

CYCLONE

A white catamaran boat is moored in a marina. The boat is the central focus, with its hull and deck visible. In the background, a large, forested mountain rises against a cloudy sky. The water is dark and reflects the light. The overall mood is somber and dramatic.

THE WARNING ...

My first knowledge of the potential of a large South Pacific disturbance forming into a very large and severe cyclone was first identified by several owners of vessels moored in the Port Hinchinbrook Marina APPROXIMATELY SEVEN DAYS PREVIOUS TO THE EVENTUAL CROSSING.

A white catamaran boat is docked in a tropical bay. The boat is viewed from the front-left, showing its two hulls and cabin. The background features lush green trees and a large, hazy mountain range under a cloudy sky. The overall scene is serene and scenic.

NE YASI

FEBRUARY 2011

an account of *riding* out the cyclone

by DON BRIAN HAMPTON

DISCUSSION CENTRED on the likely scenario that this system could intensify and take a very fast and direct approach to Cardwell. As days passed, this possibility was confirmed by the various national and overseas weather reporting agencies. This transferred to the local Councils and Emergency Management agencies which commenced a series of warnings for preparation by members of the public and visitors to the area.

One look at the system on the Fijian weather page was enough to satisfy anyone of the size and intensity of the now named cyclone Yasi. The Australian BOM site suggested that the cyclone was a Category 5 'generational' system. I.e. A large system seen only once in a generation. If this was correct, modern Cardwell was in trouble.

Preparations

One of the main reasons why I have based *Muscat 7* – an 11.8m Lightwave

catamaran at Port Hinchinbrook Marina apart from the magnificent cruising grounds is that it is only a very short distance to the large protected Hinchinbrook Channel.

This channel has a large mountainous arcing barrier of approx 40nm separating it from the sea surrounding the south east and stretching around to the north east. It is then bordered by part of the Great Dividing Range on the western side. The channel is drained by a maze of short winding mangrove lined creeks with

several small knolls forming quite effective wind buffers. The mangrove trees in some reaches of the creeks also form quite dense wind barriers. Several of these creeks have a local reputation of being safe haven 'Bolt Holes' in cyclones and have been used by local skippers for over 100 years. Evidence of this can be seen with the old decaying chain and warp lines protruding through the mangrove root systems.

My layman's opinion has always been that the construction of many marinas in the Tropics do not allow for the huge rise of abnormal tidal surges. The possibility

of an event such as Yasi – which has eventually paid off.

Cyclone preparation is unique. The decisions that you take are very personal and very final. There is absolutely no chance for you to safely change your mind once the event is under way.

Good thorough planning is essential.

Considerations that I took for preparation

Q. Condition of boat?

A. Excellent! And well prepared – including recovery gear!

I have planned for the event so will go to channel.

Q. Do you stay with the vessel? Or tie up and evacuate?

A. My preparation allows for a reasonably safe experience and my fitness level and preparation give me confidence to stay with the vessel!

Q. Do I need any crew?

A. Once the boat is prepared in the bolt hole no. In this situation crew only adds to the risk and complicates decision making.



of pontoons rising over the tops of the pylons with boats still attached is a great risk, irrespective of the category of the cyclone event, but, even more dependent on the state of tide and subsequent surge.

Over the last three years that I have owned *Muscat 7* I have experienced three smaller events where I have removed the boat to the Channel and tied up in a pre-prepared area. I have then only to negotiate any other boats and prepare the boat and myself. These events have forced me to place an emphasis on preparation and planning for

Q. Suitability / experience of skipper

A. Fair but confident with preparation and planning.

Q. Decision to be made whether to tie boat up at marina and evacuate or proceed to the pre-prepared bolt hole The boat is adequately insured — so why worry?

A. If I leave the boat in the marina I may lose it. If the boat is destroyed there is a chance that I will probably never have it replaced and sailing will be a past memory. I have a chance to protect the boat.

Muscat 7 firmly tied up in a feeder creek prior to Yasi's arrival.

This exhausted little Sooty Tern joined me for assistance with his return to the outer reef. Of course I called him Yasi. He stayed all the way back to the marina, circled and flew east. (right)

A well thought out grab bag and protective equipment formed a large part of the preparation. (below)



If I need assistance after the event I can organise a crew in a safer environment.

Q. Is the preparation and selection of the site suitable to cater for winds which will change direction when the system crosses the location?

A. The site was used during Cyclone Larry by another skipper who reported no significant issues!

Deemed suitable!

Q. What on-deck preparations are needed?

- Remove all headsails and remove/secure main.
- Remove all sunshades and batten down any potential movable items such as

dinghies, solar panels, gas outdoor cookers, weather curtains.

- Tie down boom and secure all tape light sticks on each warp line and tie points on boat to assist in adjustment for surge.
- Check reliability of anchor points land and boat for lines.
- Prepare main anchor – for emergency deployment only.
- Accept that the use of anchors may lead to fouling and loss in debris.
- Ensure all vessel batteries are at 100% charge and run motors and lights when possible early in event.

Q. What survival gear is needed ?

- Prepare a grab bag including spot light, V-sheet, ePIRB, portable radios, (VHF

and UHF) small first aid kit, insect repellent, light sticks, flares, snack food, water.

- Wear harness and tether, helmet, life jacket, wet suit , shoes, light sticks taped to both sleeves.
- Clip on water activated strobe light to body and grab bag handle.
- Prepare main first aid kit in a ready central position with emergency lighting. Don't rely on dinghy survival!

Be prepared to go to the mangroves as a last resort!

Q. What communication is needed?

- Advise Coast Guard of intention to stay with vessel and location of bolt hole and after event communication needs.
- Advise family members and friends / neighbours also.
- Arrange regular skeds with neighbouring boats – if any.
- Tune radio to ABC Far North for constant cyclone reporting before, during and after the event.
- Use computer with wireless internet to monitor cyclone path and patterns until mobile towers close down.
- Provide sufficient mobile phone credit and charge for constant use.

Q. What recovery gear is required?

- Small chainsaw with fuel and bar oil.
- Small portable winch, hand trimming bow saw.
- Keep main anchor and chain free for potential use.

Q. What pre event planning is required?

- Prepare a good meal and provide snack packs to last not only through the night – but next day as energy levels would be depleted.

Check and re-check boat deck!

The Yasi experience

At 1100hrs on Tuesday morning February 1 (the day before the cyclone) I reported to marina staff that I was intending to leave the marina and transit to my bolt hole at Gayandah Creek. I was made aware that an impromptu meeting called by the management for skippers on the Monday afternoon had recommended to the fleet that they remain tied up in the marina for the

event. Most of the fleet were removing items from their boats and completing last minute details to their planning.

I was then made aware that an announcement from Emergency Management was about to be made enforcing a total evacuation of all people from Cardwell district. My wife evacuated with our Cardwell neighbour and her elderly mother from the Nursing home and drove back to our residence on the Atherton Tableland which we had cyclone-prepared previously.

I called the Coast Guard on VHF 16 and gave my details, intentions and future contact details then left the marina for Gayundah Creek, approximately 10nm to the south.

On arrival I found a total of three other boats preparing and was told of another at the end of the creek. I found a suitable feeder creek which offered protection whilst still a reasonable distance from the other boats and commenced the tying off process. I was still able to find the time to catch two nice Mangrove Jack fish to enhance my gourmet food selection. I completed this process and rechecked all lines during the following morning in preparation for the evening crossing.

I made contact with the neighbouring boat and found that there were only two

of us remaining on board and that the other skippers had tied up and left. I had a good night's sleep in preparation for the next day.

On Wednesday morning (February 2) another two fishing boats appeared but elected to find another creek further to the east of our feeder creek. They made radio contact when they were settled and arranged for a sked around the crossing of the cyclone on VHF 16.

The weather gradually deteriorated after lunch on Wednesday and great flocks of several varieties of outer sea birds commenced spiralling across the mangroves and heading inland. A final check was made to the deck and additional lines were placed across the solar panels and light sticks deployed around the boat. I then prepared dinner and settled down to the sound of rising wind roaring through the trees and rigging.

As darkness fell I ran the motors and lights to ensure a fully charged electrical system and to allow my neighbour to see that my location was secure. He also displayed sufficient lighting for me to do the same.

The intensity soon increased and blinding wind and rain replaced any visibility that we had.

I rechecked all of my emergency planning and secured my grab bag and first aid kit in appropriate areas. In the early stages I was able to go outside to check the security of the lines and tie downs and everything appeared to be holding as planned. It soon deteriorated to the level where it wasn't possible to fully open the saloon door without a tether and my helmet chin strap was tightening as the wind was increasing.

I noticed that the glass door was starting to flex with the pressure so I unfurled the insect screen to help deflect any fragmentation and found that by laying on the floor and holding the door ajar about 100mm I was able to equalise the pressure and counter the flex.

I was able at times to relax this procedure and concentrate on the internet radar site and mobile phone and listen to the ABC radio cyclone talkback. I also had a number of friends phoning me with support and this was a good opportunity to realise that I wasn't the only one going through a difficult night.

Muscat 7 firmly tied up preparation. The large Danforth anchor holding the bow into the wind was lost in debris during the outflow of the surge.



As Yasi intensified, so did the conditions outside. There was a constant roar and the exterior of the boat was being peppered with shredded mangrove leaves and small mangrove crabs. The wind veered more directly astern prior to crossing the coast and as a result the Lightwave system of folding rear steps started to clap up and down with no possible way of me intervening to tie them down.

The wind strength was such that the sterns on both hulls were being shuddered and small lifting was detected. At about this time I noticed that the boom was starting to move and the preventer line had uncleated. It took me about 30 minutes and several attempts to cross the deck to re-cleat and tie off. During this time I again experienced the wind trying to tear off my helmet and without a tether would not have attempted to go outside.

The ABC reports of the eye approaching Mission Beach had me carefully looking outside and in between gusts I was able to get a good view of the eye wall over the ranges to the

The flags describe the feelings of making your own way back into a destroyed marina.



north. **There appeared to be a high black and intense wall of storm cloud with lightning and thunder rolling constantly.**

I didn't experience any calm as the eye passed over Mission Beach but experienced an immense increase of wind direct from the north-west. My position at the entrance of a feeder creek meant that now the wind was heading straight into the front of the boat so a lot of the pressure on the rear of the boat was lifted. The boat handled this change well with the only negative being that the protection that the mountains had initially given had been replaced by the lower mangrove tree systems to the west. This meant that there was a constant wind instead of gusting.

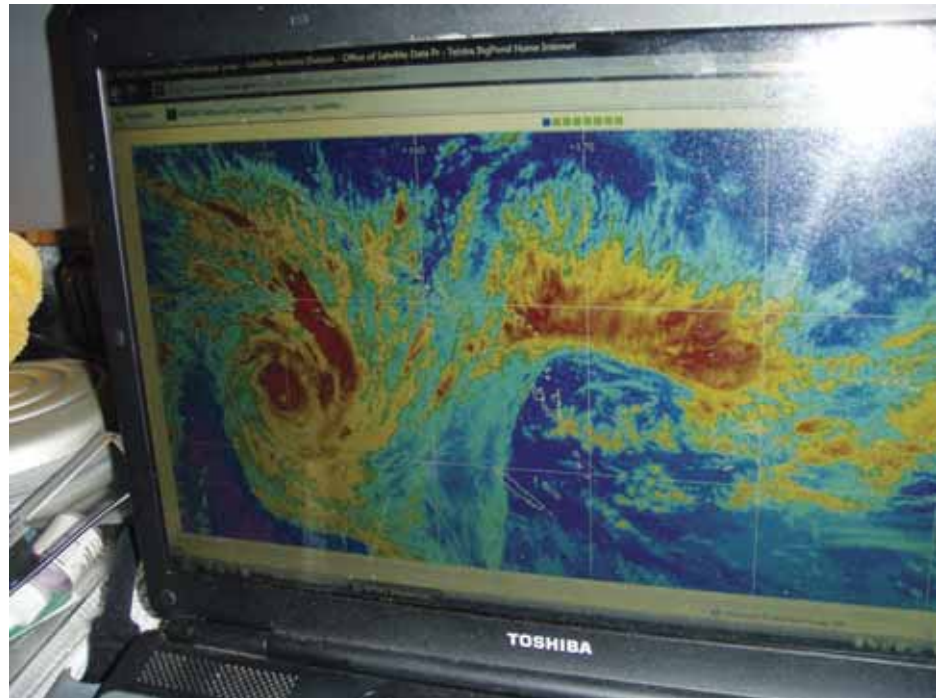
At around 0215hrs on Thursday morning I noticed that the outgoing tidal flow had changed direction about a half an hour prior to low water. I interpreted this as the start of the tidal surge and reported it over VHF 16 in a SECURITAY call to all vessels in the area. I made my way out of the cabin under tether and crawled to all tie off points and loosened the lines.

Once I had completed this task, I then heard another dull roar over the existing roar and **directed my spotlight onto a wall of tidal water entering our secondary creek at least one metre high with another wall of fine white mist rolling above it.** This was accompanied with floating debris in the form of mangrove root systems broken away from the shore line. I quickly made my way back to the cabin, shut the door and hung on.

The sound increased as the boat started rising and there was a distinct sound of mangrove trees snapping and crashing around the boat. I can recall shining the spotlight outside to see that I was looking out over the tops of all of the mangrove trees and still facing the same direction and apparently secure. **The boat would have risen three or four metres.**

A short time later the roaring changed direction and came from the stern. There was considerable buffeting and some lateral movement of the boat. I reasoned that the surge had rebounded and the flow had either removed the mangrove roots or broken free some of my lines. I then realised that the boat was starting to list to the starboard and that I had

This computer image shows just what an animal this cyclone was. Note the tail which broke off and then followed the cyclone in to the coast over the next two days as an intense storm.



been left in the upper reaches of the mangrove bushes on the port side. **The water continued rushing out and it was then obvious that the boat was wedged and quite secure albeit on a 40° list about one metre from the tops of the trees.**

I decided that I should then leave the cabin door open as an escape route if the boat was to move further off its current position. I placed a wedge to keep the door open. The wind then promptly blew the interior closed screen door fitting off the wall down onto the galley floor. **I collected my grab bag and tethered myself and the bag to the exposed outside walkway beside the helm station and curled up in the valley on the high side.**

The time was about 0330 and I decided to get as much rest as I could in this position until dawn allowed me to take stock of my position. The wind and rain maintained its strength until dawn but despite my exposure I was still able to catch some sleep as I was warmly and securely tethered in the V of the walkway.

The morning after

Dawn allowed me to verify that I was on a list and wedged in mangrove bushes and as the tide was again making, the boat was slowly levelling. I expected that the following high tide at around 0900 would also include a higher than normal tide and if I could be prepared, this may give me the opportunity to free the boat from the mangroves.

My planning included in order:

- Free the dinghy by cutting the wall of mangroves away from the stern and under the still intact solar panels.
- Using the dinghy, set the main anchor at a 45° angle from the bow into the centre of the creek using all 80m of the chain.
- Set about clearing as much of the broken root system and broken lines from under the front of the boat.
- At the top of the tide use the anchor winch to assist in warping the boat off the mangroves.

I set about achieving these tasks which unfortunately I was not able to complete



The distress flag flown in conjunction with a V sheet.

until an hour after high tide.

Communication with family was a priority as was a trip up the creek to my neighbour to check on his welfare. He had his own problems but not as complicated as mine. By the time I attempted to winch the boat off the 'nest' I had lost my opportunity and the boat had continued its list.

I took the opportunity now to make a meal and consider my options for a further attempt for the next high tide due on Thursday night at approx 2000hrs.

My plan consisted of :-

- A good hot meal;
- Some rest and /or sleep;
- Wait until low tide to further assess the holding mass of mangroves under the boat and attempt to clear away any mangroves which would hinder the safe passage of the boat on a 45 degree pull;
- Notify Coast Guard that I would be late;
- Notify SES that I was detained but okay and was attempting to free the boat independently;
- Notify my family of my plan.

I continued clearing throughout the day and was quite satisfied that I could not do any more to assist the refloating. I realised that the evening tide was not as high as the next morning tide and if the winching process failed I would have to wait again for the morning tide.

I also decided that I would attempt to have any power boat in the vicinity assist with a snubbing tow in conjunction with my winching manoeuvre.

As the phone system was now down and it appeared the VHF repeater system was also down I decided to fly a distress flag and a V sheet in case I missed the opportunity to flag down a powerboat or make contact with a defence helicopter.

The evening tide allowed me to slightly turn the boat into a more direct angle by using the winch, however; I decided to wait until the morning before trying again. The constant heavy rain was now filling the starboard engine bilge as the angle of the boat forced the water uphill and to drain through the engine hatch causing the pump and audible alarm to sound every 10 minutes. After several long sponging sessions in pouring rain I jury rigged a 25 litre bucket in the engine room to catch the rain water and hold it giving me about an hour and a half between empties until the tide again started levelling out the boat.

The next morning after (Friday, February 4)

At dawn I was able to liaise with my neighbour who by now was preparing his boat for return to harbour. He assured me that the skipper of one of the other boats would be appearing to recover his boat prior to the high tide and would be able to assist with the snubbing tow. I then removed my distress signals and waited for the tow.

At the appropriate time the other boat assisted me with a tow in conjunction with my winch and *Muscat 7* slowly was relaunched.

I carried out a check of all engine fluids and checked all bilges before I started the engines. I was then able to recover the main anchor and then proceeded with the other boats in convoy back to Port Hinchinbrook.

On arrival at the leads I overheard water police calling VHF16 for any details on a missing vessel *Muscat 7* and quickly informed them that I was no longer missing. I attempted to inform SES however phone service was still down or overloaded.

I arrived at the marina to find total devastation with most of the fleet either totally destroyed or severely damaged. Most of the devastation centred on my old location. Scenes of this devastation have been widely publicised on national and international media.

I tied up to one of the few surviving private pontoons which is assisted by pylons considerably higher than the other pylons on the now missing marina pontoons.

I have since had an opportunity to dry out the boat on a sandbar and found that the port rudder has been damaged and will need replacing. I will soon lift the boat for a proper inspection **but I am confident that the boat has survived the experience with only minor damage.**

What I would do differently

My decision to remove the boat from a 'cyclone rated' marina was not taken lightly but was vindicated when I saw the trail of destruction. With this in mind I would most likely remove the boat to a bolt hole in the future if it was at all possible and I was physically prepared. This may not always be possible due to floods cutting roads prior to cyclones and the possibility of not being able to safely move the vessel prior. I would never expect anyone else to move the boat in my place.

If the marina is repaired and redesigned with taller pylons I may give closer consideration to staying however the safety of my boat would still be at the mercy of any other boat which freed itself and became a missile.

In future I will notify Police, Coast Guard, Fire and Rescue, SES and family of not only my precise plan but also of the co-ordinates of my bolt hole. This will include a

communication plan and photos for aerial identification of the boat. As will be made clear later, the co-ordination of initial rescue and relief of Cyclone Yasi was very disjointed with the various agencies all appearing to overlap and frustrate the communication process.

I was never missing although listed. Police were advised by my family of my circumstances and I advised SES and coastguard. It was clear that a lack of general communication between agencies caused a lot of confusion. My experience with Emergency Services allows me to make the comment that this initial confusion between agencies is unfortunately very common. It would be wise to make an allowance for this large event confusion in any communication plan.

I will locate several different sites and prepare them with upper level portable anchoring points to enable a running line back to the boat high enough to counter debris from surges colliding and pulling lines or tree roots out, in a form which will allow quick retrieval, setting and loosening.

I have already prepared strong long lines with hardware and an itemised recovery kit and will locate them on the boat for the duration of cyclone seasons.

Conclusion

By writing this summary of my experiences with Cyclone Yasi I in no way intend to try to convince anyone to follow my example in a Cat 5 Cyclone or even a lesser one. This is simply a record of my experiences.

Every skipper makes his own judgements on vessel and crew safety and is ultimately responsible for his actions. If he decides to use any of my experiences with his planning and it works for him I am satisfied.

My training in Emergency services over the last 15 years and my level of fitness have contributed to an understanding of measured risk taking combined with essential prior planning. This undoubtedly assisted me in achieving a relatively safe outcome.

I am now also aware of the high standard of strength and safety designed into the Lightwave boats and my thanks go to Roger and the Lightwave team.