protects stainless steel and aluminum from salt-induced corrosion better than the metal polishes we used to use. Metal polish is still useful for removing heavy corrosion on stainless and brass, but if Metal Wax is applied after polishing, the metal stays corrosion free longer. Excellent on aluminum, which metal polish does not seem to help. - Note: MDR makes a true "metal wax", while others are a metal polisher with a wax additive - not the same thing, because it often contains an abrasive.

MILDEW - Conventional wisdom states that to prevent mildew one need only provide sufficient ventilation in the boat. Balony! In Costa Rica during the rainy season the sun canopy mildewed on the shaded side, grew green algae on the sunny side. Since only direct sunlight actually inhibits mildew (and encourages algae), one tries all kinds of stuff to inhibit it. Lysol, vinegar, or chlorine bleach seem to work equally well (but vinegar and chlorine are harsh on stainless steel, and both vinegar and chlorine bleach attack dacron sails). To keep books mildew-free, gently wipe them with a rag soaked in undiluted Lysol (covers, inside and out, page edges), let them dry without rinsing. So long as they don't get wet, a semi-annual repeat of this treatment works very well (one of the active ingredients in Lysol is the same as in the Mildew Preventive Spray that chandleries sell at an exorbitant price). But it will turn the edges of the book brown.

Mothballs (naphtha) in clothes lockers will also keep mildew at bay (but it taints all food not in cans - even glass jars don't seem to be impervious to the fumes, though maybe I just imagined the nasty taste). In the States one can buy "clothes hearts" which are a perfumed, mild naphtha and work well in clothes lockers without the nauseating smell, but are not strong enough for use in the open spaces of the boat when it is closed up and left for any amount of time. Be careful with mothballs - I developed a nasty allergy to them after returning to the boat after it had sat for ten months with mothballs everywhere. The boat was remarkably mildewfree, and also finally cockroach free after a severe infestation, but the fumes from unevaporated mothballs did not dissipate quickly enough even with the hatches open and the resulting allergic reaction was a problem for several weeks (until we hunted down and disposed of every single naphtha crystal).

MISINFORMATION - Tides decrease the closer you get to the equator. This is a surprisingly prevalent idea that is completely and incredibly wrong. On the Atlantic side of the Panama Canal, tides are minuscule, 1 foot, more or less; on the Pacific side of the Panama Canal, tides are 12 to 15 feet. Closer to home, the tides in South Carolina and Georgia are significantly higher than those in the bracketing states of North Carolina or Florida. You can outrun a hurricane; hurricanes in the northern hemisphere always travel in a northwesterly direction; southwesterly direction in the southern hemisphere. These are such dangerous misconceptions that I will devote more time to them than you might want.

- **Examples.** Hurricane Klaus, 1981 (?) in St. Martin. It hit the Virgin Islands, then turned around, went almost due East, and hit Sint Maarten/Saint Martin. Hurricane Gilbert in 1988, traveled unswervingly due West, over Trinidad, along the coast of Venezuela, over Bonaire, tearing off their airport roof, slammed smack dab into the Yucatan peninsula. These two hurricanes surprised a whole lot of people. Had you tried to sail to the “safe semicircle”, you would have sailed right into the path of the hurricane. The average cruising yacht cannot outrun a hurricane traveling at 15-20 knots. And if you have ever seen the incredible seas that a hurricane raises several hundred miles from the winds, I don’t think you would want to be at sea in a small boat during that. In Saint Maarten in 1989, two hurricanes before Hurricane Hugo passed the island without any wind hitting the island. But the sea swell was so severe that it damaged the cruise ship jetty in Philipsburg, and destroyed the fuel dock at Chesterfield’s. It lifted huge boulders, weighing tons, as if they were fish floats. Wow! The most graphic information on tropical storms of all kinds that I have found appears in: “Heavy Weather Guide” by Rear Admiral William J. Kotsch (see “Books”).

MONEY - (Watermelon's opinion). We always use local currency. Playing games with U.S. dollars has gotten a lot of people into trouble. I can think of very few places (the Caribbean island of Saint Maarten/St. Martin is one) where U.S. dollars are accepted as payment with no penalty to the tourist. We have been shortchanged in Grenada and Fiji when we tried to use U.S. dollars, and haven’t tried anywhere else. We have been able to get money from ATMs or as cash advances on our credit card in every country we have visited (34 at last count). Nowadays you can even charge groceries, so there is little need to carry large amounts of cash of any kind except in unusual circumstances. If you do find yourself with too much currency, you can always exchange it in the next country you visit. But you cannot exchange coins, so do spend them first. We have a credit card that is automatically paid each month through our cash management account – it is, to our minds, the best of both worlds. We can get money from ATMs or as cash advances on our credit card from banks where there are no ATMs or the available ATMs do not handle foreign bank cards. Because it is a credit card, the bill is presented once a month and is paid; we therefore enjoy the credit card “float” on our money, and yet do not have to worry about interest charges or late payment fees. We get a more favorable exchange rate than for cash (which is the least favorable exchange rate offered) or traveler’s checks. The reason, of course, is that the credit card is electronic movement of money – no actual currency or paper needs to be handled. In most places (Australia and the U.S. are notable exceptions), banks require a picture I.D. before advancing cash on your credit/debit card. It is also a regulation in Australia for sums in excess of a certain amount, but the bank tellers usually don’t know that and so pass out lots and lots of money on just your signature. The U.S. is just as bad - two countries to worry about your money. It is helpful to have both a MasterCard and a VISA card - in some places one works, the other doesn't; or one works better than the other; or the distance to go for a MasterCard is hours away from the closest VISA place (or vice versa). Establish a good filing system right away to keep track of your charges because banks make mistakes.

Several years ago a yacht reported in the SSCA Commodore’s bulletin that they had not worried about getting their mail while they were cruising from South America up to Central

America, and when they finally received their mail they discovered that somebody had manufactured counterfeit credit cards using their number and had looted their debit card account of something in the range of \$19,000. Because of the fact that their cards had not been stolen they were unaware of the problem until months after the bulk of the charges against their account were made, and at the time of their letter they were doubtful of recovering almost half of that amount.

I asked Merrill Lynch if this could happen to us, and they replied that we had a year to report fraudulent activity on our account without penalty.

MONEY BELT - or, fanny pack. Cannot be picked the way a wallet in a pocket can be, leaves one's hands free. Can be hidden underneath a loose shirt making it unobtrusive. A two or three-compartment one is better - transfer small amount of money to front compartment, carry bulk of money in other compartment - transfer occasionally out of sight of nosy thieves. Needs to be big enough to carry passport. (see also, "Passport", "Thieves")

MOSCARPONE CHEESE - 1 Litre double cream (heavy, 35% fat, cream) (note: Nestlé makes a tinned cream that works well. I have also used UHT cream), heated to 70° C (158°F). Mix ½ cup of hot cream with ½ teaspoon tartaric acid, whisking until dissolved. Pour in rest of hot cream and set aside to set. After 10-15 minutes, when beginning to set, pour in muslin bag (or paper coffee filter) and place in colander over a bowl to catch water, refrigerate for at least 12 hours. Must be used within 2 days as fresh, or use in cooking after that. If used to make Boursin cheese, fresh onions and garlic will inhibit bacterial growth and it will keep longer refrigerated. If you can't get Cream Cheese, this will work.

MOSQUITOES - They transmit Malaria, Dengue Fever and other nasty diseases. One cannot carry too many defenses against them. (see "Mosquito Repellent")

MOSQUITO REPELLENT - Those containing "Deet" have worked best for us. Best we ever found was sold in Sint Maarten (and the island of Phi Phi Don, Thailand!): "Mosquito Milk" in a roll-on-applicator. Have reused applicator with other repellents - roll-on is good, repellent not as great. The roll-on applicator is good because "Deet" dissolves many plastics, so plastic glasses, etc. will show your fingerprints if you touch them after applying repellent by hand. Have bought a mosquito screen treatment in Australia that is a contact poison for mosquitoes. Can also treat clothing when one is going ashore. According to tropical medicine information from Australia, mosquito coils and "Vap-mat" electrical fumicide is good; ultrasonic buzzers do not work against malaria-carrying mosquitoes. There is a 12-volt Vap-Mat. If you use kerosene lamps, consider carrying Citronella Oil for it, which repels mosquitoes and sand fleas. You can buy small containers of pure citronella oil and add a small bit to regular lamp oil, and to skin moisturizer to make your own repellent. (see also "Recycling")

MURIATIC ACID - (Hydrochloric acid) - Fastest acid for removing calcium from hoses, etc., cleaning seashells, but very active and quite dangerous if not used with care. Must be diluted significantly before using (always pour small amount of acid into larger amount of water to dilute, not other way around). Start with very mild solution to be sure you can control reaction. Recommend using with rubber gloves. (see "Acid")

N

NAVIGATION CHARTS - it seems as if only the U.S. charts are not copyrighted, and thus can be photocopied legally. So if you see "Not a chart, not to be used for navigation" on a photocopy of a chart, it is most likely stamped on there to protect the copier from prosecution for infringing copyright laws. Photocopies have a few drawbacks. The black toner will leave the copy and

adhere to the plastic envelopes that are available to store charts flat. The paper is lighter and absorbs water more easily. But they are cheap. ([Used charts](#))

NEWSPAPERS - Local newspapers will give you vital information about conditions on land that you should know. It was through a local newspaper that we learned that there was a typhoid epidemic in Western Samoa while we were there (not something that was discussed with the tourists by the locals, naturally). Same for cholera in Ecuador (where the local guide told us there was not cholera in that particular area). We have found English-language newspapers in most countries we have visited - you often have to look hard for them, but ask around.

NI-CAD BATTERIES - For tools, some manufacturers have a 12-volt battery charger. Some battery-operated tools have other appliances that use the same battery - neat stuff: flashlight, fluorescent light, drill, etc., all using the same battery. Fluorescent light is small and bright and great for a cockpit light when entertaining at night or to bring along to another boat. Ours is made by Makita.

NON-SKID - Easy and effective non-skid for plates and bowls: put dabs of clear silicone adhesive on the bottom of dishes (inside of bottom rim if there is one), then set down on sheets of wax paper (or "baking paper") until silicone sets, then peel off paper. The wax paper keeps silicone from adhering to your table, and placing them right side up while silicone is soft insures that dishes will sit flat and the silicone won't set in unbalanced lumps.

O

OXALIC ACID - An organic acid, good for removing rust stains. Can be obtained in powdered form from paint stores (it is used to bleach and clean raw timber). Will only dissolve completely in hot water. - Rehydrate - 1 Tbsp. oxalic acid to 2 cups water. Works slowly, not as active as muriatic acid or phosphoric acid - safer on fiberglass. See "Stain Remover" for a more efficient way of using it. Store in non-metallic container.

- **Precautions:** Although the skin can be burned by the acid, this acid can also damage internal tissues through absorption through the skin without burning the skin (as does hydrofluoric acid). With no physical warning of the danger, I suggest that you use rubber gloves. We have used oxalic acid for years with no injuries or problems. Also be careful and don't inhale fumes or powder. Never boil the solution.

P-Q

PANADOL® See "acetaminophen"

PASSPORT - Some countries require foreigners to carry the original of their passport at all times (Ecuador, Colombia). Most countries we have visited required our passport for identification in order to get a cash advance; several asked for it to cash traveler's checks, (once) to convert cash into local currency. Be prepared.

PARACETOMOL See "acetaminophen"

PHARMACEUTICALS - "The Offshore Doctor" (see "Books") has a good list of drugs recommended for cruising yachts. For prescription antibiotics, don't let your doctor get away with not providing you with a prescription and good information on the use of them. Do not ruin your stay in a beautiful anchorage or island because of a strep infection that can't be treated locally. Lots of stories about this! In Southeast Asia, beware of counterfeit drugs in Thailand and

Indonesia - a serious problem. According to a report in TIME Magazine, the only places in Southeast Asia where one can be sure of getting proper pharmaceuticals is in Hong Kong and Singapore. We cannot prove it, but we know of people who have found antibiotics that they bought in Malaysia to be ineffective, and there is some reason to believe that it was a counterfeit drug.

Appendix - TIME Magazine article on counterfeit drugs: TIME, January 26, 1998 Vol. 151, No. 3 Swallowing Bitter Pills! Fake and adulterated medicines are posing health risks greater than the diseases they're meant to cure, By NISID HAJARI

During one of the meningitis outbreaks that periodically ravage the lands bordering the Sahara, a team of Belgian doctors trekked into Niger's remote Madoua district in 1995 to deliver a potentially lifesaving vaccine. They inoculated thousands of villagers before noticing imperfections in the drug, which had been donated by neighboring Nigeria. The transparent solution did not always dissolve correctly, and strands of hair floated in several vials. "When we first received the shipment, I joked that it was probably fake," recalls group leader Dr. Ginette Marchant. Tests proved her horribly right: the "vaccine" consisted of little more than saltwater. Marchant guesses that at least 300 of the villagers who received the placebo eventually contracted meningitis and died, while an additional 60 were handicapped for life. Such tragedies have become an epidemic unto themselves.

Experts estimate that up to half the medicines now sold in sub-Saharan Africa could be fake, and the problem neither begins nor ends at that continent's shores. "Africa is a dumping ground for counterfeit drugs produced in Asia," says Dr. Harvey Bale Jr., director-general of the International Federation of Pharmaceutical Manufacturers' Association in Geneva. From Karachi to Beijing the production and distribution of contaminated medicine has developed into a virtual shadow industry-- a network as amateurish as the individual con who refills discarded syringes with sugar water, and as professional as the massive chemical factory that labelled barrels containing deadly diethylene glycol, commonly used in lacquer and anti-freeze, as harmless glycerine. (That 1996 shipment, thought to have originated in Dalian, China, made its way into a cough syrup that killed more than 80 children in Haiti.) The region's ill are regularly faced with medicines that contain substances ranging from chalk dust to fruit peels--"cures" that can be as deadly as the disease.

The extent of the contamination remains frustratingly difficult to pin down. The most dramatic indications of the threat are anecdotal-- the Karachi woman killed by a brand-name, broad-spectrum antibiotic later found to contain talcum powder, or the Latin American man whose kidney transplant failed because the drug meant to prevent organ rejection was apparently a Chinese-made counterfeit.

Authorities in Asia's developing countries often lack the resources to track their sprawling pharmaceutical markets accurately: in India an estimated 26,000 companies produce licensed drugs. And, for their own reasons, both the larger drug companies and local governments shy away from publicizing fakes. Although Western health officials name mainland China as perhaps the world's largest producer of substandard medicines, Beijing insists that its inspectors found irregularities in only 29 out of more than 167,000 cases investigated last year.

Pakistani authorities claim that a mere 2% of the 20,000 drugs registered for sale nationwide are faulty. But private estimates are less reassuring. Dr. Kaleem Butt, head of the Pakistan Medical Association, thinks the proportion could be as high as 50%. Bale estimates that counterfeits make up at least 5% to 10% of the Asian market. Even those figures reflect only a fraction of the problem.

The definition of a counterfeit --medicine packaged to resemble a name-brand pharmaceutical-- can include both placebos and drugs deliberately made with the wrong dosage of active ingredient, as well as those that release that ingredient at the wrong rate. But the dangers that confront patients are even more varied. Across Mexico mysterious and poorly regulated generic brands fill pharmacy shelves; the companies listed as producers, using vague

names like American Pharmaceutical, often turn out to be as fake as their products, and investigators suspect the drugs

PHOSPHORIC ACID - Many rust removers contain phosphoric acid. Good for removing rust stains in fibreglass (Oxalic acid is gentler). Can remove calcium build-up in water lines (but Muriatic acid is faster). (see also, "Hydrofluoric Acid", Oxalic Acid", "Muriatic Acid", "Vinegar")

POLARITY - Reverse polarity on your shoreside power will create severe electrolysis problems. Australia and US sell polarity detectors. Australia's is great, just plug into any outlet. Friends of ours had been tied to a dock in American Samoa for several years when we arrived. When we tied up at the dock for a few days and hooked into the power supply, Peter found that the polarity was wrong for our boat. He made some adjustments in the wiring, and things were okay. I asked Peter what would happen if he hadn't corrected the polarity. He said that because our boat had a good bonding system, not a whole lot, but we would go through our zincs really quickly as our boat behaved like a giant submerged battery. I mentioned it to our friends, but the skipper was an academic-type who hadn't the faintest idea of electricity and its quirks, so he just shrugged. Several months later, as we were sitting in Tonga, he came up on the radio to tell us that he couldn't use the engine, that his engine was leaking cooling water dramatically, and could somebody tow him into the anchorage. When he was settled in the anchorage an engine mechanic came out to look at his engine, which had its entire water pan corroded through. As they sat there, more things continued to deteriorate, and they decided to get hauled out on the railway haulout facility there. We were no longer in Tonga when they fired up their poor engine, but other friends reported on their progress in the 200 yards to the dock - "they made it to the dock just as their propeller fell off." We can't help but think that all their maintenance problems were the result of their unbonded boat suffering electrolysis from the miswired electrical supply. So beware!

PRESCRIPTION DRUGS - Some formerly British Islands in Caribbean, most Latin American countries, Malaysia, Indonesia, and Pacific Islands (except Vanuatu) do not require a doctor's prescription to sell pharmaceuticals. French countries require a doctor's prescription. Homeopathy is quite popular in France, so be forewarned that some doctors will prescribe homeopathic substances instead of antibiotics.

PRESERVING FOOD:

- **Cheese:** Hard cheeses can be waxed by dipping whole cheese in melted wax - will then not need refrigeration. Soft cheeses can be preserved for long periods by completely covering in vegetable oil and storing in sterilized glass jars. Refrigerated cheese lasts longer without mold if wrapped in a paper towel moistened with vinegar inside a container.

- **Chillies:** Whole, or chopped, with seeds removed, covered with vinegar in glass jar, will keep for 12 months or longer. Note: do not let metal touch contents - take out whole chillies with wooden or plastic utensil.

Caution: Do not use bare hands to prepare large quantities of chillies - the oils do not wash away easily, and every time you wet your hands for days afterward they'll burn (obviously, this has happened to me!)

- **Garlic:** Will keep for months in a cool dry place if left in the bulb. Peeled and immersed in vegetable oil will keep even longer in refrigerator - oil good for cooking, salad dressings, but garlic is so universally found that this is rarely needed, unless you like the idea of garlic-flavored oil as I do.

- **Fresh fruit and vegetables:** If washed in a mild chlorine bleach or iodine solution (or use antibacterial tablets, such as Milton's, Steadiflow - which see) and allowed to dry completely before storing, will extend the life of most vegetables as well as kill nasties such as cholera, typhoid bacillus, and the parasite that causes amebic dysentery. To keep large quantities of

onions and potatoes from bruising and sprouting, and from spreading mold throughout the batch, store in old white cotton socks. Each sock can hold up to 2 pounds of onions or potatoes. If one is bruised or goes bad, the sock absorbs the weeping so it doesn't spread to others so quickly, and is easily identified. Many vegetables can be kept well without refrigeration by wrapping them in newsprint. Cabbage, cauliflower, carrots, turnips are good candidates for this.

PROVISIONING - Never, ever buy in quantity anything you haven't tried and like, even if the brand is a familiar US label. Check expiration ("use by" or "best if used by") dates on packages (remember, US is virtually the only country that places its month first in dates). Also, ask around – some countries' products are so variable in quality that trying one package will not be an adequate sample. US brand names are produced locally in various countries for that country's taste and budget. Some of them are significantly different in taste and quality from those found in the States, so beware. Do try other countries' products, especially France's – many are superior to US brands in both quality and convenience.

R

RAIN CATCHERS: Our rain catcher is a bit unique for cruisers, though about a year or so after we came up with the idea, we saw a virtually identical system illustrated in CRUISING WORLD Magazine. Since all our sailing is in the tropics, we have a large bimini that covers the aft end of the cockpit, protecting the helmsman from sun and rain. The Bimini is slanted slightly forward. Along the side rails of the Bimini we have attached "gutters" made of PVC pipe. The one end of the gutter is closed off; the other end has an elbow fitting to reduce pipe size to accommodate flexible hose. Water flows into the gutters from the sides of the Bimini into the hoses that are led to our tank fills, or to jerry jugs if we are away from the boat or underway. It can be risky leaving the hoses to fill water tanks unattended - a long enough absence, or a torrential downpour could result in a lot of water in the bilge once the tanks have filled to overflowing.

The advantage of this system over the usual hose fitted to a boat's sun canopy is that it can collect water even when you are sailing. It is extremely easy to set up (the gutters are in place permanently, the hoses take a few seconds to plug in), and when at anchor and the sun canopy is up the water that is caught drains onto the Bimini and thus into the tanks or jerry jugs. We can attach a filter to the hoses in anchorages where the air pollution dirties any water that we catch, and it is always instantly available no matter the conditions.

RECYCLING - Many plastic containers are convenient for use around the boat. My chemist father-in-law warned us that all plastics are not created equal. In the U.S., plastic containers that are intended to hold food are regulated by the Food & Drug Administration, and thus the quality of the plastic will be better than plastic containers that contained non-food items. This is more important than we usually give credence to – the plastic in non-food containers uses a lower quality "plasticizer", and will more readily migrate out of the plastic - nasty stuff you don't want to ingest.

- **Squeeze Mustard** (or honey, syrups) bottles - become salad dressing containers, soap dispenser for laundry & bathing off back of boat and serve as small galley containers while larger bulk container stays in locker. I have squeeze mustard bottles with permanent labels for cooking oil, salad oil, olive oil, and vinegar. I buy oils and vinegars in large quantities, gallons when possible, and thus the small bottles are more easily stored and more easily used.

- **Ocean Spray** 2 quart and gallon plastic juice bottles are excellent because they are six-sided, so store well in lockers, they are air tight with a gasketed lid, and all plastic (other companies are now also using these bottles). I use them to store rice, sugar, coffee, any granular bulk food product (each 2-quart bottle holds just grams shy of 2 kilograms). Use to make solar iced tea, store reconstituted juices. Also freeze beverages in them for backpacking excursions, cold

drinks at pot-lucks (two bottles will just barely fit in our freezer box - Adler Barbour Cold Machine). On offshore passages we fill with fresh water for our "abandon ship" bag.

- **Liquid laundry** soap bottles become: dinghy bailers; anchor rode floats; anchor trip line floats. We choose laundry detergent by the color of its container.
- **Soft Soap™** pump bottles in galley and head for dispensing soap for washing up.
- **Small plastic bottles** with plastic lids for holding small parts (nuts, bolts, screws, etc.)
- **Roll-on deodorant bottles** are good for mosquito repellent, keeps it off your hands.
- **Old white cotton socks** that are too stretched out to wear any more are excellent for storing onions and potatoes - see "Preserving Food"

REFLECTIVE TAPE - Great for finding dinghy or boat in dark unlighted anchorage, and it is amazing how dark an island with no electricity gets on a moonless night. Intended as a way our boat can be found at night in an emergency by a rescue boat. Also a great gift for people. Makes little lights seem bigger and brighter. We also put reflective tape onto a channel marker in an uninhabited anchorage with only one exit from the reef - just in case we needed to escape in the middle of the night.

REFRIGERATION: Ours is 12-volt exclusively. It is small, but the freezer unit, about 1 square foot, is adequate (barely) for our needs. We would not want to do without refrigeration in the tropics, though we have met many a boat that has done without. Although we haven't seen as much of them recently, engine-driven holding plates were very popular about ten years ago when we were still sailing in the Caribbean. These holding plate refrigerators, we are told, are very efficient. However, we noticed that when the boat was in a marina, with unlimited electricity available, the boat still needed to be run for one or two hours every day to keep the refrigeration running. Since we have a wind generator and two solar panels, we do not feel that our refrigerator is a major drain on our resources.

REFRIGERATOR BOXES. Our refrigerator is a standard top-access box. Almost three feet deep, it used to be difficult to keep order in the box, and with the freezer (evaporator box) near the top, fresh vegetables often froze if they fell to the bottom of the box. After a lot of false starts, I've come up with a system that works for us.

The small freezer (evaporator box) is set in the back half of the box. I installed two rubber tracks along the sides of the box just forward of the freezer, which divided the box into two sections. Peter made up two 3/8" fibreglass panels to slide in the tracks. Each panel was the full width of the box and half the height of the box. The after end of the box, with the freezer box, was thus isolated from the forward section. I then had three plastic boxes made up to fill the forward section. The bottom box is where I store food and drinks that I want very cold, and things that I don't use on a daily basis. The smaller of the top boxes can hold six soft drink or beer cans. It usually holds four beer cans and a jar of jam. The larger box holds vegetables, butter, and other items that I use on a daily basis.

The back section, closest to the freezer box, is where I store half gallon bottles of water, wine, meat, frozen food that will be used within the next week. I can pack a frozen chicken underneath the freezer box and it will stay frozen for two or three days, and be only half-thawed after perhaps four days under there. I can keep cryo-vac'ed beef that has been frozen by the butcher for several months stacked up under the freezer box, and still have room for my bottles of water, juice, and wine alongside. I put a "cold blanket" over the after section where the freezer is, so that only the forward section with the boxes, is exposed to the air when the top is opened.

The boxes are made of thin flexible plastic - the type that is used for cutting boards. This plastic isn't glued, it's heat-bonded. I made up the patterns for the three boxes and brought them to a plastics shop to cut and make up for me.

The boxes are very strong and light. I punched holes in the sides of the top boxes to insert strong cord that is used to lift the boxes out. The series of boxes and panels enables me to find things quickly and easily, and creates temperature "zones" in the box. The refrigerator doesn't run as hard because less heat is let into the box when the lid is opened, and my vegetables, especially my precious celery and peppers, don't freeze anymore. SEE PHOTOS in "[Melon Gear album](#)"

RINGWORM - Highly infectious fungal infection, untreated leaves nasty scars. Various medications for it, worth carrying a small supply. (see also, "Fungus Infections", "Staph Infections")

RUST

- **Tools:** all your tools will rust, no matter how carefully you keep them from touching salt water. A new product that helps is Metal Wax. Also, silicone grease works.

- **Canned food:** if your food lockers are dry lockers (i.e., bilge water cannot get to them), cans will usually last without any treatment. Those people who varnished their cans told us they had lockers (or bilges) full of peeled varnish and cans just as rusty as anyone else's.

Exception: canned fruit juices, canned fruits, canned soft drinks - seem to form pinholes - some of this is electrolysis if aluminum soft drink cans are stored with food tins - the soft aluminum drink cans often form pinholes, the carbonated or acidified liquid leaks onto the tins setting up electrolysis and causes them to rust and leak (especially along the seams). After too many disasters I will not store aluminum cans with any other canned foodstuff.

- **Rust remover:** Rust Stain Magic (highly dilute Hydrofluoric acid) is good for removing rust from clothing. Phosphoric Acid or Oxalic Acid is good for removing rust stains from fibreglass. Follow directions carefully, and wear rubber gloves. Although I swear by it, hydrofluoric acid is a dangerous acid to use, so be careful.

- See also: Brass Wool; Metal Wax; Oxalic Acid; Phosphoric Acid, Salt Water; Silicone Grease; Steel Wool.

S

SAIL CLEANING - Do not use chlorine bleach on sails, it seriously weakens Nylon® and Dacron®. Use non-chlorine bleach, or baking soda and hydrogen peroxide solution (the original Oxygen bleach).

SALMONELLA - is the most common type of food poisoning – poorly refrigerated or stored cooked foods the most common culprit. Chicken and fish the most common meats that cause a problem. Headache, abdominal pain, nausea, diarrhea, and sometimes vomiting. Fever almost always present. If food poisoning is suspected, take two charcoal tablets (available in health food stores), then a broad-spectrum antibiotic, such as ampicillin or amoxicillin (though WHO recommends antibiotic only for infants, the elderly, and those weakened by other diseases, the head of the U.S. Army Medical Corps., for the Pacific basin told us he recommended it any time there was food poisoning). Take charcoal tablets first - they cannot hurt, so even if ineffective for your particular problem, they cannot make it worse. (See "Charcoal Tablets")

SALT WATER - In the tropics even the air is corrosive. The problem is that salt is everywhere, particularly on one's hands - pick something up and transfer salt to it - it then rusts, corrodes, mildews. Stainless steel fittings that never showed a spot of rust in temperate zones will quickly show rust spots in the tropics because of salt spray that dries before it has a chance to run off - even a two-day smooth and dry passage will result in salt crystals everywhere on topsides, and spots of corrosion leave pits in the stainless steel where more rust will form.

- What we do: Before a passage, clean all deck fittings, then apply a thin film of Metal Wax. In harbor after passage, wash everything one can with fresh water.

SCOMBROID POISONING (Tuna and mackerel-like fishes) - (NOTE: This is from information provided to us by a doctor, so terminology is a bit esoteric in places - sorry. I include this because a friend of ours suffered from this on a five-day passage in the Pacific, and it was diagnosed and prescribed for over the SSB radio, while she had a few very frightening hours.)

Scombroid poisoning is an allergy-like intoxication caused by the bacterial action of improperly stored tuna, skipjack, bonito, and other mackerel-like fishes which are highly esteemed as food fishes throughout the Pacific as well as in other areas. These fishes become dangerous to eat when certain strains of the bacterium, *Proteus morgani* act on a naturally-occurring substance in scombroid fish flesh called histidine. This action causes the production of histamine and a histamine-like substance called saurine without producing the usual signs of putrefaction. This bacterial action may be extremely rapid in warm climates if the fish is not properly refrigerated.

The histamine and saurine produced may cause a severe allergy-like reaction in man upon the ingestion of scombroid fish flesh containing these products. The presence of these toxic substances is sometimes detected upon initial ingestion by a "sharp" or "peppery" taste. Symptoms develop within a few minutes to 3 hours and are often sudden in onset. These include erythema of the face and upper part of the body, severe headache in the back of the skull, giant hives, conjunctivitis, and periorbital edema, edema of the lips, tongue and throat, respiratory distress, tachycardia, abdominal pain, malaise, generalized weakness and giddiness. Fever and mild diarrhea occur in a few cases as does nausea, but victims rarely vomit. A few cases have been reported in which the patient has gone into shock followed by death: however, the acute symptoms usually persist for from 8 to 12 hours after which the patient experiences a rapid recovery.

The treatment recommended is immediate evacuation of the stomach contents followed by the administration of antihistaminic drugs. (See "Allergies")

SELF AMALGAMATING TAPE - Useful for: taping rigging, electrical connections, anywhere that moisture or abrasion will loosen conventional adhesive tapes.

SEWING AWL - a wooden handle, heavy-duty sewing needle (with thread hole in tip). For sail repair the awl is better than regular sail needle and sail palm because one can sew a lock stitch, and more accurately sew in the holes made by past machine zigzag stitching, thus weakening the fabric less. One can substitute a smaller sewing machine needle, doing less damage to the sail. Also, with regular heavy-duty sewing machine needle it can be used to restitch awnings or other fabric articles while insitu.

SEWING MACHINE - I heartily recommend carrying one if you have the space. A zigzag machine is most useful, and no matter how confident you are in your generator, you should consider having a manual crank - there will probably be times when you need it (particularly if you have to make an emergency sail repair - the motor on the machine may not be powerful enough to drive the needle, and might drive it too fast.

Just before we left Darwin, Australia for Indonesia my computer printer died. It didn't owe me anything, though I hated to have to purchase a new printer in Australia, where almost

everything is European prices, and just that much more expensive than anywhere else in the region. So Peter and I went around looking for printers. We wanted a small printer with a universal power supply (anywhere from 110-240V) and ideally also a 12V power supply, since almost all small computer printers operate on DC power (for that matter, so do many computers). We were told by one salesperson after another that we couldn't get a universal power supply in Australia, that they only imported equipment with 220-240V power supply. No matter that we saw a printer being delivered that had a universal power supply in the box (but the dealer had none in stock), when we mentioned it to another store's salesman, he telephoned the Australian distributor, who insisted that the printer only came with a 220- 240V power supply. Frustration. So we finally bought a printer that we knew operated under DC power - as with all the printers we had owned on the boat (this was number 3), input was AC, through a converter to DC into the printer. The salesman had told us that it was 220-240V AC only, but we had been through this before in Australia with other equipment and we knew better, so we ordered it, paid too much money, but at least we had a printer. And when we opened the box, there indeed was the power converter - 220-240V Input, 13.5V DC Output to the printer power plug.

While we were waiting for the printer to be delivered, Peter went to another computer store and asked about the power supply for the printers they were supplying, figuring that maybe the ignorance about power supplies was limited to the one salesman we had so far dealt with. The salesman insisted that they were only 220-240V. Peter tried to lead the fellow, saying, "but does the printer run on AC or DC power?" Only 220- 240V AC power, insisted the salesman. Finally, Peter asked the fellow if he could see the power cord. So the fellow brought it out. Turned it over. There, clearly, it stated "AC Adapter Input: 100-240V AC; Output: 13.5V DC" So Peter pointed this out to the salesman, who adamantly stated that because it had an Australian 220-240V plug, it could only be used with 220-240V power!

It is not only in Australia that the salespeople are information-challenged, and thus you need to be an informed consumer before you go about buying anything, or even contracting for work. We have found that provincialism is rampant in the world - the country the service technician in is probably the only one(s) he has ever been in, and too often they think that that is the only way things are done! Usually it is just inconvenient, but it can be costly, so beware!

SHORE POWER: Except in the US, some places in the Caribbean, and some parts of S. America, most places will provide shore power in the 220-240V range, and you should have a competent marine electrician wire your boat so that you can conveniently convert to this range and properly instruct you in how it can be converted when necessary. (NOTE: Since wiring for 110V needs to be more robust than wiring for 220-240V, it is easier and less expensive to go from an already-wired-for 110V boat to 220-240V than the other way around - really only requires changing circuit breakers, wiring new outlets). Write it down; be sure you have understandable instructions and diagrams, and properly labelled parts. The code for grounding varies from one country to another; therefore, an AC polarity indicator is an absolute necessity (most marinas will supply adapters to hook up your boat, and you need to have a polarity indicator to be sure that yours and theirs are compatibly wired). We also have a marine battery charger that, with the flick of a switch, accepts either 110- 120V or 220-240V. (see "Polarity")

SHORTWAVE RADIO - For voice transmission, computer-generated Faxes; weatherfax when linked with computer. Giant worldwide party line for keeping in touch with friends, emergency calls, passage making. Options are a Ham Radio or a Single Sideband Radio (SSB). There are many Ham nets for reporting progress while passage-making. (see marine radio net details <http://www.cruiser.co.za/radionet.asp>)

SILICONE GREASE - Excellent for treating metal tools, sewing needles, etc. for rust prevention (see also "Dinghies", "Armor-All", "Metal Wax")

SINGLE-HANDING: Peter and I haven't done any single-handed passages, and we don't care to. However, we know quite a few experienced single-handed sailors, and I've tried to condense some of the information they have given us.

One single-hander is a German friend, another Peter, who has made five single-handed Atlantic crossings. In my opinion, his most significant comment was "it was very irresponsible of me to do that." Thinking about two other former single-handers we know, who try to sleep for no longer than 20 or 30 minutes at a time before getting up to look around, I asked Peter how he handled watches. He said he got up with the sun and went to sleep with the sun. I expressed something between amazement and horror when I said, "you mean you slept the night through?" "Yes," he said. (So did Joshua Slocum)

He then told me that one night during an Atlantic passage, "something" woke him in the middle of the night, and when he went up on deck to look around he saw the most incredible phosphorescent "highway" running alongside his boat. When he got over his grogginess, he realized that what he was looking at was the disturbed phosphorescent stream of a big ship that had come much too close to him as he slept. That got his attention. With the increased automation of ships, and the relaxation of rules governing the number of crew on watch, you cannot count on a ship seeing you. The fellow (and it might be only one fellow) on watch is doing more than watching the radar, and it is very easy to be distracted for more than the 20 minutes or so that it takes a modern freighter to overtake a small sailboat from first sighting.

When we were in Western Samoa we met a fellow in his 70s who was on his third solo circumnavigation. He didn't make it, running his boat up on Australia's Great Barrier Reef, but although the boat was a total loss, he managed to escape with his life. He was headed for Papua New Guinea from New Caledonia.

He had checked his position, set his wind vane steering, and gone to sleep. He awoke to the sound of surf. While he was asleep the wind had changed, and the wind vane steered him right onto a reef. In his letter he commented that he had become too complacent. We understand complacency; it has caused us to get into a few pretty scary situations although luckily we have avoided the ultimate disastrous result this fellow had.

The second or third day out on our passage from Ecuador to Easter Island, I was on my favorite watch, 4 am to 7 am, when I saw a fishing boat on a collision course with us. We were sailing incredibly well, doing a comfortable 6.5 knots, just humming along, and so was the fishing boat, though probably at more like 10 to 12 knots. Nobody answered or acknowledged my radio hail in either English or Spanish. Finally I had to accept that the boat was not going to change course, and so I tacked out of his way, just in the nick of time. I can only assume that everybody aboard was asleep and the boat was on autopilot. We had taken on a young fellow as crew just for the Ecuador to Tahiti passage (he wanted to surf his way around the world, and we welcomed an extra pair of young hands), He had grown up on fishing boats, crewing on them from his early teens, and for at least one year skippering one. In discussing this fishing boat's behavior, he told us that we should never, ever trust a fishing boat to know or heed the Rules of the Road. It was he who first suggested that everybody on the boat was asleep. Okay, you get my drift: I don't think much of singlehanded on long passages.

Some suggestions though. We have a C.A.R.D. system (Collision Avoidance Radar Detector). We're on our third since we first installed one in 1993. The first one was upgraded, the second one was fried in a lightning strike, the third is working wonderfully, and the service we have received from the people at the company has always been quick, cordial, and exceedingly helpful (though granted very little has been requested). It must be emphasized, however, that big ships don't always have their radar on, so this is no guarantee of adequate warning of an approaching ship.

One of the most serious problems with singlehanded is sleep deprivation. We've been told of many instances where a singlehander has made elementary errors in judgment because

of sleep deprivation, even experiencing hallucinations. Joshua Slocum reported hallucinations in his book, "Sailing Alone Around the World", so did Dodge Morgan. You're going to need self-steering, and I would suggest that you have both a wind vane and an autopilot. We use our wind vane a lot, but in light winds or when we're motoring, the autopilot is necessary. As most of our single-handed friends say, you spend most of your time on passages lying in your bunk reading.

Not everyone can take short naps, and when things are going well it's difficult to discipline yourself to taking naps to conserve energy just in case conditions deteriorate and full energy and alertness might be needed. But that's what you should do. I would suggest you find a timer that you can set to go off after 15 or 20 minutes and then reset to the same time - then you can go up, look around, then reset the timer to go off again in another 15/20 minutes. This is especially useful at night, when it's more difficult to maintain vigilance. The only problem with the kitchen timers that I use is that their alarm isn't very loud. It's not a real problem for me, because any sound gets my attention, but for Peter, and many others, nothing short of a cannon going off will wake them.

- **Some more suggestions**, and expansion on my comments from John, a delivery captain who has done many single-handed ocean crossings. He acknowledges that each person has his own physical sleep pattern, and watches need to be adjusted to a person's unique physical needs. John says that he has a timer set for 20 minutes, and he stays awake through the night, partially dozing for the 20 minutes until the time goes off. He then checks the compass, takes a good look around, shines his small torch on the sails and wind vane to be sure they're doing okay, then settles down for his next 20-minute nap. He says that the trick is to never come completely awake. When the sun comes up in the morning he'll go below for an hour's sleep, to be repeated once or twice more during the day. He agrees that sleep deprivation, and physical exhaustion, are the two greatest enemies of any sailor, particularly so if he's single-handing.

He likes what he calls a "dog house" - i.e., a pilot house or, at the least, a hard dodger similar to what we've got on the WATERMELON, where you can be well-protected from the weather. Nothing will exhaust a sailor more than being cold and wet and stressed. He says he'll sit in the protection of the dodger, where he can see all around him, and nap lightly, conserving his strength. From our own experience, I can agree that having the hard dodger has increased our cruising comfort immeasurably.

German Peter said that he would lose as much as 20 pounds on an Atlantic crossing. I firmly believe that the demands of passage-making require good nutrition. You should carry quick easy foods for when the weather gets rough. I personally find that instant noodles, which can be rehydrated with just immersion in boiling water for a few minutes, supplemented with canned meat and vegetables, makes a quick, easy, hearty meal. Couscous, another carbohydrate that is simply "cooked" by just pouring on boiling water to rehydrate it in a few minutes, can also be improved with various additions. There are lots of these types of foods that are easy to prepare that should be part of your provisioning and trip planning. Carbohydrates are the source of metabolic energy, both for quick bursts and for endurance. Fats are how your body stores calories it doesn't use, and it's also what your body burns for heat - so you will need more fat in the colder weather and waters of the North Atlantic than you will need in the warmer climate of the tropics. Metabolizing protein takes the greatest toll on your system, requiring large amounts of water to metabolize. That's why survival rations consist almost exclusively of carbohydrates and fat - unsalted hard tack biscuits and chocolate being the most common. I would say in these modern times that breakfast bars would be a good substitute for the old hard tack and chocolate.

In my opinion, the hardest part of a passage is landfall. Lots of hard things to run up onto, lots of boat traffic, and sometimes many hours before you are safely in port. Making landfall when you are exhausted, and then spending several hours negotiating passages and strange navigation marks, if there are any, is loaded with opportunities to make mistakes.

Offshore you have lots of opportunities to let your eyes and mind wander, and to take short naps, but coastal cruising and making it into port requires pretty much full attention. If you are tired from not enough sleep, you are at risk, and there's nobody with you to offer a second pair of eyes and a second opinion on what you are seeing.

Another one of our friends was a career navy officer who spent most of his almost 30 years in the navy at sea, and then moved off the ship onto his own boat. He had no permanent partner, but he had no trouble finding people who would crew for him and pay their share of the expenses. He made 1-1/2 circumnavigations that way, and had no regrets, and claimed to have had only one unfortunate experience with crew in the five or six years he was passage-making. I think that finding crew might be a bit difficult at times, but it has its advantages, and you have somebody to share the work and the joy of cruising. And as we "older" cruisers will tell you, there's a pleasure and comfort to be sitting in the cockpit of your boat, talking with your partner/crew, and saying "remember that sunset in Mangareva?" Or the volcano in Tanna, or whatever.

SOAP - Joy Liquid, of course, is the most common dishwashing liquid for all-purpose use in salt water. Dawn Liquid is the same.

NOTE: Joy Liquid + chlorine bleach yields a strong acid that will burn holes in your clothes, not to mention what the fumes will do to your lungs. An Australian dishwashing liquid that is as good in salt water - "DOWN TO EARTH". Read labels. I discovered "Down to Earth" by noticing on the label that it used salt as a thickener. Thus it would work in salt water. Dawn and Joy contain ethyl alcohol, which I think is the reason they work in salt water.

SODIUM METABISULPHIDE. A biocide, used to sterilize home-brewing equipment. It is also used to "pickle" the water desalinator membrane on a boat when the unit will not be used for a week or more. We discovered it also as the "power wash" additive to some mail-order stuff we got as a gift. It smells terrible, but is an excellent biocide to keep bacteria and algae from growing. You need to filter the taste out, which can be done using a charcoal filter. Friends of ours used it exclusively for their water treatment. They once had their water tanks go foul, even using this, when they filled up their tanks in Phuket Thailand for their passage across the Indian Ocean. The water they received was heavily fouled and they did not pre-filter it. It is also possible they did not use a strong enough solution for this passage. See "Water".

SOLDERING IRON(S) - Peter is adamant that all electrical connections in a boat must be soldered. Thus we carry a 12-Volt, Butane (available at most hobby shops, electronics shops), and a 240-Volt soldering iron. The 12-volt is the least efficient, the 240-volt gets the hottest, the butane is in between the two with regard to temperature, and it's other benefit is that it is infinitely portable and convenient. Peter would not give up any of them.

SPACE AND WEIGHT-SAVING SUBSTITUTES - Kool-Aid unsweetened Lemonade mix for lemon juice; freeze-dried fruits and vegetables (Australia and New Zealand); water purification tablets for liquid laundry bleach, acetic acid for vinegar (See "Water purification"; "Acetic Acid").

SPARE PARTS - Every cruiser could sink his boat with spare parts. Ingenuity saves space - multiple uses for any part saves space. There are no hard and fast rules - carry what you feel you need. We suggest that you give thought to those items necessary to complete a passage (such as fuel filters or alternator) or necessary in an emergency while at sea (such as heavy-duty wire cutters to cut away rigging in the event of a dismasting), and give them highest priority. While in port you can borrow or in some way obtain things you need.

Hose Clamps, even the best stainless steel, are in such a hostile environment that eventually they will rust through, so be sure to carry a goodly supply of spares of all sizes. All too often the stainless steel band is tightened with a mild steel screw assembly, so we suggest

testing them with a magnet before buying, if at all possible (in most hardware stores you'll find a magnetized screwdriver you can use to do the testing). We recently tested our inventory of hose clamps, purchased at various times in various countries, and found that 25% have some component that is not stainless steel, including one that says, on the screw assembly "IDEAL - USA, ALL STAINLESS", and the screw is not stainless.

SPROUTING - For fresh vegetables easily carried, bean sprouts are handy and safe when you are in areas where sanitation is doubtful. Mung beans, lentils, wheat berries are tasty and easy to sprout, good in soups and stir-fry dishes as well as salads; alfalfa sprouts for salads.

- **Basic technique:** wash beans (eating grade) and let soak for a half hour or so in fresh water, then rinse and put in a largish jar or plastic container covered with mesh or cheesecloth and place in a dark cupboard. Twice daily rinse the bean and drain thoroughly (they will develop fungus, or rot if left to sit in water). After about three days you will have sprouts - six or more times the original volume of the seeds, so be sure the container is roomy enough.

Many health food stores sell sprouting jars. The sprouts will keep for several days to a week in the refrigerator, two or three days without refrigeration (but they'll keep growing) if they are rinsed twice daily. Alfalfa sprouts work the same way, but it's suggested that after sprouting they be put in the sun for a few hours to green them. Since they are so easy to sprout, it's not worth sprouting more than a tablespoonful or so at a time.

SSCA - SEVEN SEAS CRUISING ASSOCIATION - with over 4,000 members, one of the largest cruising associations around. Publishes a monthly Commodore's Bulletin with cruising information worldwide. We belong, find it invaluable. Periodically publish an Equipment Survey that is most helpful. Many Additional Publications include various cruising guides.

Mail inquiries to: SEVEN SEAS CRUISING ASSOCIATION, INC.,

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Fort Lauderdale, FL 33316 USA.

Web site: <http://www.ssca.org>

One can pay for membership, etc. by credit card. Look for yachts with SSCA burgee to get more information - not necessarily US boats.

STAIN REMOVER - Homemade fibreglass stain remover can be made as follows:

Combine in a stainless steel or enamelled saucepan 2 Tablespoons Oxalic Acid crystals, 2 Tablespoons Corn Starch (Corn Flour), and approximately 1 cup (250 ml) water. Heat while stirring until it thickens, just before it comes to a boil. If solution boils it will thin. If too thick, add a bit of water. Good for removing rust stains, food stains on fibreglass - the corn starch is to make it sticky and hold against the stain - easily rinses off with fresh water, but don't let it sit so long that it dries and cakes. (See also, "Oxalic Acid").

STAPH INFECTIONS - Some popular and heavily-populated harbors are staph reservoirs - Charlotte Amalie in USVI; Blue Lagoon in St. Vincent; Gulf of Paria, Trinidad; Porlamar, Margarita Isl., VZ; Pago Pago, American Samoa are some examples from our experience. If small nicks and cuts redden and fester even with good hygiene, chances are you have a staph infection. Prevention is important, because once it establishes itself, antibiotics must be used to cure it. Staph infection in the tropics can make you very sick. Best prevention is to clean all cuts with antibiotic (or vinegar) immediately, then paint them with Gentian Violet (Note: Gentian Violet is difficult to obtain in the US, not available anymore in Australia. If you can obtain Gentian Violet Crystals, they are excellent because they are rehydrated with water, not alcohol). Once an infection has taken hold, WATERMELON has been very successful treating staph infections with "cotrimoxazole (sulfamethoxazole with trimethoprim)" - familiar brand names Bactrim, Septra. Usually recommended to be taken for 10 to 14 days, but our doctor suggests, for staph and urinary infections taking for no more than 7 days to avoid common side effects -

usually fungal infections, Thrush. (see also "Fungus Infections"; "Ringworm"; refer to "Where There Is No Doctor"; "Antibacterial Soap")

STEEL WOOL - (or Brillo) Don't ever use it on your boat. The tiny iron filings will break off, remain almost invisible until you start noticing tiny rust spots. If you must use a heavy-duty abrasive, use Brass Wool. (See "Rust")

STRING BAG - Useful for shopping for fruits and vegetables in island markets, where one should bring own bag. String bag can be carried in pocket, expands as it is filled. Shoulder strap leaves hands free to carry other things (like a watermelon). If string bag is made of plastic, fruits & veggies can be immersed in salt water before bringing on boat, getting rid of bugs hidden in them. (see also "Backpack")

SUN CANOPY - In the tropics a sun canopy can make a 10-20° F difference in the interior temperature of the boat, not to mention the protection it affords by shading varnished or painted topside brightwork. The best canopies we have had were made with a silvered surface (one was bought through a catalog, was lightweight silvered nylon. Another was made up of ironing board cover material - it stood up longer because it was more strongly reinforced, but weighed more because it was heavier weight cloth). The next best is white. Keep in mind that the lighter the color the more of the sun's rays that are reflected off the canopy and the cooler it will be; the darker, the more that are absorbed. We may not have been as color-coordinated as some other yachts in the anchorage, but we were much cooler. The higher the canopy off the deck the easier it will be to get around on deck, and the more air circulation. We have yet to have the perfect canopy built, but believe that they need to have to be high for ease of getting around on deck, but with side panels that hang down to shade more of the boat when the sun is not directly overhead.

T-U-V

(Empty - nothing yet listed by JeanneP)

W-Z

WATER FILTER - We have a third faucet on our galley sink for filtered water. The water filter is a paper and charcoal filter, which removes silt and chlorine and other minerals from the water. It is a 1 micron filter and also removes parasites such as cryptosporidia, giardia, and the parasite that causes amoebic dysentery. We have also set up a water filtration system for pre-treated water brought to the boat in jerry jugs. We have a water filter housing, and two types of filters - the charcoal filter that removes chlorine and other chemical tastes as well as filtering out sediment, and the sediment only filter. In some places, the water is silty or so very foul that we pretreat the water with chemicals in our jerry jugs, let the silt settle, and then siphon the top 75-90% of the jug's contents through the filter into our tanks. Siphoning is only marginally slower. We then can chlorinate the water or not, and the house water filter takes care of the taste. We have a filter housing that is clear plastic so we can see the filter and better judge when to replace it. Even what looked to be quite clean water going into the filter turned out to have lots of silt remaining, turning the snow-white filter brown. (See Water Purification Tablets, "Sodium Metabisulphide"), [link](#) to choosing a water filter:

WATER PURIFICATION TABLETS - Contain Sodium Dichloroisocyanurate. "Puritabs" sold to campers consist of 17 mg of above. In the Pacific, usually in the baby care section of supermarkets or pharmacies, find "antibacterial tablets" or "Feeding Bottle Steriliser Tablets"

(made by Steadiflow, Milton's [Australia/NZ] or Boots [England], Aqua Tabs) in 500 mg tablets, sufficient to treat 32 litres of water. I also found them in a store in Phuket, Thailand that sold baby gear - clothing, prams, etc., but it was difficult to recognize because it did not have the familiar brand names, and was mostly written in Thai. But it was the same stuff. Only in Singapore were they as expensive as in the U.S. (because they were imported from the U.S. and U.K.) - every place else they were 50% or more cheaper. (See Water Filter; Sodium Metabisulphide; Laundry Bleach)

WEEVILS - People say that freezing your flour will kill weevils and their eggs. Just refrigerating them does not work, though. Even weevil-free flour will often have weevil eggs, so this is a good preventive measure. Many cruisers put bay leaves in their flour, rice, etc. to ward off weevils, but the one time I tried this I found the taste of the bay leaves unpleasant, though I may be the only person who feels this way. If you find weevils in your grains (rice, etc.) and want to salvage, you can try putting a container of grain in the sun and flick off the weevils as they come to the top and die (my friends do this, but I'm too squeamish - I'll toss the stuff first). I sifted the rice I bought (10 kilos, just could not toss it), which sifted out the weevils, adult and larval. I then heated the rice in the oven and put it into air tight bottles. 18 months later, no weevils have reappeared in that rice (it wasn't very good rice, which is why it took me so long to use it all up). Regardless, disinfect the locker where the stuff was stored or you're going to lose everything. An Indian cook giving lessons on cooking curries said that some spices, such as Cumin, are vulnerable to weevils, and if you occasionally "sun" these spices (yes, put them out in the sun), you will kill the weevils and eggs and prevent infestation. So try with all your other items as well. They will bore through cardboard boxes, plastic bags, whatever, to get at your flour or pasta. Nasty things (and they taste dreadful - never mind how I know).

HINTS & TIPS

"HOL-TITE-HANDLE". Be sure to have at least one on board. Handle with suction cups to hold you against the hull when washing the topsides from a dinghy, or when diving on the hull to clean or repair something (BOAT/US calls them "Hol-Tite Handle")

PLASTIC BUCKETS - Good to have plastic handles, best is when you make your own rope handle. Useful for laundry, general carry-all, emergency bailers. Keep lids. If you ever go to the San Blas Islands in Panama, you can trade 5-gallon buckets with lids to the Kuna Indians for Molas, but they're not interested in them if they don't have lids.

HAND PUMP. Always keep a small Hand pump - for bailing dinghy, bilge, etc.

QUICK & EASY WAY TO MAKE YOGHURT. Sometimes it helps to know where somebody is from. In the U.S. you can buy freeze-dried yoghurt culture in health food stores. Still needs refrigeration, but is easy to carry. Otherwise, use approximately 1 tablespoon cultured plain yoghurt and put it into about 2 cups scalded milk brought to room temperature. Leave overnight, then refrigerate. If you set some in a coffee sock or paper coffee filter to drain you will get a thicker yoghurt that can be substituted for sour cream, and the whey that drains can be used to make your next batch of yoghurt. The whey can be kept in the refrigerator for a day or two.

ABOUT THIS EBOOK

This ebook will always be a "work in progress". PLEASE forward me your suggestions for both the DICTIONARY and the HINTS & TIPS sections. These will be included in the regular future editions and will include your "credits".

Fair winds and following seas. - JeanneP