



# Mike Harker

## Triple Wrapped

### DIARY EXTRACT

Tuesday

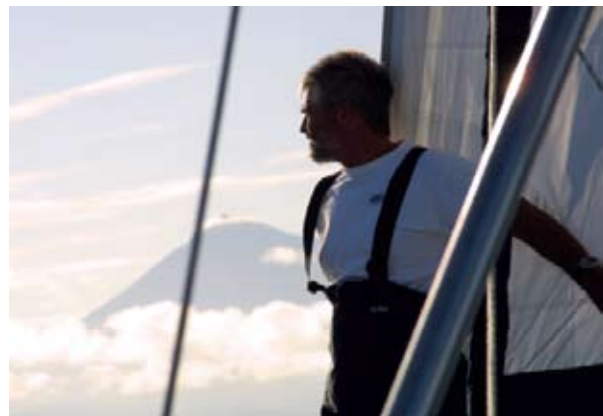
June 19 2007 – 3 am

Lat: 150° 00' W

Lon: 10° 00' S

Seas: 10-12 feet out of the NNE and 8-10 feet SE – Crossing Seas

Winds: 18-20 knots ESE with gusts in squalls 26-30 knots from NE-E-SE-S depending on location of squall relative to vessel.



Everyone is familiar with a wrap. It is a good healthy snack easy to make. Just put any ingredients onto a flat tortilla and “wrap-it”. Some Mexican foods, including a burrito, are essentially a wrap. Even the French wrap exotic ingredients into things.

A “wrap” on a sail boat can mean three different things according to what is being wrapped. The foresail – the jib, Genoa, Staysail or even a Spinnaker – can wrap itself around a shroud, stay or even its own lines or sheets. They can be difficult to undo but it happens a lot in racing, especially when the foresail is up and the boat changes direction from downwind to upwind or the reverse. If the crew is not quick enough, the free floating or flogging sail end (clew) or aft edge (leach) starts whipping around and catches something or even a part of itself and “wraps”.

Another wrap can be the loose end of the upwind sheet on the foresail. The downwind sheet is tight and holds the clew in close to the boat to trap or control the amount of wind coming across the boat into the sail. The upwind sheet is let loose and is kept ready in case the boat has to tack across the wind and then this sheet becomes the downwind sheet in a few seconds. If the newly loosened sheet

is not brought in tight, but instead starts whipping around, it can “wrap” itself around something, anything in its way, like a shroud or other line, or even around itself into a knot.

A third type of “wrap” is when you are not paying attention to the powered winch and the tailing end of the line that is being wrapped around the winch gets under the tightening line. If not noticed in time it can wrap itself under the tensioning line and be difficult to undo. The more line bunched up under a powerful electric winch, the more difficult it is to unwrap. A

winch is geared to only turn clockwise even when the cranking handle is turned in either direction on a two-speed winch. The internal gears and claws keep it from turning in the opposite direction. When you wrap a tightening line around itself, it does not just come undone; you have to do something about it or that line becomes stuck and useless.



### *Where in the world am I ...*

I am sailing from Nuku Hiva Marquesas towards US Samoa in the South Pacific Ocean heading almost due west along a line of 10 degrees South latitude.

I marked three atolls that would be close to my route with waypoints on the



chart plotter just to keep reminding me that these dangerous reefs, atolls or islands were not to be forgotten and possibly run into while sleeping, writing or preparing food down below. I wanted to know exactly where they were and stay clear. One of these dangerous atolls on my route was Karoraina, about halfway between Nuku Hiva and Suvarrow.

On Tuesday morning, about 3am, I was napping on the cockpit floor very near all the instruments and the wheel when I felt the wind increase and whistle in the shrouds. The boat started to heel a little more so I got up to read the wind instrument.

The wind was normally around 18 knots that night and I had taken down the spinnaker (I do not like to fly the spinnaker at night, you must go forward to roll it up and I don't like to move

along the edge of the boat to the bow at night in heavy seas) and instead rolled out the staysail. I kept the genoa on a whisker pole with its clew out to windward taking the maximum advantage of that big foresail.

However, the genoa sail is simply too large when the wind gets above 25 knots.

As I was standing at the helm reading the instruments, the wind meter showed 24 knots. At that moment a sudden gust of wind shot up to 30 knots and the rain started. It was a black night with no moon so you don't see the squalls coming. This was a BIG one and its winds were coming more southerly.

I had to make the big genoa out to windward smaller, but first I had to turn the boat to keep the new wind direction blowing into and not across the poled out genoa. That is the danger of putting the end of the sail (clew) out to the opposite side of the boat from its normal position, held there by a fixed pole.

Normally the genoa is out along the downwind side of the boat and its angle to the wind is controlled by pulling in, or letting out tension on that downwind sheet.

With the clew of the genoa on a pole held out into the wind, you cannot control the angle of the sail to the wind. To do that, you actually have to turn the boat

more into or away from the wind. The one thing you do NOT want to happen to a sail on a pole out into the wind is for the wind to come around and attack the FRONT side of the sail (or 'back' the sail) which could, if the wind were strong enough, turn or twist the bow of the boat into the wind and off course or damage the pole.

I turned the boat to starboard straight downwind. I watched the wind needle stay on the port side but also increase to 34 knots. I had to do something fast or I could break the pole or one of its lines or even rip the sail.

In total darkness, I first released the two sheet ends from their captive self-tailers atop the winches loosening the tension on the upwind sheet by about three feet, and then locked it into position. I then went to the aft end of the furling line whose forward end



is attached to the front drum on the lowest most forward part of the genoa (tack). This furling line is wound around the drum that rolls the sail in and out by pulling on or releasing the aft end of that furling line. The line runs along the side of the boat back to a turning block then through a “stopper” and up to a winch. The line has a grip clutch or “stopper” that keeps the tension you want held at that point. From the stopper, the end of the line is either tied off for sailing or the end is brought around a winch to be able to pull in on the furling line to roll up the sail making it smaller.

I went to the starboard arch where I tie off all my line ends and found the furling line for the genoa. I untied that line and brought the end back and around the winch. Normally you wrap a few loops around the winch and then pull it into a “self-tailer” atop the winch that keeps the line running around the winch and the free end falls to the cockpit floor.

I left the line loose around the winch and did not put it into the teeth of the self-tailer so that I would be able to pull on the line and start the drum rolling up the sail first before using the powerful electric winch. I went to the line stopper and prepared to release the clutch. I was ready to hold on to the line and pull in on it to turn the drum to start the sail furling.

When I released the clutch stopper, the wind pressure was too strong for me to hold and the furling line raced through my ungloved hands burning the inside of my fingers and palm. The line pulled all the way out and only the knot at the end of the line finally stopped it at the stopper.

Now the genoa was let fully out and started flogging and whipping around out in front of the boat. The windward sheet going through the pole was now being whipped back and forth from the tension the sail end still had. The loose end, the downwind sheet on the genoa, was also flogging and whipping around and came up and over the other sheet. It tied itself into knots. I didn't realize this until later, when I got out a flashlight and went forward to find out why the furling line wasn't rolling in the genoa.

When the furling line whizzed through my hands and finally stopped by the knot hitting the stopper, I tried to pull that end back to the winch. The sail was flogging so much it was almost impossible. But every now and then it would slacken and I could pull a little more line up to the winch, finally getting enough line around to use it. I pushed the electric button on the winch and the furling line started to roll the drum and thus the sail into a smaller package, at least I thought so.

The winch would pull in a little line and then make that sound when you know it is trying too hard. I would release the furling line from the “self-tailer” jaws and let out a little line, then start the winch again, back and forth. Doing so I thought I was rolling in



Racing a squall



Settling in for the night

the genoa sail. But the sail was still whipping around and making terrible flogging sounds. Even the mast and all the shrouds were vibrating and it seemed the whole boat was shaking.

I needed to go up forward and see what was happening. Up until now I could only hear and guess. I was wearing my inflatable lifevest with built in harness so I found the six foot long tether and attached both ends to the D rings at the front of the vest. I put the rest of the webbing around my neck so I wouldn't trip and made my way forward always holding on to a hand rail or standing rigging until I could turn on the flashlight and have a look at the genoa flapping at the bow.

What a mess! The sail had wrapped around itself and the luff going up the forward stay. I had three or four wraps going around clockwise up from the clew and another three or four going



counterclockwise below that. AND both sheets were knotted together after wrapping themselves into a ball of knots.

A DOUBLE WRAP! I didn't know what to do. The sail and the sheets were both wrapped around and knotted.

The sail wrapped around the front stay and itself many times and flogged like crazy. It was the loose sail above the clew going all the way up the stay to the mast that was bellowing out at different places and catching wind. This was the loudest and most violent and was going to do the most damage.

The loose downwind sheet had wrapped itself around the tight, upwind sheet going from the clew out to the pole. The lines were knotted together at about eight feet above the deck. No way I could reach or get to the knots.

I didn't want to stay out there on the bow too long, so I went back to the safety of the cockpit and thought about what I could do. It was dark, raining, rolling and I hadn't slept in over 30 hours.

But I needed to try something. It was a little after 3am. This had all happened within five minutes; I thought it was an hour. The sun wouldn't be up for three or four hours and the sail was beating itself up and possibly harming other essential parts of the boat. I needed that sail, it was my downwind sail and it was downwind all the way to Australia.

I decided to try something. I would release the tension on the sheet going through the pole and hoped that would relieve the knotted lines wrapped together. Maybe I could then pull in on the other sheet and start the roller furling to untwist the sail and then try to roll the drum the other way with the furling line to furl the sail into a smaller package and stop the flogging.

I released about eight feet of the port upwind sheet and went to the starboard sheet and pulled. It came in about six feet. I thought I could then try to put the furling line around the winch and try to roll that amount of the furling line back onto the furling drum and that way roll up some of the flogging sail.

I wrapped the winch with four turns of the furling line and watched forward with the flashlight how the sail might be rolling. It seemed the furling line pulled in a few turns of the drum so I did some more. Then the winch made that sound when you know it is working too hard, any more tension would surely break something.

I looked back down at the winch. It had become completely entangled, wrapped up and stalled. The free end had somehow gotten under the line that was being pulled in and wound tighter

and tighter. There was no way I could get that mess unwound. The winch only turns in one direction and the line was forced on there so tight, nothing would move.

I was "Triple Wrapped". And I was in trouble.

## Save the Sail

With more than three hours until daybreak, I had to do something to reduce the genoa sail to keep it from flogging and damaging itself or other equipment. I really needed that sail to get me to Australia. There I could take it down and have the UK sailmaker make any repairs or reinforcements needed.

But first I needed to get somewhere calm to be able to work on getting three different wraps undone.

On the plotting chart I saw I was very near a small atoll, Karoraina, which was only four or five hours away if I changed

course slightly to the northwest. The wind was from the ESE and a heading slightly more west by only 10 degrees would put me near the southeastern point of this small atoll ringed with dangerous reefs.

I had hoped to find some calm seas on the lee side of the atoll and, if the land or trees were high

enough, even find some protection from the wind. There could also be a place to temporarily anchor to be able to work on the 3 wraps in calm conditions. Possibly even a short sleep or just a rest before moving on, alone to Samoa, still more than a week away

I headed for the southeastern end of the island atoll and hoped for steady winds. I didn't get them.

As daybreak neared, I could see a line of squalls behind me. They were big and nasty looking with plenty of strong winds and pelting rain.

The trade winds were 18-20 knots steady from the ESE. The problem with a squall is, as it nears the boat, it develops its own winds from the sucking up of the higher pressure surface winds up into the clouds and the lower pressure above. This is a circular





pattern around the base of the cloud and the winds are strong. If the rain filled squall cloud passes straight over the boat from behind, the wind is from behind you. If the squall passes you along your southern side, however, the winds increase from that southerly direction.

That was the case with the three large cloud formations I could see behind me in the distance. Because I had turned the boat slightly northwest to change my course more westerly towards the Karoraina Atoll, the squall cloud formations would pass over me but slightly to the south.

When the first squall hit, it had winds of 28 knots directly from the south. In order to try to keep heading straight downwind to keep the genoa sail from flogging, I had to change my course more northerly. This kept the wind pressure on the sail at a minimum and also kept most of the sail behind the lee of my staysail. When the squall past after a few minutes, the winds subsided back to 18 knots and again from ESE.

But I had gotten off course and was headed now directly towards the east shore of the atoll. I had to back my course more southerly in order to compensate for the push to the north under the squall.

If the next two squalls came from the same direction, I would be pushed into the reefs surrounding the atoll. I needed to try to keep the boat headed as downwind as possible in order to reduce the flogging of the sail, but I also had to keep slightly south of the atoll in order to pass it safely to get to its lee side and some protection.

The next two squalls behind me would tell me, when they got near, if they intended to do me harm or leave me in peace headed for the southern point of Karoraina.

The second squall was exactly behind me. When it arrived with 28 knots of wind, it was only slightly south of me and I only had to correct to the north by about 5 degrees. But the wind and rain lasted much longer than the first, so I came a few miles off course again, headed for the eastern shore of the atoll. This was getting dangerous!

If I wanted to save the sail, I had to keep the bow of the boat headed directly downwind. If I turned even 10 degrees into the wind, the sail would go into an uncontrollable frenzy and whip and flog itself to death. But the reefs of this atoll would tear the boat to pieces and I would be stuck on an uninhabited atoll in the middle of the South Pacific Ocean a thousand miles from the nearest inhabited island and off of all shipping lanes. Daniel Defoe already wrote the novel *Robinson Crusoe* and there wasn't a market for a similar book. Let's stay off the reef!

If the third squall passed me to the south, I would have to turn into its winds and destroy my beloved genoa sail and

possibly damage my entire rigging. But it was better than going aground on a lee shore of rocks and reefs.

I raced the squall to the Southeast corner of Atoll Karoraina, in slow motion.

## *Atoll Karoraina*

I barely made it around the southern tip of the South Pacific Atoll Karoraina. The wind and light rain was just becoming apparent when I was far enough west of the reef that I could turn up to the northwest towards the lee of the small island. I was just in time. The winds increased to 30 knots and the rain was strong.

I moved the boat close to the reefs and moved very slowly. Using Polaroid glasses I could see a very definite color difference between the very deep ocean surrounding the island and the reefs. There was a well defined line of dark blue (deep) and then various lighter blues and greens mixed with browns of the shallow reef. I had never seen such a well-defined reef line.

There is a reason. When you look at the photo of the chart depths surrounding this atoll, they are very deep. The depth lines go from 13,000 feet to 9,000 feet within a mile and then again to 6,000 feet depth less than a quarter mile off the island. 6,000 feet deep a quarter mile off the island – I had to repeat that.

Where was I going to find anything for an anchor to hold onto? I began looking. I saw a small inlet between two small islands. It was very shallow but maybe there was some loose sand or smaller rocks just off the edge. I eased the bow to within just a few feet of the reef and looked at the depth gauge. There was NO reading. The gauge doesn't read deeper than 400 feet. It was more than 400 feet deep just a few feet behind the bow which was at the edge of the reef.

My bow was almost on the reef and the depth transducer only a few feet behind had no reading. I went up and down the coast trying to find a spot that showed some form of color change just inside the dark blue of the deep water and greens of the reef. I thought I found one between two spots of reef with about two boat widths between. I went to the bow and let out the anchor just enough so that it hung down from the roller. If I was going to try to snag something for the anchor to hold on to, I needed to move the bow up near where I wanted to drop it, put the engine into reverse and then neutral to keep her in one spot, run forward to the anchor windless buttons and drop the anchor as quickly as the chain would pay out.

I tried once, but before I could even get to the windless controls, the boat had drifted back because of the wind pushing her away from shore. I didn't have cockpit controls for the windless; they were up at the bow.



I wanted to look at the ocean floor near the reef. I was alone so I couldn't just leave the boat and swim around with a mask. If I had someone else with me, I could have tried to put out an anchor and some chain in the dinghy and actually place the anchor upon a part of the reef that looked like it could hold for a few minutes.

I came up with another idea. I would back the stern up to the edge of the reef line between the two outcroppings and put on a mask and look out over the transom into the water. I put the tether on the harness I always wore and clipped it into the stern rail, then backed the boat almost to the edge of the reef, just out of reach of my rudder. I crawled out over the swim platform and put my whole head and shoulders under water leaning way out over the edge of the boat still holding onto the swim platform hand grips.

The reef seemed only inches from my head and only a few feet from the rudder. Directly under me was a huge boulder

and then black nothing. There was no way an anchor could find anything to hold onto or if it did wedge itself between boulders, I could never get it out and would have to leave my good Delta anchor and a lot of my 200 feet of  $\frac{3}{8}$  inch chain there on the reef.

I couldn't anchor. How else was I going to find some calm water and winds other than very near the reef and just behind the trees? Only a half mile off the reef the winds were there at 18 knots and the swell would wrap around the point making it difficult for me up on the bow.

I tried twice to get the boat as close to the reef as possible and behind the wind protection of the trees on the little island. I then let her drift downwind away from the atoll. I only had a few minutes until I would again be in the winds and a swell. I needed some calm to try to unwrap the sail, undo the knots and get the furling line untangled.

The first two attempts solved nothing, but on the third attempt I was successful in releasing enough tension on the

Karoraina Atoll





furling line wrapped around the winch that I was able to remove the top part of the winch nut and self-tailer and remove the whole top of the winch. This let the furling line loose. I had one of the wraps undone.

Then I tried to go forward to the bow while the boat drifted from the calm near the reef slowly out into the open sea. I needed to get to the genoa sheets knotted together near the clew of the sail. In two attempts I was able to bring both sheet ends up to the bow from the stern winches and tie them in two handy bundles. I was able to bring the line bundles up and around the whole genoa on the forestay thus unwrapping at least some of the congestion. But there simply was not enough time for me to finish before the boat was again attacked by wind and swell.

I somehow needed more time in calm conditions. I don't run very well along the side of the boat and I have very poor balance when I don't have anything solid to hold on to. I am completely paralyzed from below both knees and my feet do not have feeling nor do they move on command. They just stand there looking up at me while I am losing my balance and falling over. Not only that, but the sheets knotted together were at least eight feet above the deck and I can't climb up the forestay without someone else hoisting me up in a bosun's chair. I was alone, nobody to help.

The next thing I tried that could give me more calm time was to head back north along the well defined reef, turn around and head the boat back to the south end of the island. That was about a mile and could give me enough time to get the things I wanted done up at the bow before I got into the winds and swell again.

I put the engine at just above idle and once I was on a good heading just a few yards off the reef, I pushed "Auto" on the autohelm. I ran to the bow to try to untangle the sheets and the wrapped genoa. I made a little progress now that the tension was off the furling drum but I still needed to get up to the knots at the clew 8 feet above – and I'm only 6 feet tall.

I needed two more feet. Down in the salon, there is a sliding bench at the dining table. I unbolted it and brought it up to the bow. I tied it down and thought I could stand on it long enough to get the knots undone but I needed calm water.

I got everything prepared with some tools for gripping the rope and a place to clip my tether around. I went through the whole procedure again: heading north, turning around at the reef, setting a course just a few yards off the reef, idle slowly forward and then hit 'Auto'.

I ran forward as fast as I dared, climbed up on the bench and, with pliers and grips, started working on the knots, always looking ahead to the reef. I had gotten more than half the knots undone and was just about finished when I looked again to the

reef. We were too close and closing fast on a small outcropping of a different color than dark blue. I only had one more rope knot to pull apart and then it came undone.

The sail was free.

I stepped off the bench and started to run back to the wheel but I crashed to the deck. I had forgotten to unclip the tether from my harness to the pulpit. I reached up and unclipped it and started to crawl, then run back to the wheel before we hit the outcropping near the reef. When I got near the standing rigging at the mast I had to maneuver around the stays.

I slipped. I fell, in slow motion, down onto the deck and bounced out under the lower lifeline. My head, arms and shoulders were out over the water and I knew I was going in.

But something stopped me from continuing into the ocean. I was stuck. I was headed straight down with my head and shoulders but my legs were somehow keeping me from sliding further. I tried to twist around and see what was holding me but I couldn't turn. I reached up to the toe rail and got a good hold there and pulled myself around enough to see that my left leg was wedged between the mast stay and the lower lifeline.

It was in a weird, contorted position and I knew it ought to hurt like crazy. Because my legs are paralyzed, I don't feel anything, so I continued pulling myself up and finally got back on deck. I crawled on hands and knees back to the helm and hoped I would be in time to maneuver the boat away from the approaching reef.

I wasn't.

I was at the wheel grabbing for the throttle and hitting "standby" on the autohelm, when I heard a screeching sound along the port side under the waterline along the hull. It was loud, but didn't slow the boat or move it in another direction. The boat continued forward until I eased her away from the reef. I was not aground and I was not sinking.

And I had gotten the three wraps undone. ■

**Read more of Mike Harker's adventures in next month's Yachtworld.com Magazine.**

