



space to install wind generators and solar panels, 'one level' living (important with an infant), lots of self draining stowage (a must for carrying sufficient gasoline and gas), the ability to comfortably carry a large tender and finally they do not roll. As we would spend a lot of time looking for good surfing breaks this, in itself, was a sufficient bonus to pick a cat.

We eventually chose a new Lagoon 440, the raised steering position, the uncluttered and covered outside dining area, and the solid practical look were all appealing. Several months of a cool spring and summer of 2007 were spent in La Rochelle, France fitting out

- bined rectifier / regulator assemblies.
- 1 x Aquair 100 towed water generator
- 3 x 130 watt polycrystalline solar panels with separate Fox regulators.
- 2 x 150 Amp Balmar Alternators with 'smart' regulators.
- Mastervolt Masterlink MICC Domestic Battery monitoring system.
- 2 x Mastervolt Battery Voltage Monitor BTM1 for engine start batteries.
- 6 x 120 Ah 12 volt Gel domestic batteries.
- 2 x 120 Ah 12 volt Gel start batteries.
- Mastervolt Mass Battery Charger 12/80-2
- Mastervolt Mass Sine Wave Inverter

“ **Since I left Tasmania in 1984 in my home constructed 10 metre ferro cement sloop the range, design and performance of catamarans had improved considerably** ”

'Sonrisa'. All the necessary chandeliers and technical facilities are conveniently situated within walking distance in this delightful town. In my opinion it is absolutely necessary to have a good working knowledge of all the systems onboard so I was happy to do all the electrical and mechanical installations. We opted for the most basic inventory from the factory due to their high installation costs and my desire to install the equipment myself. Our Lagoon 440 was number 203, which indicates the mass production of these yachts over only a few years. My first green requirement was the choice of the 3 cylinder 40 Hp Yanmar diesels rather than the 4 cylinder 50 Hp Yanmar as specified at an additional cost in our options list. The agent was adamant this was the wrong decision as more power sells! Now every time I start the engines I am reminded of the extra fuel being used as the factory installed the 50 Hp motors anyway!

One could spend hours discussing the technical, practical and manufacturer issues with the installation of various pieces of equipment – I basically sought good quality and well known brands that had world wide service. We installed the following on the generating / monitoring side;

- 2 x Ampair 300 wind generators with Powerful blade pitch control and com-

- 12 / 2000
- Honda 1 Kw Portable petrol 220 Volt generator.

Sonrisa came installed with all the standard 12 volt equipment such as anchor windlass, 2 x 12 volt (air cooled) fridges, 1 x 12 volt freezer, fresh water



Solar panels, wind generators, the Lagoon 440 is equipped to be as independent as possible...

- pump, fans, stereo system etc. We also use regularly; Electric Kettle - Coffee Espresso machine - 12 volt Schenker Smart 60 litre / hour water-maker (essential for washing nappies!) - Full Raymarine instruments including Radar E120, E80 displays and Autopilot (2 x control heads and wireless remote) - 2 x ICOM VHF Radios, Icom IC M400 SSB radio and Pactor Modem - 2 x Laptop computers - Iridium Satellite

telephone - Thrane & Thane Satcom Mini C - Standard Domestic 220 Volt TV and DVD player. (That's already quite a lot of comfort equipment for an ecological boat – Editor's note.)

As we are now based in Grenada for the next few months before some serious decisions have to be made about our location for the 2008 cyclone season, I can make an early report on our 'Green credentials'. Apart from the 3 day Bay of Biscay crossing, and the 29 day Lisbon to St Martin trans Atlantic trip all of our sailing has been day trips. The actual amount of sailing is in keeping with my usual cruising habits – about 10 % of our time is actually spent sailing with a couple of days of downward work, and lots of short trips under genoa or engine only. While the Caribbean provides plenty of sun and wind it is still not sufficient to run the 12 volt freezer – this has been relegated to 'pots and pans' storage. Otherwise I can comfortably confirm

we are nearly self sufficient in energy requirements. There are occasions when it is overcast or calm requiring the use of the 'Saudi Arabian breeze.' If I know we are moving to another anchorage, charging by the main engines can be optimized (apart from the hot water bonus) or we resort to our small portable Honda generator. One of the little known benefits of the Mastervolt MICC Charger / Inverter

monitoring panel is it's ability to vary the output current from the battery charger. If the batteries are well discharged and I have the watermaker operating it would normally overload the little Honda – however by adjusting the output of the battery charger I can 'dial in' the battery charge rate thereby optimizing the Honda's output to match the DC load.

The two wind generators are mounted on individual poles at the stern of each hull – just some 3 metres from our main social area. I was initially very concerned at the noise level from these generators – thankfully the feathering system works well, so while there is still a background 'hum' we have become quite accustomed to it. The fact that on a normal trade wind day they are happily putting out an average of 10 amps each makes the noise very bearable.

We have 6 separate energy generating systems onboard 'Sonrisa', plus each engine has 2 alternators. To consider long distance cruising utilizing just one generator I think is foolhardy, if not plain dangerous.

While there is a mass of empirical data on the calculation of electrical consumption and it is worthwhile to do the initial calculations, I feel it is important to take a philosophical and practical view on the type of installations. There are just too many variables on the input and output side – for instance when guests visit or one has a child onboard, sun and wind conditions let alone monetary and space considerations. One could buy a lot of diesel for the cost of the above mentioned electrical generators. Energy conservation (as all yachters are generally aware, but unfortunately city dwellers normally are not) is equivalent to energy production, a few minor 'tweaks' to one's lifestyle can tip the energy sea-saw easily into the green band – and boy does it make one feel good!