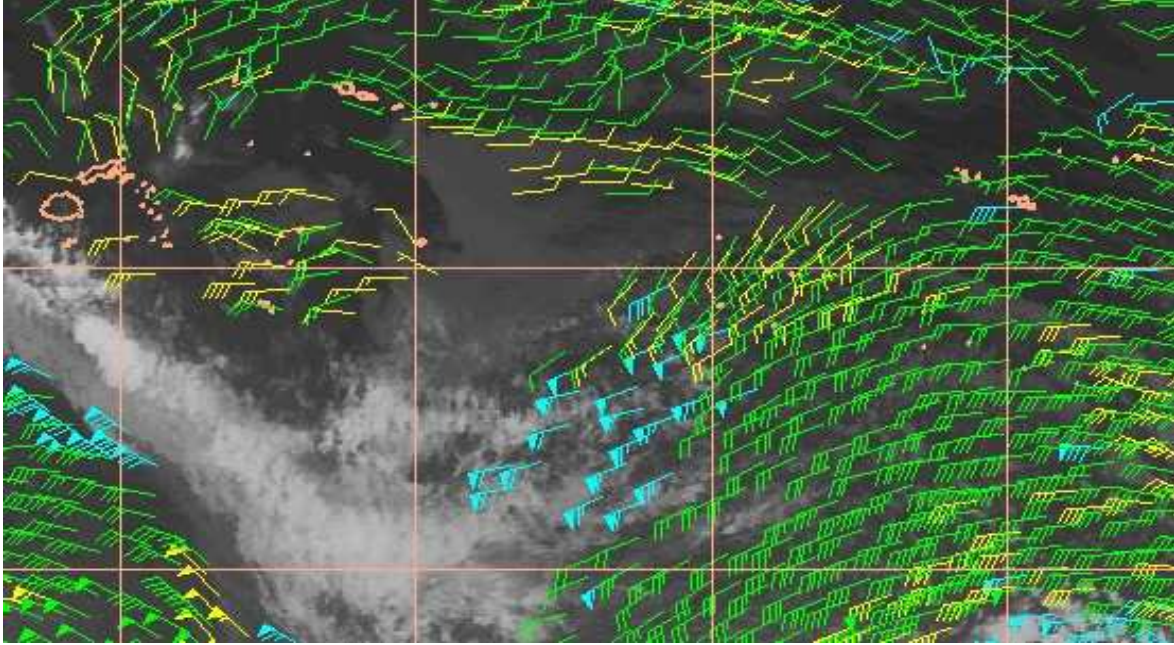


**Somewhere  
between Bora Bora and Tonga  
is**



## **The Dangerous Middle**

**A 'little guide' to help you plan an  
enjoyable trip across this sometimes  
unsettled area**

**By Captain John M. Wolstenholme  
British yacht "Mr John VI"**

**(2008 info.)**

## WELCOME TO THE COOK ISLANDS

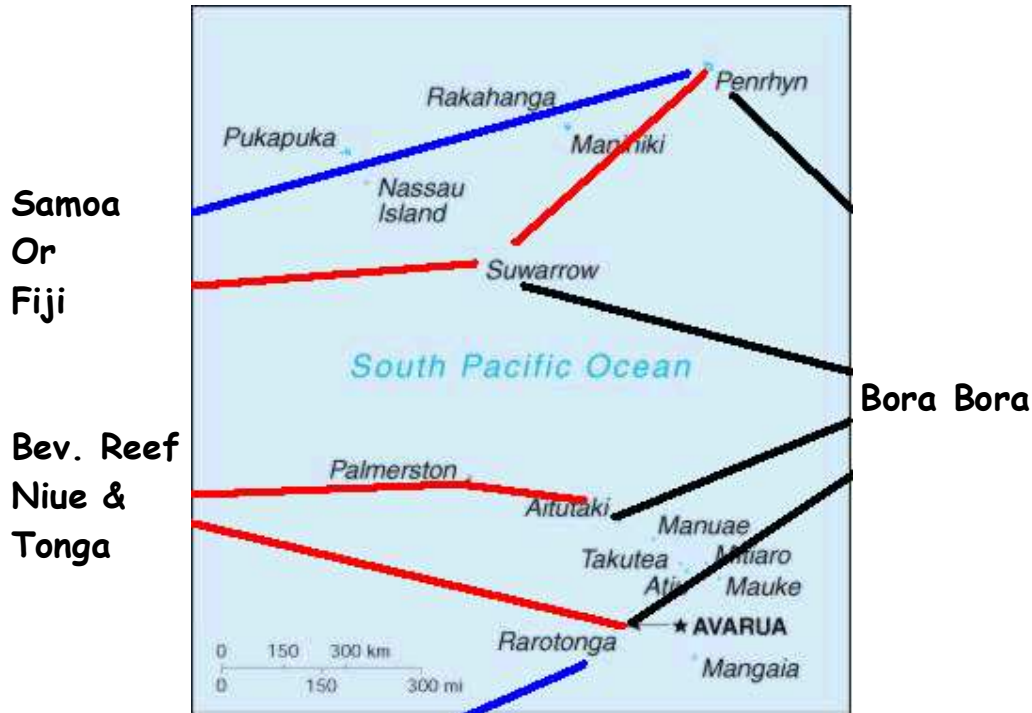
**The Centre Piece** of this middle area, between Polynesia and Tonga is **The Cook Islands** and whilst many people sail directly through, without stopping, there is a growing tendency for cruisers to visit at least one island. The Cook Islands Government have not done an awful lot to encourage yachts to stop off along the way; indeed there is reason to believe that the opposite is true and I'm not the first person to put that in writing!!!

Having said that, the Cook Islanders themselves are some of the friendliest people in the world; they welcome you into their homes and almost rush to assist any visitor that looks like they need help, their flashing smiles and abounding hospitality are things one remembers many years later.

There are many things to see in the Cook Islands and there are some spectacular anchorages; much depends on the weather so 'getting it write' is very important, you have to pick your route and blend it with what ever weather comes along.

This document is intended to give both geographical and weather information so that you may be able to pick a route which suits your boat and your tolerance to often marginal conditions.

The further you go south the worse the weather you are likely to encounter; the South Pacific Convergence Zone runs right through this area creating two very different weather patterns and an unsettled area lying between them. Some of the anchorages (and mooring areas) are quite exposed to both wind and swell should it shift into an unfavourable quarter; it is thus essential to plan this passage carefully and have options available should the weather be uncooperative.



**The Routes** you can take are many and various; below I will cover each of the islands with what information I have from our 2008 crossing. We left Bora Bora and went Rarotonga, Aitutaki, Beverage Reef, Niue and Tonga; Information about other islands I gained from those that went there. On my previous east to west trip , I went directly from Bora Bora to Pago Pago, then having covered the Samoa's and Savii, went south to Tonga; I did however get the pleasure of stopping off in Aitutaki in 89 when making a west to east Pacific Crossing.

Things are different every year, weather changes, governments change, attitudes change, Harbour Masters come and go. All these and many other things can give you a completely different experience to what I report below. If you travel with an open mind and a big smile then I'm sure you'll have a great welcome everywhere. The weather..... well that's another problem; see Section II of this file.

## AITUTAKI

### Approach information and anchoring details.

NOTE: Be sure that you have the correct entrance with the stakes visible down the north side of the channel. *Some electronic charts will guide you to a false entrance.*

There are leading marks and these have blue florescent lamps on them at night. I checked out these marks and I didn't think they marked anything..... They certainly don't lead down the whole length of the channel and they didn't seem to line up on the entrance!

Only locals can use this channel in anything other than daylight!

(WGS84 data)

18 51.241	159 48.484	
18 51.282	159 48.453	
18 51.318	159 48.427	
18 51.390	159 48.368	
18 51.480	159 48.303	
18 51.602	159 48.225	
18 51.662	159 48.177	
18 51.754	159 48.130	
18 51.850	159 48.068	
18 51.878	159 48.048	
18 51.899	159 48.044	
18 51.909	159 48.030	BERTH in inner harbour

Outer anchorage....S.Y. 'Rush' reported finding anchorage outside at :

18 51.275S 159 48.52W (this was the boat position after anchoring)

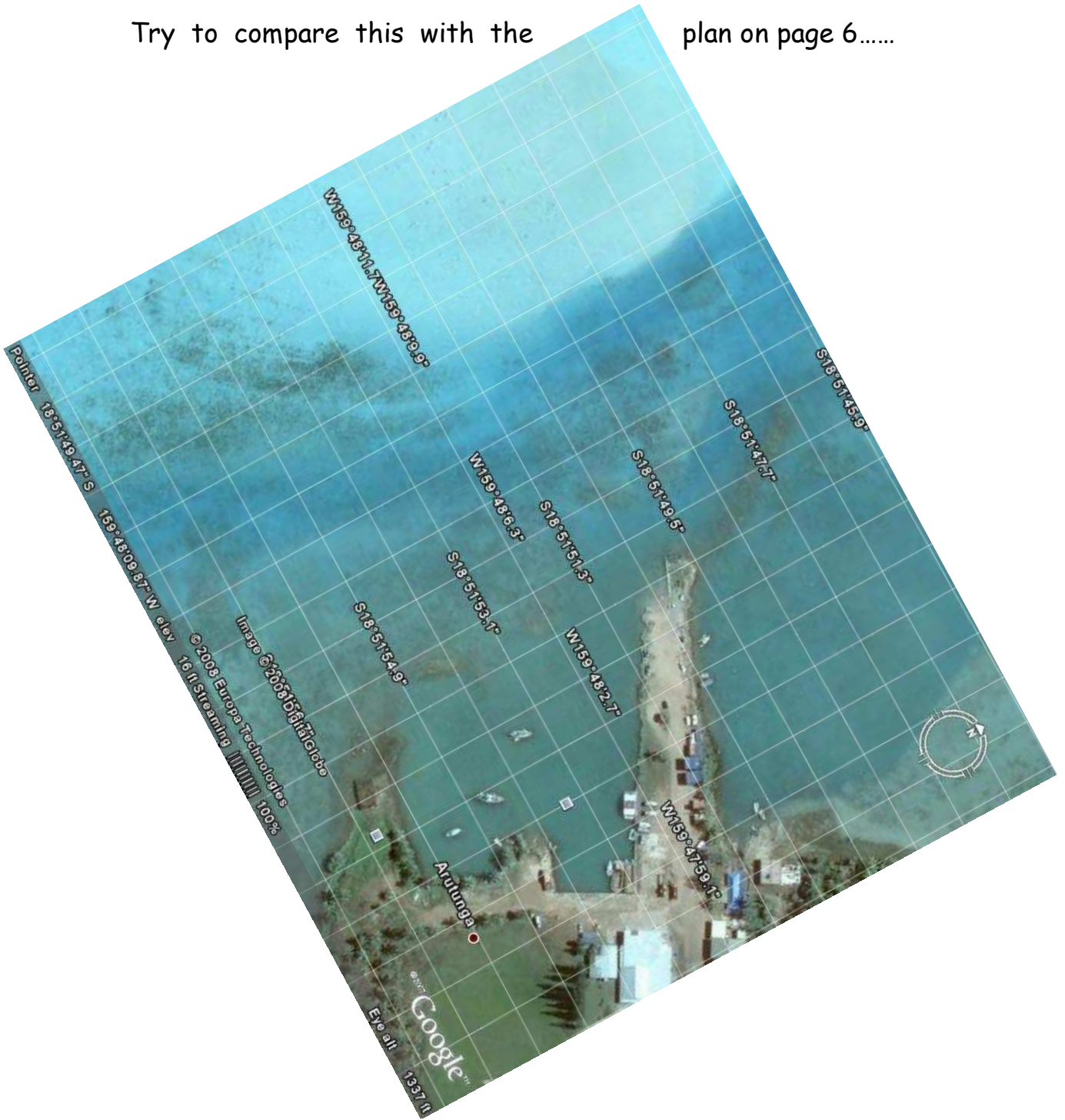
Note: numerous anchors have been lost anchoring outside Aitutaki; in particular to the north of the pass. The area to the south of the pass is said to be better however, if you contact the harbour master for anchoring instructions you will invariably be told to anchor to the north.....

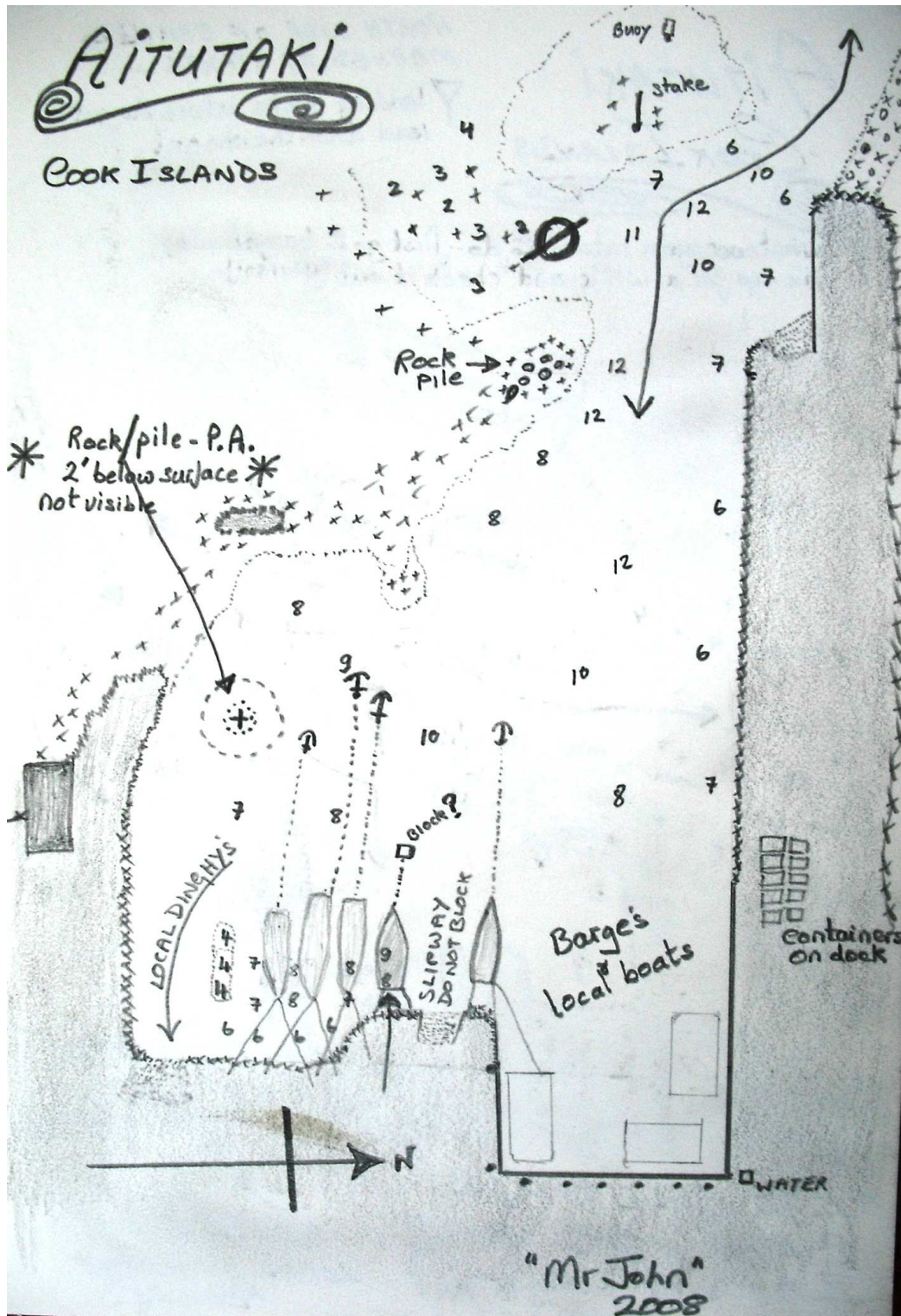
Sept. 2008, 5 boats arrived and anchored outside, at various times during the same night; none seemed to have difficulty however the anchorage is reported to be uncomfortable even at the best of times.

Some years back a large Swan was lost here on the reef when she dragged ashore in a sudden wind shift.



Try to compare this with the plan on page 6.....





I used my hand bearing compass to get this plan straight and paced out the distances to get scale... there are some differences with the Google map but we are almost in agreement



We did Aitutaki with four foot draft; it would be possible with five foot, difficult with six feet and unlikely with seven. A lot depends on what type of boat you have and your willingness to take risk. For sure, if you draw more than six feet, you are going to touch a couple of times..... The harbour fills up quickly if there are a few Cat's in (there was a Francis 50 in whilst we visited and that was almost to wide for the channel).

We were stuck here for two weeks due to a patch of very



nasty weather; with an anchor out and two lines to palm trees it was about the best place to be in the whole of the Cook's at that time. However, three days would normally be enough to see all there is to see and after that it gets a touch boring.

Don't miss going to church on a Sunday.... A unique experience and find out when they are doing the 'farmers market' as otherwise fruit and vegetables are somewhat scarce.

As you can see above, you are well inside the channel before you encounter the shallowest part, by then there is virtually no swell and the current has slackened off. Try and make it an hour or two before High Water, you most likely will not get the tide running in with you, however the 'out pouring' will be at a minimum.

## RAROTONGA



What a beautiful island, what a lousy harbour for the cruising yachts!

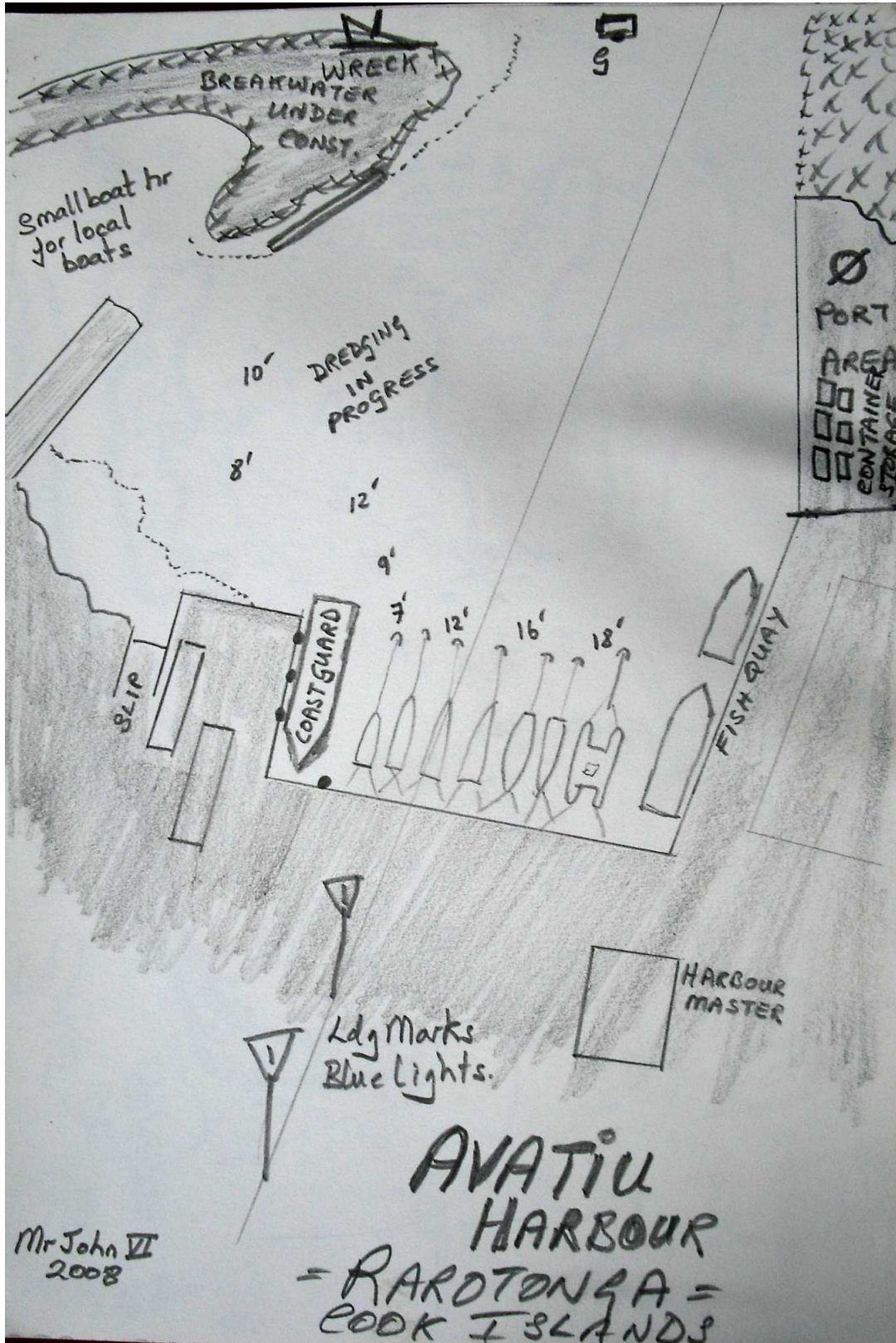
When the swell gets in, the boats pitch heavily as it refracts off the wall.

At best, it's frayed nerves and chaffed lines; at worst its untenable and you have to leave.....



They have built a new basin (in the western part of the harbour) for the local boats and that escapes the swell; the yachts are left with the sea wall.





According to my log book:

Berthing was not a problem, it was a standard 'Med. Moor' arrangement and we always tackle this with a stern anchor; many prefer to go stern to the quay but we have numerous reasons for going Bow in. One of my concerns is that we may drag our anchor, or more likely, someone else may foul it then just drop it again whilst they head out to sea; in either event the boat would make contact with the dock, I would prefer that contact to be with my pulpit rather than my vane gear (or my rudder). Then there is the simple matter of privacy in the cockpit; it is difficult to shower, relax or take a meal in the cockpit when half the local population is standing on the quay watching your every move!

Once alongside, we squared away all the sailing gear and went ashore to clear in to the Cook Islands; it was all very easy and painless however I did think that the \$22 / day (\$2.20 /mtr. /day) was a little expensive for what was available but it was bearable under the circumstances. The visiting yachts lie in the outer basin, which is part of the commercial harbour and is very exposed to any northerly conditions; as we soon discovered, the slightest amount of north in any easterly trade wind, brings the sea 'hooking' around the breakwater and in to the basin where it refracts back off the wall causing all the boats to pitch and jump about madly. This is actually 'not' a fun harbour to be stuck in! There was some dancing available on our first evening but we declined that idea due to us both being tiered from the trip; we did however explore the town and found it quite pleasant. There seemed to be just about all one could require in way or stores and supplies however the prices, which were conspicuously absent from most of the displayed goods, did not induce one to spend much. I guess most things were a little cheaper than French Polynesia however that did not apply to the imported food stuffs, most of which came from New Zealand; fuel was another shocker at \$12 / gal for diesel and my twenty pound Gas Cylinder was \$40 to refill, a far call from the \$12 we were paying in Mexico! The best deals in town were on the Ice Cream and on the Devonshire Tea's that a small 'garden' café was producing close by the Farmers Market; the Farmers Market comes alive on Saturday mornings when all the locals descend on the town to sell what ever they have surplus from their plots of land in the interior, here you can buy good, high quality, fresh produce at reasonable prices. The Saturday morning event is also a big social gathering for everyone on the island, so they set up lots of stands selling hot food and drinks and just about everyone tucks into something; even on a wet and windy Saturday the place was really jumping!

When I was chatting with the Harbour Master in Rarotonga, he expressed a desire to have all the yachts visit Aitutaki rather than clutter up his harbour; it would seem that there was a plan to dredge the Aitutaki channel and basin to make a harbour where the yachts could visit and not be in the way of any commercial operations. In Rarotonga, they have been dredging and extending the harbour so that a larger class of Container Vessel can service the island. They have also built a 'small boat basin' with a protective breakwater off to the west of the main harbour; however, it was made clear to me that this was not intended for the use of visiting yachts, they would remain in the main harbour except when a ship was expected, at which time they would all have to leave (and put to sea) until the ship was turned around and berthed. This would happen three times a month!

Enquiries in Aitutaki revealed that the dredging plan had died through lack of funding although most of the (expensive) equipment required was already lying on the quay, quietly rusting away; it was not expected that further harbour development would take place any time soon (if ever!).

Office of the

## **Harbour Master**

P.O. Box 84, Rarotonga, Cook Islands

Ph: +682 21921

Fax: +682 21 191

Email: [hbrmstr@oyster.net.ck](mailto:hbrmstr@oyster.net.ck)



### **KIA ORANA VISITOR**

Welcome to the port of Avatiu. The following information will be of assistance to you during your stay.

#### **Port Health**

Please leave your "Q" flag up until cleared by Port Health, who will visit you and provide you with pratique. All personnel other than the Captain must remain onboard until pratique is granted.

#### **Agriculture and Quarantine**

A Quarantine Officer will board your vessel as soon as possible. Until then, all food items, plants and animals/pets must remain on board. All tropical fruit from French Polynesia must be destroyed.

#### **Customs and Immigration**

These formalities can be completed at the Harbour Master's office.

#### **Facilities**

There are toilets and showers below the Ports Authority office. A key from the Ports Office will cost **NZD 30.00** for use during your stay, of which NZD 20.00 is a refundable deposit.

#### **Charges:**

Port dues are based on the following.

<b>Monohull</b>	NZD 2.20 per metre per day
<b>Multi-hull</b>	NZD 3.00 per metre per day.
<b>Motor Yacht</b>	NZD 2.50 per metre per day or NZD 0.60 per GT per day (whichever is greater)
<b>Departure Tax</b>	NZD 30.00 per person. (NZD15.00 for children under 12)

#### **Outward Clearance**

On paying your port dues and Departure Tax at the Ports Authority office you will be given your Clearance for your next Port.

The above procedures also apply if you are planning to call at another island in the Cook Islands prior to leaving for overseas.

Payment is Cash only, credit cards not accepted. The Office Hours are 0800 to 1600 Monday to Friday and no clearance will be given outside these hours

*CASH ONLY*

**WE TRUST YOU ENJOY YOUR STAY AT RAROTONGA!**



## **PALMERSTON :**

2008 (Sept 16<sup>th</sup>) Eight moorings in operation

Early Sept. there were seven but S.Y.Flame broke adrift from one in heavy winds... He managed to find an anchorage and was able to remain in the lee of the Island. This was a substantial blow, during which the boats in the lee of the island were quite safe (apart from the aforesaid incident), it was not too uncomfortable but they were more or less 'boat bound' Two new moorings were laid on the 16<sup>th</sup> bringing the total to eight however the broken one may well be recovered to make nine in the near future.

There seems to be room for at least two yachts to anchor as well as those on the moorings.

One of the moorings is reported to be in the following position:  
18 02.753S 163 11.511W (WGS84)

It is possible to get onto a mooring at night, especially with a little help from other yachts already there; anchoring would be a little more difficult.

It goes without saying that any wind from the west will require you to vacate in a hurry! It can become uncomfortable for mono-hull boats as soon as any swell gets around the north or south ends of the island and it will do this earlier in calm conditions than in normal trade winds. Several mono-hulls have cut short their visits for this reason.

The moorings are owned ....

Six are now owned by the two brothers who run the 'Check in / out'; these brothers monitor the VHF Ch.16 and answer to 'Alpha Sierra' (Simon) and 'Alpha Echo' (Edward). You should call them on arrival and they will come out to help you onto the mooring. If they know you are coming in at night they may also come out and guide you in; they may also assist you to an anchorage if no mooring available.

It seems that Bob McMaster's owns the other two moorings (condition not confirmed but one boat left after inspecting the pick up end of one of these???). There is a bit of family feuding that takes place over the allocation of yachts to the moorings; basically you are adopted by whoever owns the mooring or by a family appointed by that person and they get the rights to trade with you for things that they require. You will be "well looked after" but this is a two way street and you are more or less expected to reciprocate..... Things like 'lengths of chain' from your bilge and a used but good 'set of flippers' can easily be given if you have surplus..... It's amazing what we have that we don't need and these guys do.....

This is a two way street, beneficial to all who participate. It would however, be a shame to miss speaking with people like Bob, as his family still holds the original documentation from when the Island was ceded from the Crown to the McMaster's family Etc. Etc. One has to tread very lightly on sensitivities when going outside of the group into which you are introduced.....

There are no charges for the moorings

Normally the locals come and pick up cruisers when they wish to go ashore. Shore leave is somewhat 'regulated' in this manner.

Clearance takes place on board fee's are

NZ\$30 per passport

NZ\$25 for the boat clearance in/out

NZ\$10 for administration

A single hander paid U.S.\$50 total and roughly tallies with the NZ\$65 that should be levied.(2008 rate).

In theory most of these costs are waived if you are already cleared into the Cook's... There may still be some administration fee and the officials may well still visit the boat.

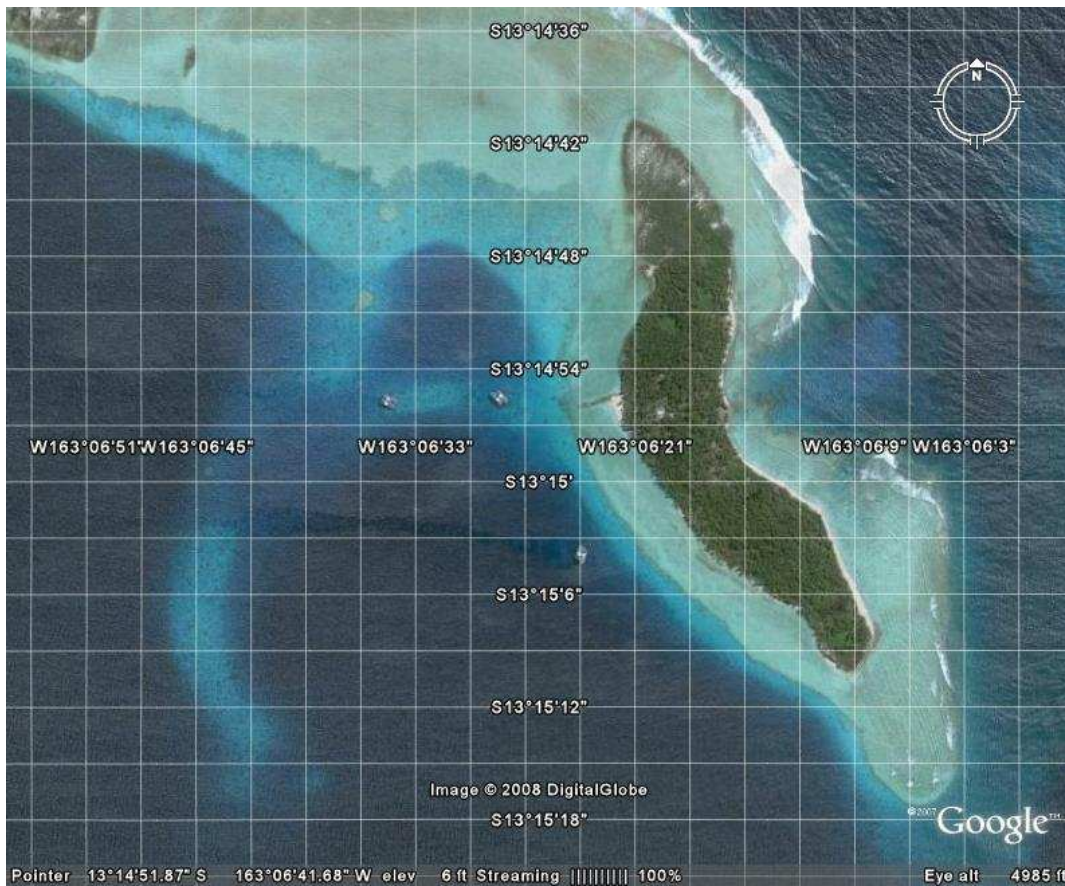


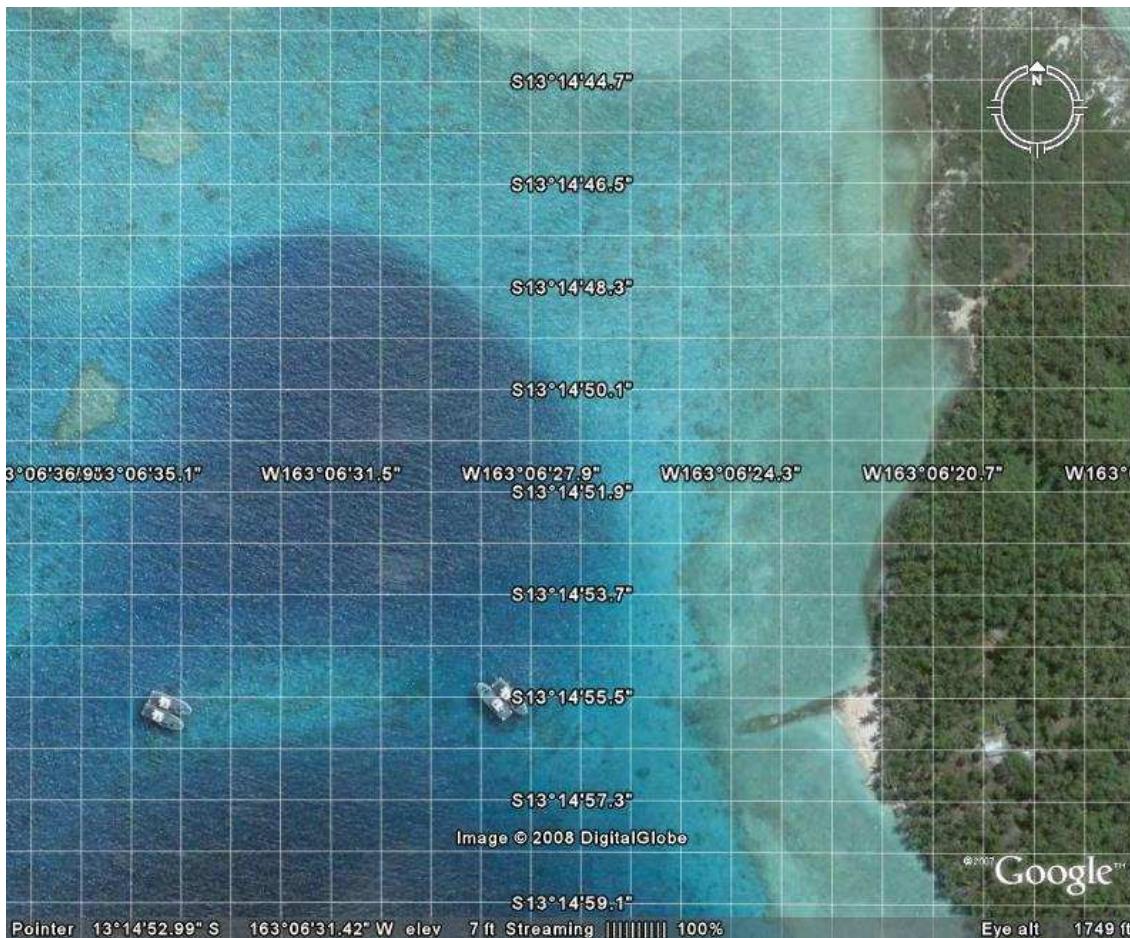
**NOTE..**I did get a report of a cat with 3.5ft draft that went through the small boat passage and anchored inside the reef.



**Suwarrow (Suverov)** is also quite welcoming, however it is a Park and the welcome can depend on the attitude of the Park Ranger; of late they have been a superb bunch and yachts have been reporting great times. Here again the Cook Islands Government has not participated in improving the situation, at times they have left their Park Rangers, without adequate provisions, well passed their relief dates. It is no wonder therefore that the Rangers have encouraged the yachts who have been providing Pot Luck Supper's on the beach where the Ranger brings the fish and the yachties supply the rest... again a situation beneficial to all.

The anchorage at Anchorage Island with a few Tuna Boats at anchor....





With shallow draft it is possible to tuck right up into the NE part of the harbour so that the wind has to be almost south to cause a problem.....

Everyone who went to Suwarrow had a great time however there were a few comments about the amount of sharks, even in the anchorage.....

(Note: Sharks are the sign of a reef that is alive.... No sharks means poor coral and few fish).

Take some extras for the Ranger if going this way.... He also accepts Gasoline gratefully as he soon uses his quota running visiting yachties around the lagoon!

## PENRHYN ISLAND

In general, this is way out in left field.... I only heard of one boat that went that way and at the time he went there it was a smart move. A whole group of boats left Bora Bora almost together having been conned by those little circles on the Grib files (see more on this in the weather section). The SPCZ went active and sat on a line which curved up from BB through Suvarrow to Samoa. The boats which went south to Rarotonga got lots of wind and a very rough ride on the south side of the front; the guy that went north to Penrhyn had much lighter winds but from well forward of the beam. The guys going to Suvarrow got heavily hammered and some badly damaged.

The main anchorage off the town is open to the trade winds and can become quite lumpy; it's a long haul across the lagoon to where you can get shelter. The people are more welcoming because they don't see too many yachts; it is still off the beaten track for most although it is used on the Hawaii run for boats headed both north and south.

Supplies can be a problem as it is at the end of the supply chain.

Although there can be a strong out-flow of water from the lagoon, particularly if the trades are blowing and the tide is falling, the average yacht should have no problems; the channel is well marked, dredged and quite wide. It was used for shipping during the war.

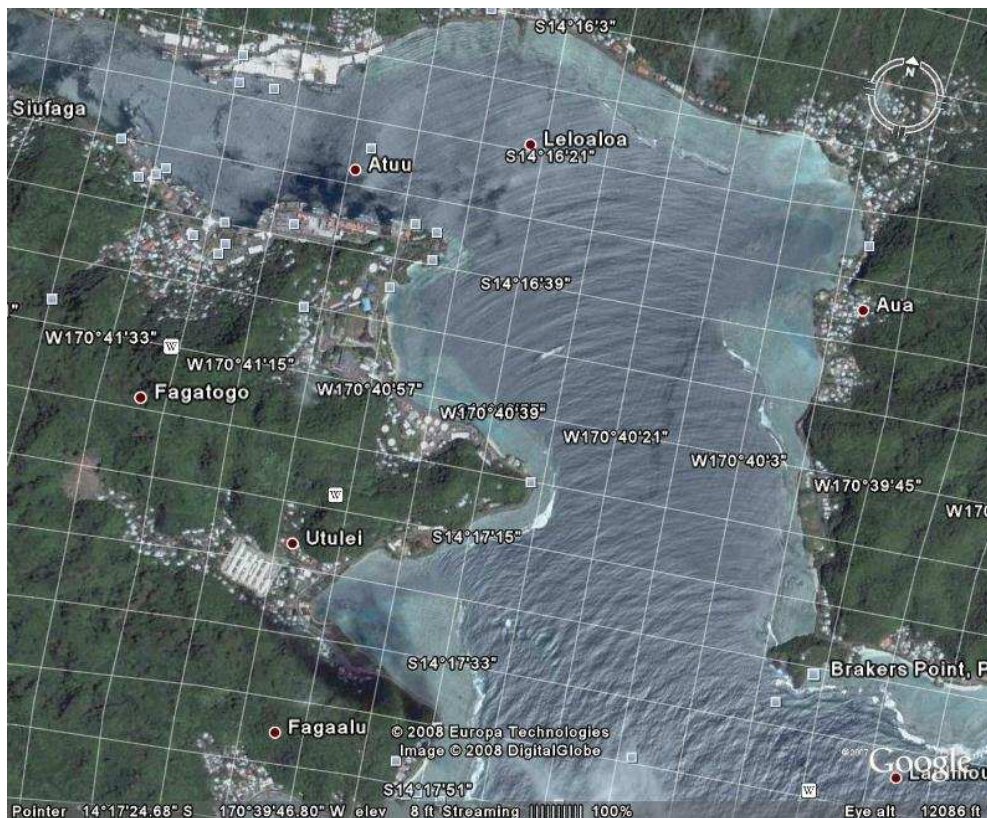


## Pago Pago.... American Samoa

Not the greatest place in the Pacific; smelly, dirty and with few facilities. Having said that, there is a Marina of sorts however it is not well protected and 'things go missing' even quicker than they do from the yachts at anchor..... not really a place to leave the boat unattended at night.

There are some good supermarkets and the prices are quite reasonable (cheap after French Polynesia!). It is also on the U.S. Domestic Mail service which makes getting things sent in from the U.S. and Hawaii both quick and easy.

The anchorage can be a hot hellhole when there is no wind but as soon as the trades kick in the island acts like a funnel and the wind seems to shriek through the anchorage.



*Note the swell working its way into the harbour*

You really have to make sure your anchor is well set as there are many old bags and sacks etc on the bottom of the harbour and these are easy to pick up.

Clearance is strait forward, call up the harbour radio on the way in and they will direct you to dock alongside. US\$25 for clearing in and US\$25 for clearing out is payable by visiting yachts as well as monthly harbour fees of approximately US\$12 to US\$15. These must be paid before departure as otherwise customs will not issue an outward clearance. There are Overtime charges and these can be heavy so best to arrive on a week day at a decent hour.



*To get away from the swell, move well down the harbour past the 'Marina' and 'Customs Dock' (on your port side going in).*



## APIA ...Western Samoa

On my first Pacific Crossing I never really thought I'd found the True Pacific until I reached Apia; It had everything that I had been expecting but not found in French Polynesia.

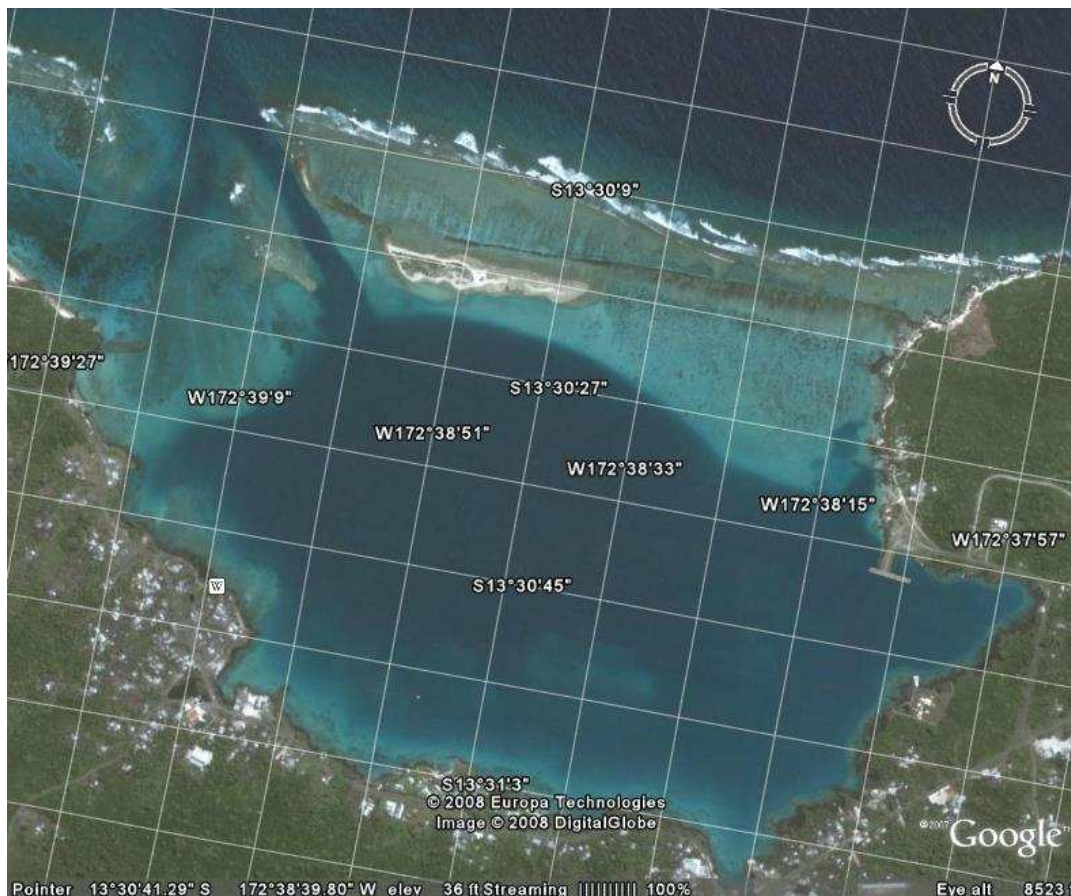
It had the 'right feel' and is steeped in history, the island is magnificent and I can certainly recommend you hire a car and go exploring. In those days we had to anchor out in the bay but in the last year or so they have opened a new Marina which lies in the North Eastern corner of the harbour and only a short walk from town. This year's reports from the Marina were all favourable; the price is good and the service excellent.



*APIA harbour but not showing the new marina in the NE corner*



Western Samoa could keep you hooked for some time but don't forget the sister island of Savaii which has an excellent

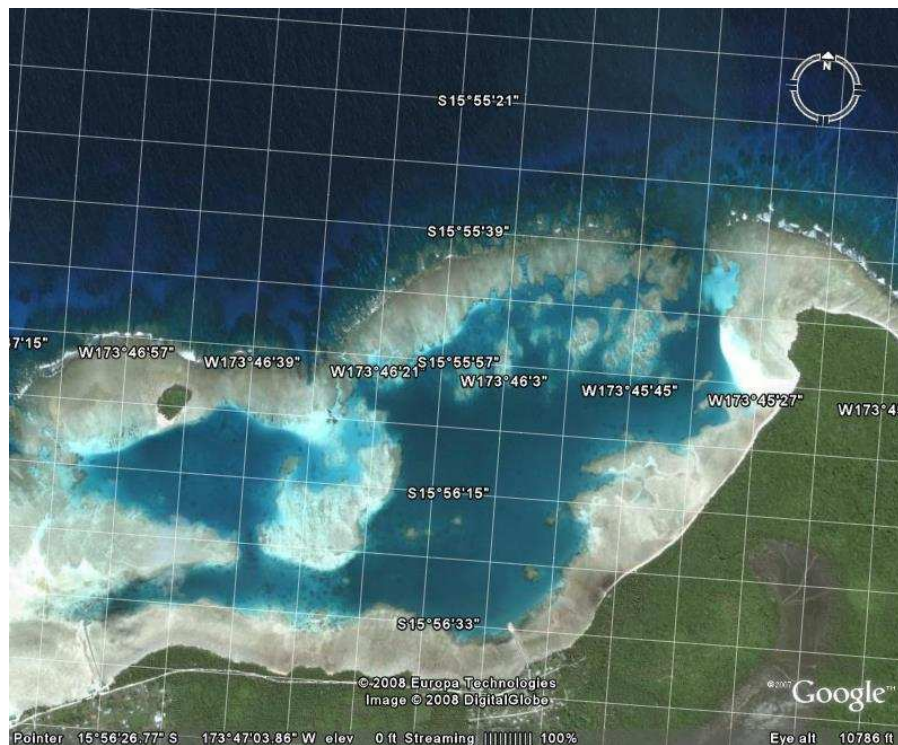


harbour at Asau and is another great place to explore. See if you can find "Return to Paradise Beach" where the old movie was shot (or at least some of it, so I'm told..... It was whatever, a beautiful spot).

When I was here with "Mr John IV" the engine was out of order but we sailed down from Apia (had to get a permit in those days) and did one tack through the cut to anchor off the small town. It was a good crash back to Apia against the Trade Winds but well worth it!!

## NEW POTATOES (or at least that's what we call it!) NIUATOPUTAPU

This is a 'must stop' on the way south from Samoa to Tonga, my understanding is that that you can 'Clear In' to Tonga here now, however you may still have to go shovel papers when you reach Vava'u.



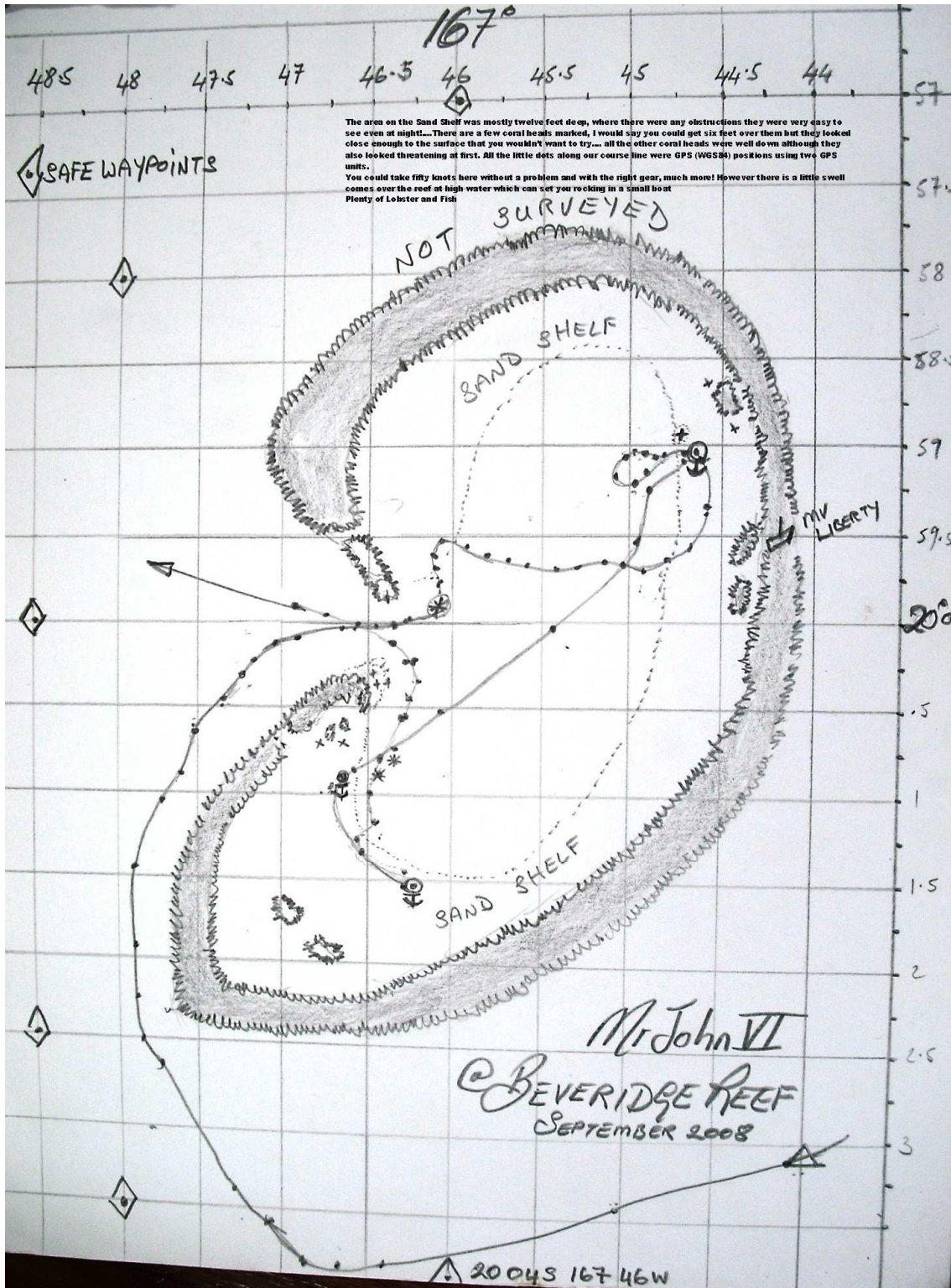




The approach is strait forward and well marked, however you should take great care as several boats have been lost here in the last couple of years. This may indicate that the Charting and the GPS are somewhat separated from reality.... I have in the passed, found Google Earth to be quite accurate and it may be a good idea to spend a little time studying this if you intend going. The usual rules apply; stay well off until you can see where you are and where you're going. An arrival around midday would be best.



# BEVERIDGE REEF



The dots along the tracks taken are positions from 2 GPS units set on WGS 84

**If** you are passing this way and the weather is right, this is one of those 'out of this world' experiences which should not be missed. This is a 'live' reef as nature intended it to be, lots of fish, some lovely coral and a great anchorage. The shelf that runs around the interior has about twelve feet of water over glorious white sand. There are very few coral patches around the rim of this shelf and they stand out clearly (even at night!). The central part of the lagoon has quite a few coral heads, some look close to the surface but in fact most are well down and boats with six feet draft can move around quite freely. We went around anything that looked threatening (on principle) but I think you'd really have to try hard to hit anything!

The rim looks shallow and we noted a few boats that were reluctant to move onto it.... I guess some people are uncomfortable with less than twenty feet below the keel.

Once on the shelf you can be fairly secure even in a strong blow (50 knots or so); although you may have to move around a bit as the wind shifts. Unfortunately, secure and comfortable do not always go hand in hand. At high water the swell does get across the reef and can cause some pitching (also some rolling if you anchor near to the entrance where there is tidal effect). Bigger boats with Bigger tenders will do better here than those of us with small ones; we are 35.5 and certainly we felt the motion..... Once the weather went downhill on us (wind over twenty knots), it was no longer worth staying and we moved off to gain shelter behind Niue.

The fishing boat shown on the older maps had gone and there is a new one as shown on my plan. Also note that I went in round the southern end and therefore cannot confirm the extent of the reef to the north.



*The rim of white sand is plenty wide to move right on to, the deeper blue of the central lagoon can be seen in the background. Note that even on this calm day we were all rolling except the Cat's.*



## NIUE

Mooring No. 11 @ Position: 19 03.201S 169 55.456W

This mooring field is wide open from the west and a night time arrival should be possible. However, when rounding the island from the south or the north, a safe distance off must be maintained as there are several unlighted points; several yachts have been lost on the coast of Niue whilst making night time approaches!

On arrival we called Niue Radio on Ch.16 VHF.. shifted to 14, gave boat details and were instructed to call "Yacht Club" on entering the bay. Also we were instructed to call Niue Radio as soon as we had the dinghy down and were ready to go ashore. They would then arrange for customs to meet us (which they did at the dock).

We called "Yacht Club" on entering (Ch.16 VHF shifting to 10) and were directed to a mooring.

No charges on arrival

20\$ NZ deposit for key to toilet block with showers at Y.C.

On departure, settle up for the moorings at the Y.C. which are \$10 NZ / night.

Proceed first to Immigration and get stamped out. \$30 NZ per passport (departure tax), then proceed to Customs for clearance.

Bonded Stores are available from the Customs, they control all liquor sold on the island (we found Tonga a little cheaper....).

There are a couple of small supermarkets and a reasonable though limited selection is available.

Wi-Fi is available in the anchorage at \$25 NZ single payment for unlimited use. If you are here for a while this is probably the best way to go

Internet ashore was INCREDABLY SLOW and painful.... We achieved nothing in the half hour we were on. Couldn't even get into any of the usual weather nets and downloading a Grib would have taken an hour or so! (At \$9 NZ/hr).

It was blowing fresh from the SE/ E during our visit and there was only a gentle roll on the moorings but before we arrived it had been quite lively as the wind was in the north for a few days.

We had great Fish & Chips ashore (\$12 NZ for two people).... There were Whales with Calves coming into the moorings and doing 'heavy breathing' close by the yachts at night..... The diving is said to be 'phenomenal'  
Hire Cars were \$45 / day (\$10 local driving licence required)

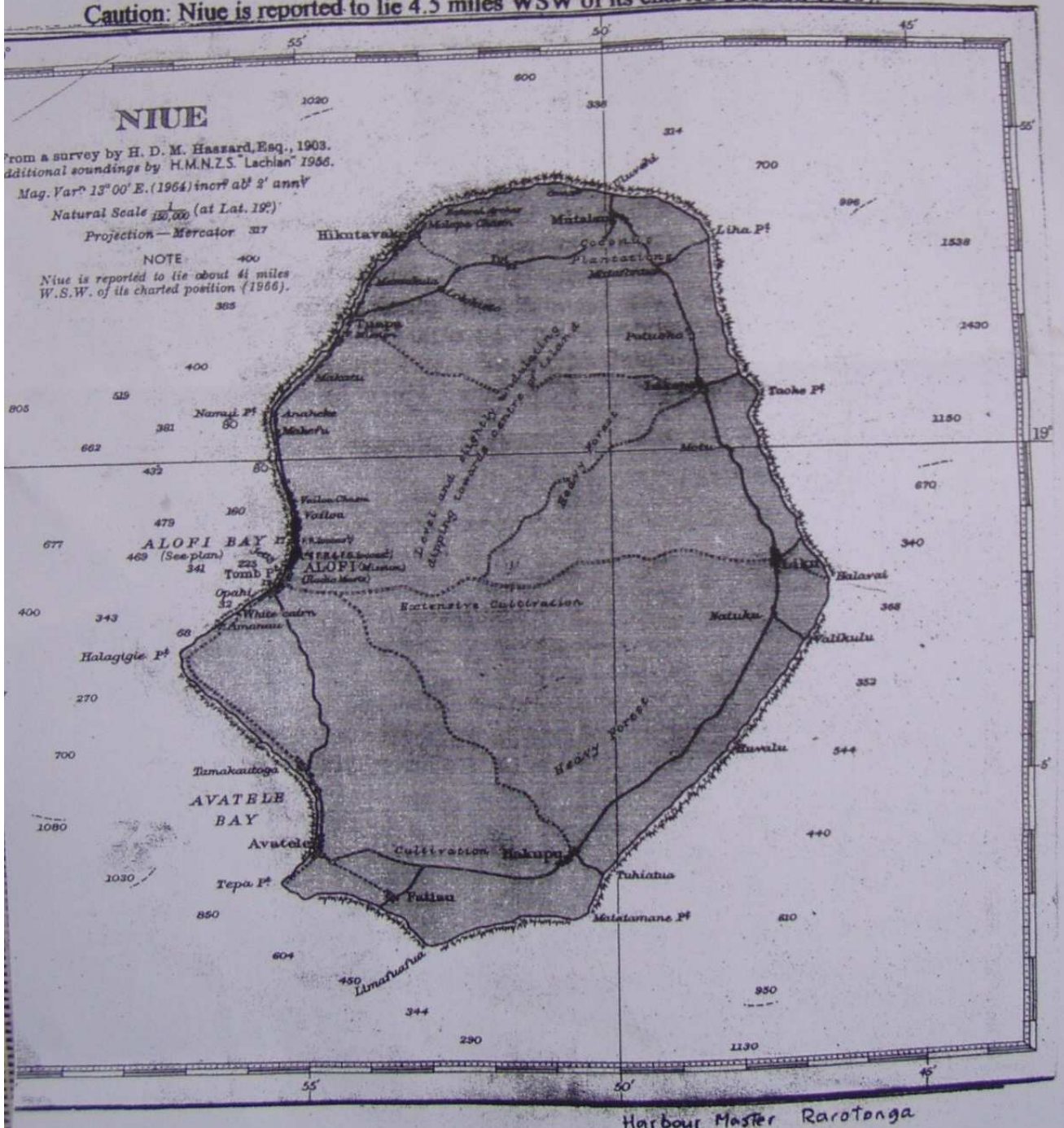
Niue lies within the South Pacific Convergence Zone and can be 'socked in' for days at a time, showers and heavy rain squalls are not uncommon. Needless to say, its better when the sun shines! We took a hire car around the island and found plenty worth seeing; they have some very nice caves and grottos. Niue comes under New Zealand and in much the same way as it is down there, they have built nice pathways and boardwalks for tourists to get to where the best sights are; we were very impressed!

Whatever, the people are most friendly and helpful.....

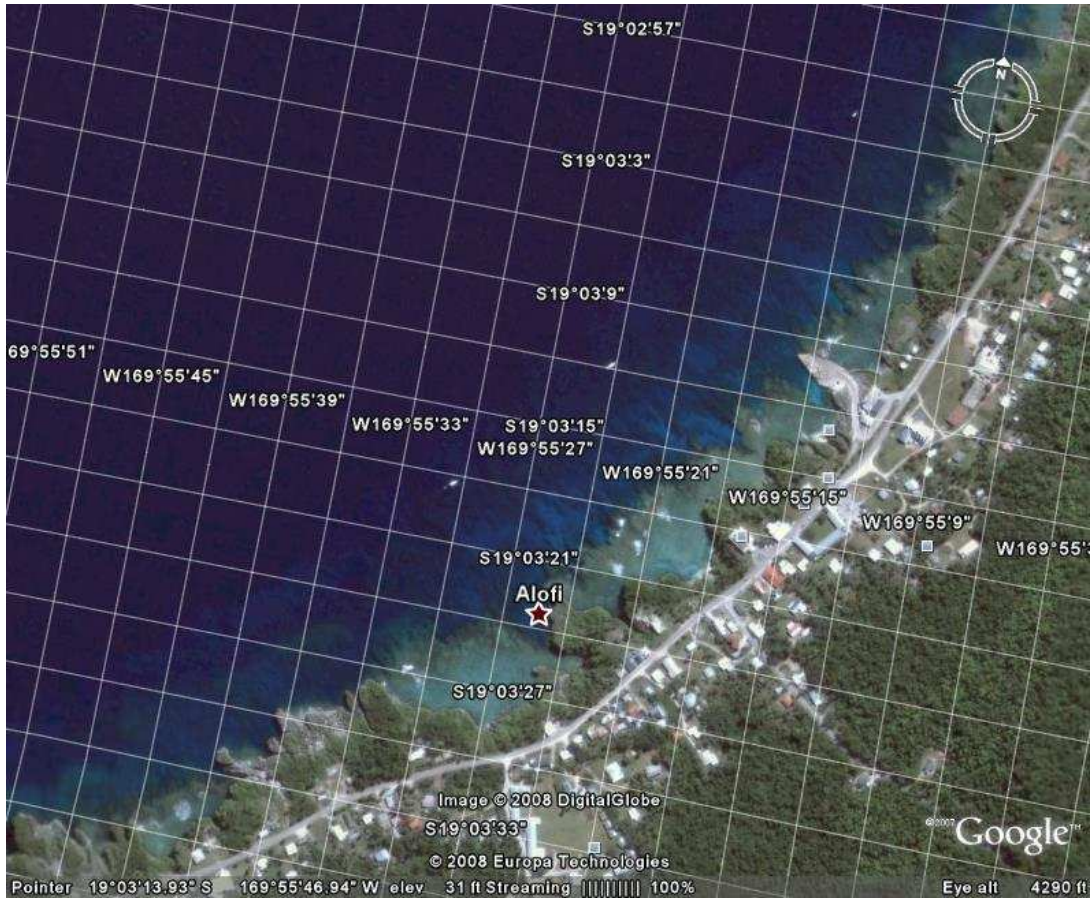
**W**e actually left Niue because we could see the SPCZ moving up to cross the island and there were several concentrated thunder storms moving along the front. We got a partial hit from one of these cells with winds over forty knots from the northwest for almost an hour. Niue was spared, however it would not be a good place to get caught should one of these things make a landfall there.....

**NOTES ON NIUE**

In June 1999 there were 16 yacht moorings at Niue, with plans for more. Call the Niue Yacht Club on VHF Ch 16. If no answer, call Niue Radio. Wally Saunders is the Commodore. (Mary is the Treasurer). They will tell you which mooring to go to – some are only for smaller yachts, and some could be damaged. Only one yacht per mooring. If you need to anchor, the area is to the North of the wharf. There is no anchorage to the south of the wharf. Please put your line through the plastic eye spliced in the end of the mooring line, then pay out 3-4 metres. Do not tie or bring the mooring line on to your vessel. Do not use a stern line to other moorings.  
**Caution:** Niue is reported to lie 4.5 miles WSW of its charted position (1966).











**T**he dock at Niue is easy to work; you need to use the bridal that you use for heaving your dinghy aboard. The crane hook is always left hanging ready for the next boat coming ashore. Simply hook on, step ashore and use the electric hoist to bring your dinghy onto the dock; there is a trolley to move the dinghies around.

Like most of the islands you anchor or moor behind, if the wind shifts, you may have to move. Anything over thirty knots and the yacht club may ask you to leave anyway.

Unfortunately, as the South Pacific Convergence Zone moves around (and it does), the winds in this area can frequently shift to come from almost anywhere. You have to have a weather eye at all times.

**With that, I'll move on to the weather section.....**

**SECTION**

**II**

**THE**

**WEATHER**



**Welcome** to French Polynesia; to get this far you have already crossed at least two thousand miles of ocean and made (probably) the longest single passage of your voyage. From here on in, it's relatively short hops, until you reach the Indian Ocean and the most challenging thing on your horizon is probably the leg to New Zealand (if you are going that way).

Spare a thought however, for the route you choose between French Polynesia and Tonga; this is not just 'milk run', there are many Islands to see and several ways of getting across. Above all else, you have to consider the weather more on this leg than you have had to up to this time. This may well look like the Trade Wind Belt at first glance but it's not! Here we enter an area of disturbed and unsettled weather; it's nothing new, it's the *SOUTH PACIFIC CONVERGENCY ZONE*.

I'm going to borrow this explanation of the SPCZ from Bob McDavitt, a well respected meteorological expert in this area, (if you want to really know what's going on here, you should read his books on the subject).

**3. The SOUTH PACIFIC CONVERGENCE ZONE (SPCZ)** (also called the Trade Wind Front in French Polynesia) is where the equatorial easterly winds converge with (bump into) the south-east trade winds. It is a zone where clouds form, some containing occasional heavy and squally downpours (winds shifting in the immediate area and gusts reaching 30 to 40 knots in the squalls). Each cloud mass generally moves off to the south-east and dissipates as another cloud mass reforms near the source area. North of the zone, winds are often light and from the north-east, but within about 120 miles south of the zone, winds are usually from the south-east at 20 to 30 knots.

Bob goes on to say that this is not a very active area from May to October (dry season) but really gets going from November to April (wet season) when it is the spawning ground for South Pacific Hurricanes.

True, on my first time through, twenty years ago, I didn't have much of a problem with the SPCZ, in Sept/Oct of 2008 however; the SPCZ seemed to be working overtime. Several yachts sustained damage, sails were blown out, big boats pinned on their sides and ego's dented. One ketch managed to damage jib, main and mizzen!

Having said that, this is an area of squalls, often associated with thunder storms and most cruising yachts, sailed with attention to good seamanship practices, should be able to handle these conditions without incident. By being aware of what is happening here and being prepared you will be one step ahead of the game.

There are a few rules that will assist you here.....

RULE 1)

Reef down at night

Reef down if you see lightning (ESPECIALY if it's to the NW of you)

Reef down if you hear thunder

Reef down fast if you get seabirds flying into the lee of your sails

Reef down if the sky looks 'different' or threatening

Reef down if you can make almost the same speed with less sail

Reef down if Bob issues a squall watch alert in his weekly newsletter

Reef down well in advance

Reef down to a sail area that will withstand fifty knots for a sustained period

Reef down so that the boat would be comfortable in sustained fifty knots

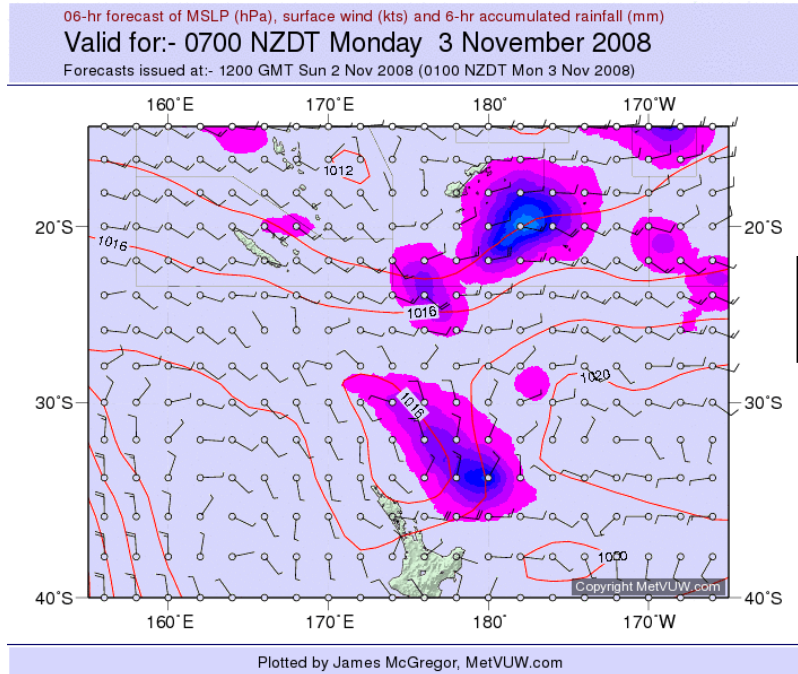
You can see here that reefing down is high on the priority list.....

The other day I heard two cruising yachts (on passage) chatting on the HF, discussing how they would get their third reef in, if required.

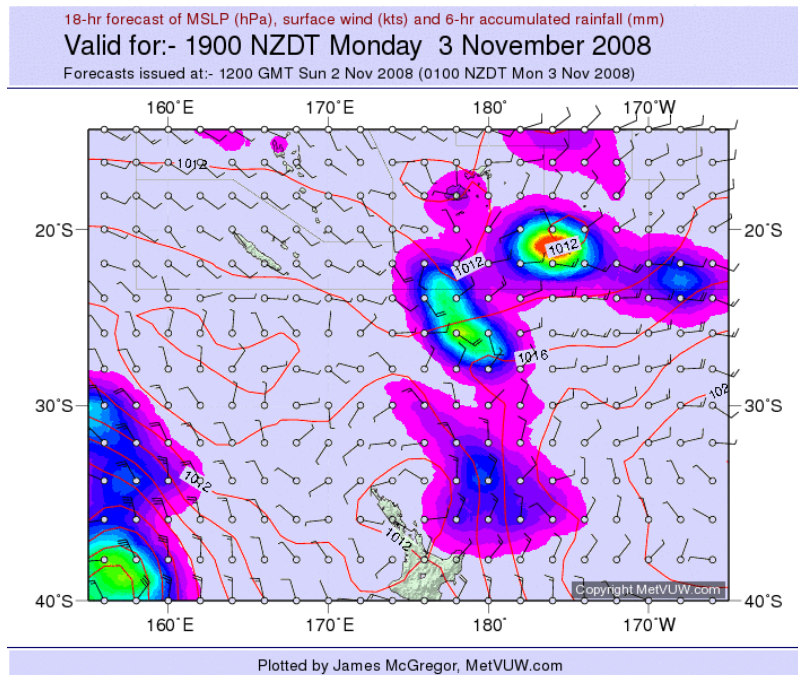
***If you can't get your sails reefed right down and do it in less than three minutes, you are certainly going to have a problem here (and if not here, somewhere down the line!).***

RULES 2 to 30 are basically the same as Rule 1

The very best tool to appreciate how these thunderstorms move is "MetVUW" . [www.metvuw.com](http://www.metvuw.com) and it covers this area quite well. We will now look at a sequence from Metvuw.



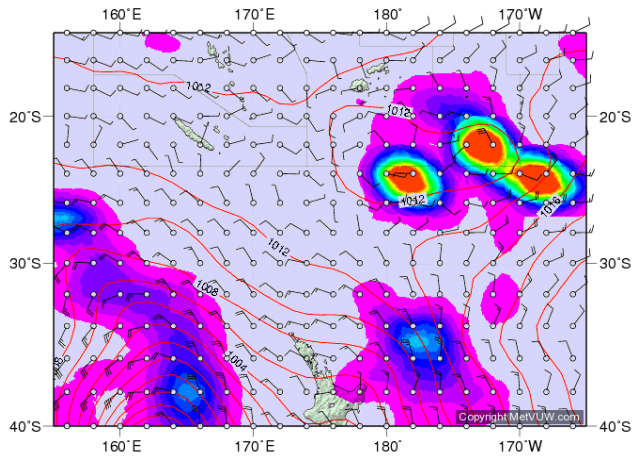
View 1



View 2



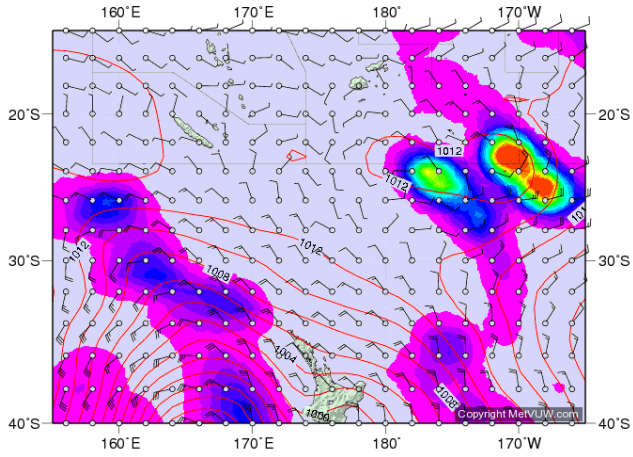
30-hr forecast of MSLP (hPa), surface wind (kts) and 6-hr accumulated rainfall (mm)  
Valid for:- 0700 NZDT Tuesday 4 November 2008  
Forecasts issued at:- 1200 GMT Sun 2 Nov 2008 (0100 NZDT Mon 3 Nov 2008)



View 3

Plotted by James McGregor, MetVUW.com

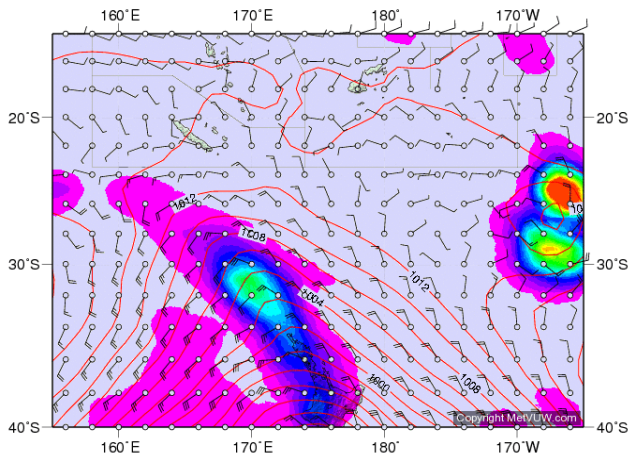
36-hr forecast of MSLP (hPa), surface wind (kts) and 6-hr accumulated rainfall (mm)  
Valid for:- 1300 NZDT Tuesday 4 November 2008  
Forecasts issued at:- 1200 GMT Sun 2 Nov 2008 (0100 NZDT Mon 3 Nov 2008)



View 4

Plotted by James McGregor, MetVUW.com

48-hr forecast of MSLP (hPa), surface wind (kts) and 6-hr accumulated rainfall (mm)  
Valid for:- 0100 NZDT Wednesday 5 November 2008  
Forecasts issued at:- 1200 GMT Sun 2 Nov 2008 (0100 NZDT Mon 3 Nov 2008)



View 5

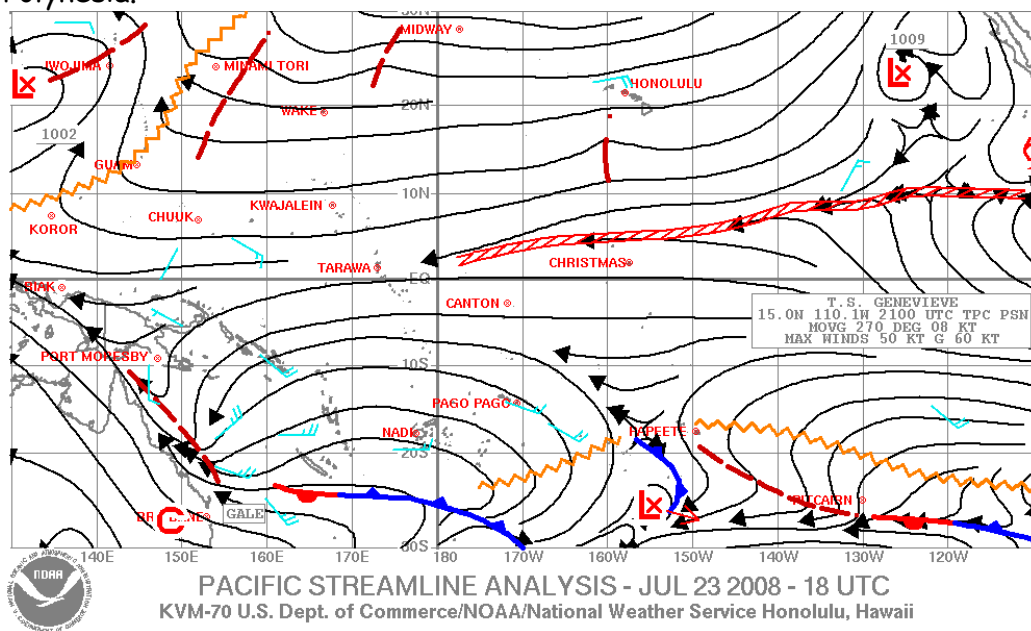
Plotted by James McGregor, MetVUW.com

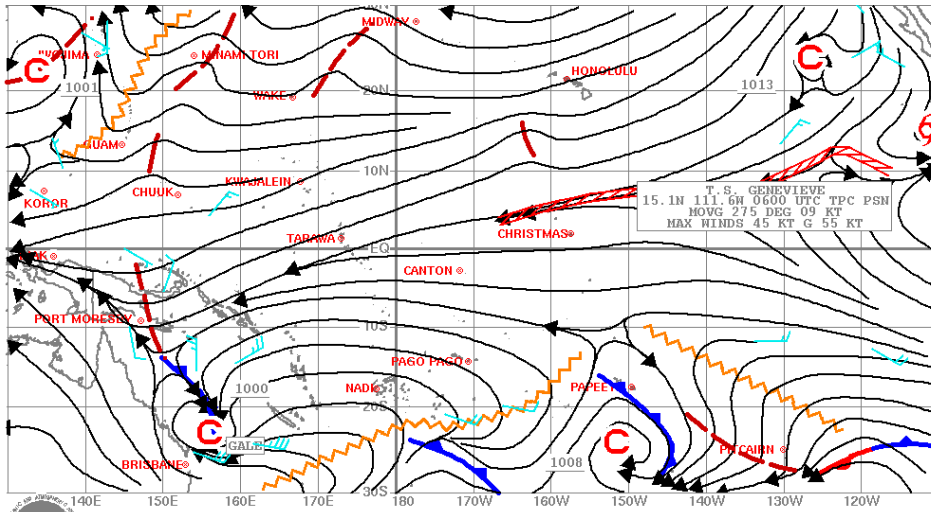
Clearly, you can see a progression in the above views, the colours actually indicate rainfall not the severity of the wind; however in most of the cases we are looking at here, the rainfall is due to thunderstorm activity and with vast amounts of rain falling in a concentrated area a vast amount of heat is being transferred and air starts rushing around as part of the cooling system for this "great big heat engine". You can be sure that when you see a red blob on the Metvuw map, there is at least thirty knots, somewhere around the wall. You will note that the direction of travel is from NW to SE and at the speed they travel there is little chance for the average sailing boat to get out of the way.

In this particular sequence, the main part moves over Tonga and the secondary part sweeps across Minerva Reef, 5<sup>th</sup> of November is about the time that boats are gathering in Tongatapu or already on their way to Minerva. Thirty knots plus, out of the west, is no fun in the Nuku'alofa anchorage..... that I know from experience!

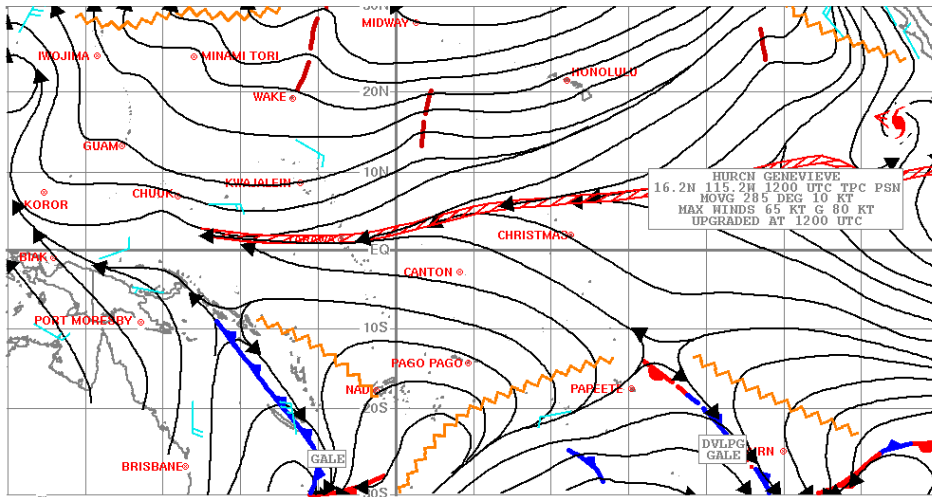
**Another** great tool to look at the weather in this region is the Pacific Streamline Analysis, you can access this through NOAA by internet or by Fax (Sent from Hawaii); you can also order it via your Sailmail or Winlink accounts. STREAMLINES ARE LINES OF CONSTANT WIND DIRECTION. WIND SPEEDS ARE GIVEN BY WIND BARBS INDEPENDENT OF STREAMLINES.

Just watch the progression as a small Low comes off the Queensland coast and sets up a frontal system that carries right across into Polynesia.

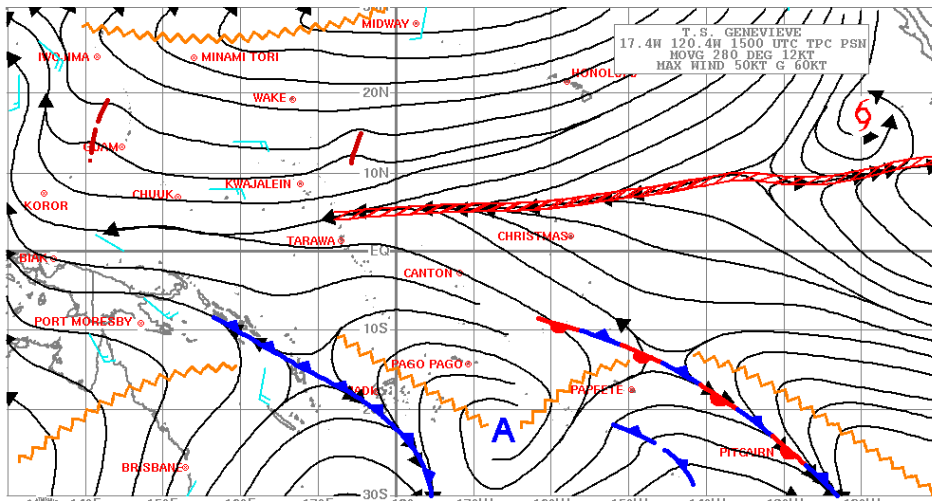




PACIFIC STREAMLINE ANALYSIS - JUL 24 2008 - 06 UTC  
KVM-70 U.S. Dept. of Commerce/NOAA/National Weather Service Honolulu, Hawaii



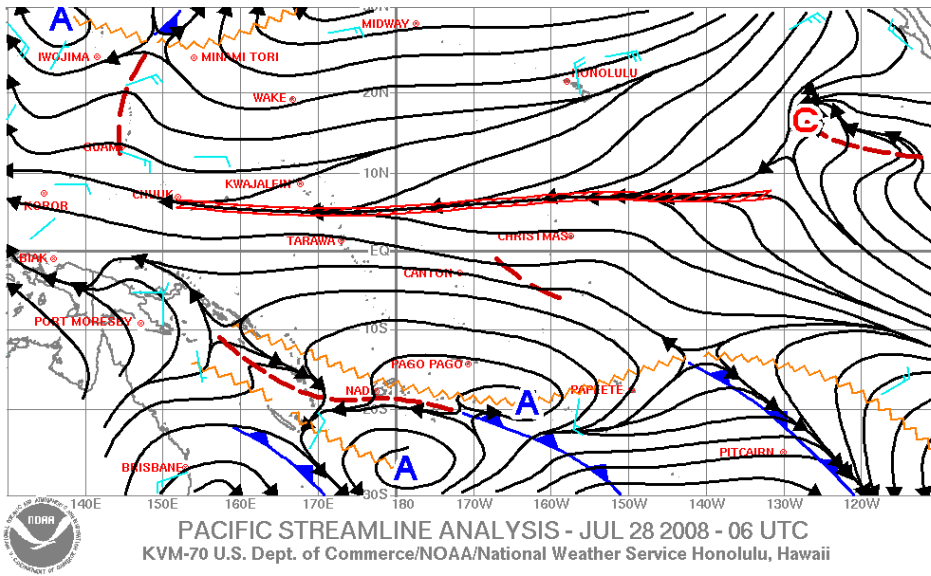
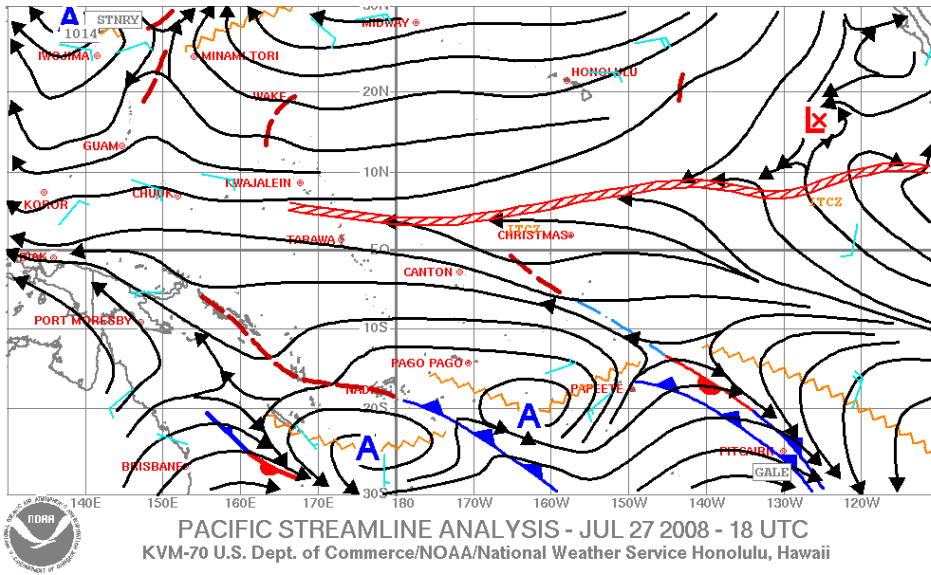
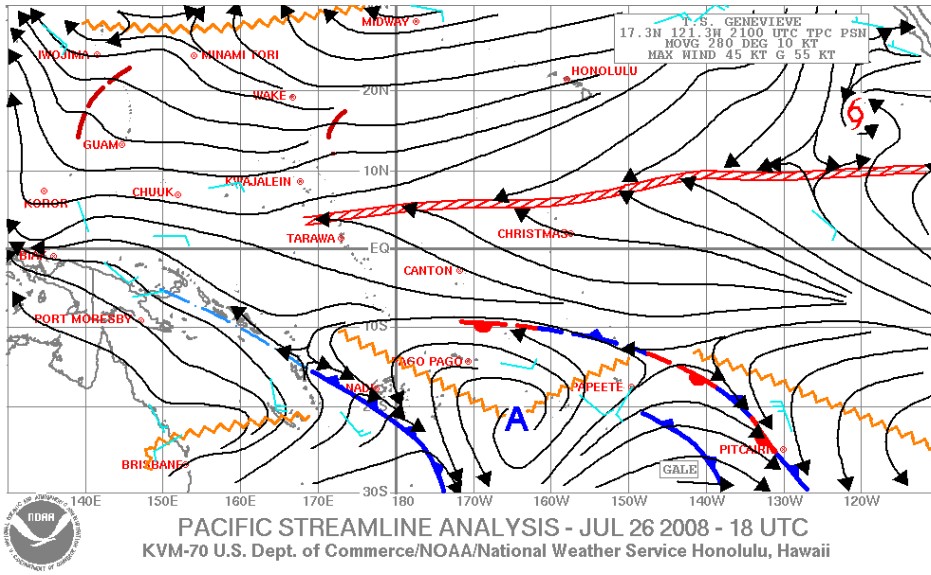
PACIFIC STREAMLINE ANALYSIS - JUL 25 2008 - 12 UTC  
KVM-70 U.S. Dept. of Commerce/NOAA/National Weather Service Honolulu, Hawaii



PACIFIC STREAMLINE ANALYSIS - JUL 26 2008 - 12 UTC  
KVM-70 U.S. Dept. of Commerce/NOAA/National Weather Service Honolulu, Hawaii







If you have not had the pleasure of looking at streamlines before there are a couple of things you should know.....

First, for some reason NOAA deals in Cyclonic and Anti-cyclonic activity, as opposed to Low's and High's that we are more used to seeing...So, if you see an 'A', think High and a 'C' think Low.

Cold Fronts, Warm Fronts and occluded fronts are what we are used to on our old weather maps back home but here we also run into Troughs and Shear Lines which are little beasties often linked to Fronts but are sometimes detached and can do their own thing. A shear line is what you would expect, a line between two air masses which are moving in different directions. For Trough, think ITCZ, sometimes called the Equatorial Trough, or perhaps think of a long bath of Low Pressure where the northern side can present quite a wide area of NWly winds.

Every which way, both these features mean much the same to the average cruising boat:- a period of cruddy weather. The former may be short and sharp; the latter may be longer and more protracted.

On the last map of the series you can see that the front which curves up towards Fiji is continued with a broken line, this is basically a shearline and indicated also are the directions of the winds both to the north and south of this line. This shearline is marked because of its importance; it is the axis of the SPCZ at that particular time.

The other front to the east, which curves up to the NW near Pitcairn Island has already swept through Polynesia, the main force of it concentrated in the cold front passing to the south of Tahiti and most of the yachts in transit. However the front shown still produced NW winds in Tahiti / Moorea and if you'd been paying a visit to the Austral Islands, (further south) you'd have got a short sharp blast.

When I arrived in Moorea in 1987 there were three cruising boats kedging themselves off the mud a little beyond Robinsons Cove after the passage of one of these fronts which reached a little further north than usual and brought strong NW winds right into the bay; I broke a Tie-rod beating into the same blow!

Not shown on this map is the broken line that extends from this front, probably up to the little disturbance shown east of Canton; when it comes to weather around here you have to have a healthy imagination. There are

many times when it's blowing like stink in the Tuamotu's and there is nothing indicated on the charts, however if you draw the broken line in from the last front that went through to the epicentre of activity causing the next front; there you have a Shearline or even a Trough Line.

In the area between Polynesia and Tonga the passage of a front which produces North West winds can make a major impact on most of the Island Anchorages and the further south you are the greater the effect. Even if there is no wind with the front, the suppression of the trades allows the swell to sweep around headlands and into the anchorages / moorings making life uncomfortable; only if you are inside a lagoon can you escape this.

Unfortunately most forecasters are not very interested in Sail-boats and they are even less interested in winds less than twenty knots, this is because five knots on the nose or fifteen knots makes little difference to a Container Ship; it's only when it goes beyond twenty that it makes a difference. So you have to add a little interpretation to your weather maps if you want to know what's happening in the five to fifteen knot range. Go back to the map before last and you'll see what I mean!

Most of us, by the time we reach Polynesia, have become familiar with GRIB files and some of us actually trust them; once you get away from those reliable Trade Winds the accuracy of GRIB's go south rapidly. The main problem is that GRIB's cannot handle the data that is input from around Fronts, Shearlines and Troughs. So, with no satisfactory data to report they print these little circles which to the casual observer look like areas of no wind. There is a big difference between an area of no wind and an area of insufficient data..... don't get caught!

Bob (the weather man) sometimes has to draw our attention to this matter.....

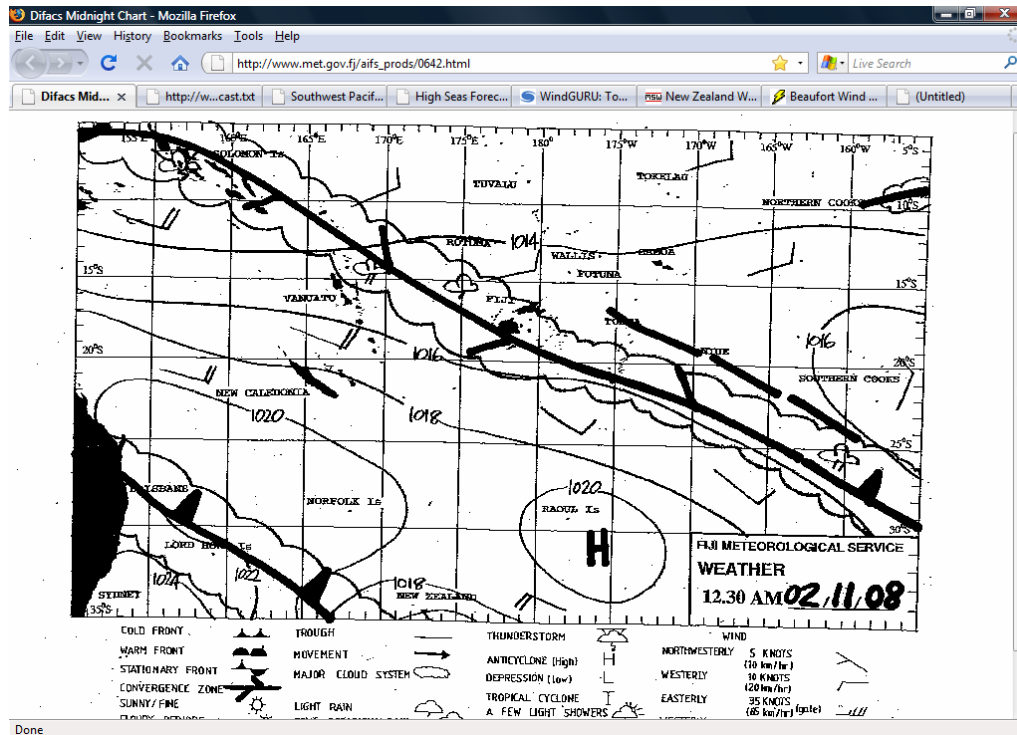
“SPCZ is moving south across Coral Sea and computers are picking it may develop a trough visiting New Caledonia 15 to 17 Oct and Southern Tonga 17 to 19 Oct. Squally showers, and appears in those GRIB files as a **deceptive zone of light variable winds. Avoid.**”

They are indeed “deceptive” however, if we were not getting Grib's, but acting on the weather indicators that are taking place around us; it is unlikely that we would ever get caught out. It's just that many of us have



become slaves to the Grib's and when they show light winds or no wind, the tendency is to believe. Don't!

Another useful product available from Sailmail / Winlink, (or by fax if you are lucky), is the Nandi (Fiji) Surface Analysis; the address is shown below. This is a very clear presentation by a forecaster who "on the spot".



Another source of information for those transiting this area is Bob McDavitt who I have already mentioned, he sends out a weekly newsletter which you can get sent directly to your personal e-mail account (for free). This usually gets sent out on a Sunday (New Zealand time). You can also get Personal Routing from Bob at reasonable rates

More info at <http://weathergram.blogspot.com>  
 Feedback to [bob.mcdavitt@metSERVICE.com](mailto:bob.mcdavitt@metSERVICE.com)  
[Bob.McDavitt@metSERVICE.com](mailto:Bob.McDavitt@metSERVICE.com)

Bob wrote a New Zealand Met Pack covering weather peculiarities for this area and the run down to New Zealand, you can check at the above e-mail addresses or you may well find a free download of this publication sculling about on the internet.

## LOOK FOR

Radio Cook Islands 630khz.... They give weather after the news several times during the morning particularly at 0620 (with tide data) and after the 1300hrs (T) News.

Radio Tonga 1070 khz....also gives weather in the mornings

Rag of the Air 8173 at 1900Z gives weather at 1915Z

HONOLULU, HAWAII, U.S.A.

CALL SIGN	FREQUENCIES	TIMES(UTC)	EMISSION	POWER
KVM70	9982.5 kHz	0519-1556	F3C	4 KW
	11090 kHz	CONTINUOUS	F3C	4 KW
	16135 kHz	1719-0356	F3C	4 KW

HOPE THIS HELPS YOU PLAN AND SAIL ACROSS THIS AREA AND ENJOY THE TRANSIT..... John Wolstenholme NZ Feb 2009