

SOGGY PAWS - 44' CSY Walkthru Cutter - 5.3' Draft - Feb 2012

Subject Area: Surprise Cyclone Cyril Hits Tonga Feb 2012

Unlike most of the boats crossing the Pacific this year, we opted to stay in Tonga for Cyclone Season instead of heading south to NZ. We still think this was a good choice for us, even though we managed to get almost a direct hit from an unforecast cyclone in early February. We are warm weather people, divers looking for calm summer weather for diving, and didn't want to make the long trip down to chilly NZ and back. We are not afraid of cyclones/hurricanes, having spent nearly 30 years in Florida and the Caribbean, and Neiafu, Tonga is supposed to be a good cyclone 'hole'. Below is our account of the cyclone, and a few of our 'lessons learned'.

Superbowl Sunday (Monday, 6 February, here in Tonga) was a blustery rainy day in Neiafu harbor, Vava'u, Tonga. We had already endured several weeks of similar weather, as the South Pacific Convergence Zone (SPCZ) had parked on top of us for weeks. This regional phenomenon, which generally runs from somewhere near the Solomons SE to somewhere near Fiji, Tonga, or the Cook Islands, had brought squally weather with wind from the West and NW for weeks.

During the game, which we watched on Aquarium Cafe's big screen TV, we observed strong gusts from the northwest rocket across the harbor and set boats bouncing. The forecast from all sources, Tonga, Fiji, and the US-generated GFS (via GRIB files), was for more of the same with winds to 30 knots overnight, and then by morning, less than 20 knots and clearing. We had been experiencing these same squally conditions now on and off for a couple of weeks, as the South Pacific Convergence Zone (SPCZ) was streaming over us all the way from the Solomons. Although we were unaware of it at the time a Madden Julian Oscillation (MJO) event was also in our area.

After the game, and while it was still light, we headed back to our boats on moorings at the Ark Gallery mooring field near Tapanan Island, about 3 miles south of Neiafu harbor. We anticipated the squally conditions easing starting at midnight, and backing around to the SW, and were glad that they did, as forecast. We had a pretty good night's sleep as the winds calmed down some.

But about 6 am the next morning, we were awakened by a nasty squall, with wind from the North. There is no internet in Tapanan, so we took a quick look at the latest Spot forecast (taken from a GRIB file). It indicated nothing significant in our area--the forecast was the same as the night before. But the winds continued to rise and was by then gusting to about 45 knots from the north. By the wind direction, we knew something was up to the west of us.

About that time an American ex-pat who lives in Tonga, Baker, came up on the VHF with a special weather bulletin from the Tonga weather service indicating that Cyclone Cyril was close by, headed southeast, and would pass nearly over us to the southwest in the next couple of hours. Cyril, had spun up completely unforecast overnight between Fiji and Tonga. According to after-action analysis, it was formally 'born' as a cyclone about 11pm the night before. We tracked its

progress as it passed almost on top of us, by watching the barometer and watching the wind back from NNW to eventually SW.

Though we were reasonably well prepared on our "cyclone mooring" with a strong connection, two mooring lines, everything aboard battened down, head sails removed and mainsail tightly wrapped on the boom, there were still two problems:

- We knew that our mooring, centered on a thousand pound ship's anchor and supported by a spider web of line and chain to other moorings/anchors, was weakest against winds from a westerly direction. So we had planned to add one of our large anchors out in that direction, if a cyclone approached. This we had not done yet.
- Our dinghy and small outboard motor were still on the davits from our trip back the previous night. Had we known that the weather would get worse, we might have loaded motor and dinghy aboard, or at least unloaded the motor and strapped the dinghy more tightly on the stern.

During the next two hours the wind went to 67 knots, a category 3 cyclone in the South Pacific. We had choppy seas to 5 feet in our bay and wind from the west, our longest fetch direction of about two miles. Fortunately, it went by us rapidly, and by 10am, it had calmed to about 20 knots. Within a couple of days it had disappeared into the southern ocean.

During the height of the storm, our mooring dragged about three boat lengths, and before we could get free, we ended up across the bow of Sea Flyer, the boat behind us. His primary mooring line had caught in the small space between our rudder and skeg. About 10 minutes later that strong 1" line had chafed right through and we were free again. Fortunately, his secondary mooring line held him off the rocks close astern when the primary line parted.

As I had entered the water with a knife to try to free us from Sea Flyer's mooring and the battering we were taking from their bow roller, Sherry was left onboard by herself, and ended up motoring in forward, still tied to our mooring, 'tacking' back and forth in 45-50 knot winds, trying to avoid Sea Flyer's mooring and bow, for nearly an hour until the winds eased and backed enough to keep us clear. I ended up boarding Sea Flyer, as our ladder was ripped off, and I could not get back aboard. We are fortunate that the storm, which was very fast moving, moved off quickly.

Both of the boats sustained considerable damage, but no one was hurt.

In the 10 minutes we were pinned on Sea Flyer's bow, with 5-6' seas and 50-60 knots winds, their super-strong double bow roller battered our port quarter mercilessly. Though our CSY 44 is built like a tank, we ended up with a two foot diameter hole in the topsides, high on our port quarter. Our AB dinghy had been ripped off the davits, and was ashore with a hole in one pontoon, and the outboard motor was underwater on the bottom. Two of our solar panels were seriously damaged--one on the rail by his bow roller, and one on the arch by his headstay. Our Monitor wind vane and our swim platform were ripped off the stern. Our stern rail, which took many hits from Sea Flyer's bow, looked like a pretzel.

Sea Flyer had a seriously bent anchor roller tray, missing sections of their bow rail, and a bent Profurl roller furling extrusion where it had tapped our solar panels.

Three months later we are done with the fiberglass and metal work repairs that we can do locally. We ended up shipping supplies in from NZ by freighter to make the fiberglass repairs. Fortunately we found a good welder who helped straighten and weld our broken metal work. The most significant damage that we cannot repair is that two of our six solar panels are shattered and have degraded output.

In Neiafu harbor, where about 20 sailboats are moored, most of the docks along the eastern shore were seriously damaged and rendered unusable. Again, had there been any warning, the docks and structures would have been secured for cyclone conditions and they would have sustained much less damage.

Several moorings with boats on them dragged and at least five boats ended up against the shoreline. One trimaran lost the front of an ama and a couple of monohulls sustained substantial hull or deck damage but were not holed. Another boat away from the harbor dragged anchor and damaged her rudder. Several other boats in different parts of the island group were also damaged or went walkabout and were lost or damaged on the surrounding reef. Electricity and internet service were out in much of the island group for a week. We understand there was also considerable damage in Tongatapu, the southern island group and capitol of Tonga.

The speed with which Cyclone Cyril developed (less than 9 hours), the timing (middle of the night), and the existing squally conditions combined to make this a rare and difficult situation. Even the 'old hands' in Neiafu were surprised by this one.

Both the SPCZ and a disturbed weather condition that circles the globe in the tropics about every 45 days, called the Madden-Julien Oscillation, were in our area at the time. It is likely that the combination of these two conditions and the normal warm summer water combined to create this surprise cyclone. It was a far cry from the multiple days' notice of an approaching hurricane that we are used to in the Caribbean. So, although this is a sample of what can happen during cyclone season, a surprise storm like this is very rare and not the norm. It just reinforces the old Boy Scout motto "Be Prepared".

About 500 boats a year crossing the Pacific are faced with a decision regarding what to do during the south Pacific cyclone season. There are at least six options. Because of the summer weather and great cruising and snorkeling/diving, Tonga is certainly a viable alternative to the long slog south and then back from New Zealand. Except for the experience with Cyril, our 6 month stay in Tonga has been just what we had hoped for.

Lessons Learned

Having decided to stay in Tonga for cyclone season, partially because of our years of experience weathering hurricanes in Florida, we have learned a few valuable lessons we would like to pass on to other cruisers planning to 'cyclone over' in the South Pacific.

1. Forecasting in the Western South Pacific is a far cry from that which we are used to with the US National Hurricane Center. There are no 'spaghetti models' here, no 'Hurricane Hunter' airplanes, and no 5-day hurricane track forecasts. The Fiji Meteorological Service, which is responsible according to the World Meteorological Office for this sector's tropical forecasts, is not as well-funded, timely with their forecasts, or as far seeing as in the Caribbean basin. We are outside of US waters, and beyond the forecasting purview of Australia and New Zealand as well (NZ forecast area is to 25S, and Australia forecast area ends just off the coast of Australia).
2. Being in a cyclone/hurricane 'birthing' area is quite a bit different from being in an area several hundred miles downstream. There is not nearly as much warning and prep time as we normally experienced in Florida.
3. 25 years of watching weather patterns in Florida and Caribbean has taught us a lot about what to expect during each month of hurricane season. Not having that experience with weather patterns in this area really handicapped us.
4. It is unfortunate that we had our heavy ground tackle on deck while our mooring dragged in an unexpected storm. We knew that the mooring we were on probably wasn't up to really big storm conditions, but we declined to put any of it in the water ahead of time, due to minor inconvenience factors. We thought we'd have plenty of warning to put extra ground tackle out when a storm was on the way. The result was one MAJOR inconvenience.
5. At least in this area, the Madden Julian Oscillation should be watched carefully. It brings extra instability and seems to have been the spark that turned our seasonally normal 'unsettled weather' into Cyclone Cyril overnight. The MJO is still not well understood or forecast, but what modeling is being done by various weather agencies around the world is available on the internet. The page we are now watching is this one:

<http://www.cpc.ncep.noaa.gov/products/precip/CWlink/MJO/ewp.gif>

In a future article, we plan to do a current detailed assessment of the mooring options during cyclone season in the Vava'u, Tonga area, and also another article with the same info for Fiji and points north. Our current plans are to cyclone over in Fiji next cyclone season (Dec 2012-Apr 2013). We'll let you know how it goes.

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CSY 44 Walkthrough, 5.5' draft
In Tonga