

EXTRAORDINARY

The Atlantic with no compass and no watch !

In april 2003, two 53-years-old adventurers from the landes region of France, Emmanuel and Maximilien Berque, made an extraordinary Atlantic crossing aboard a tiny outrigger canoe with no documents an no navigation instruments – a fabulous astronomical experience. After 27 days sailing and 3000 miles, they made a precise landfall on the small island they were aiming for.

In 1995, we crossed the Atlantic aboard a small varnished wooden boat, 4,25 m long and rigged as a lugger. We had no radio, electronics, EPIRP, liferaft or motor, (the latter being an important detail).It was an very long voyage, from the French coast to Miami and we visit about hundred islands. We reached the USA just like the conquistadors in days gone by. We wanted to do better.

A long time before Columbus or even the Vikings, about 3000 years ago, there were the Phoenicians and the Greeks in the Mediterranean and the Maoris in the Pacific who had been everywhere in the Pacific. How did they navigate without compass ? We have always been of the opinion that in life, it is not enough to read history or adventure books. There comes a moment when we wonder how we ourselves would compare to these fabulous heroes from the past, without our technology.

We have been passionately interest in astro-navigation for more than 30 years now, and wanted see how accurate a landfall we could make after a long crossing without instruments.

We decide to do this aboard a small proa we had designed, a reference to the famous Maoris who had to sail aboard enormous heavy displacement catamarans, 20 to 30 meters long, sometimes even longer... As for the rig, we chose a schooner/lugger configuration as we needed the most original boat as possible...We designed our prototype using a computer programme we wrote ourselves, in BASIC programming language, that had take years to perfect. We Then set about building in the loft of our old house in the “Landes” region of France, using our basic woodworking tools ! A year later, we had to knock part of a wall down to get it out into the garden.

It weights 300 Kg and its main hull measures 6,5m, with a beam of 80cm, 90cm deep and a draught of 30cm.The 5,5m x 35cm outrigger is attached to the

canoe by two flat cross-members in Finnish fir and the whole is 3,6m wide. The two hulls are built in red cedar, for the lightness and the boat is varnished for aesthetic reasons. It is, in fact, completely covered with glass fibre, inside and out, with no bubbles to mar the transparency ! A crazy amount of work ! But although our outrigger canoe is small, it is a real gem, and we are very proud of it.

As training, we lived aboard and sailed about around 500 miles on the Bassin d'Arcachon, in the middle of December 1998, when the temperature varied between -5°C and -10°C ! To raise some much-needed money for the trip we wrote the story of our crossing aboard the 4m boat: "Les mutins de la mer" published by Robert Laffont. We then continued to perfect our astronomy and in July 2002, we set off at last !

From Contis, on the Landes coast to Lanzarote, we had terrible weather and didn't see the sun for 17 days ! Along the Portuguese coast, we had very strong winds, up to force 9 according to some, and huge waves that we surfed from a practically vertical take-off ! Fortunately, we had instruments and charts for this part of the trip. We understood that we could never go at the speed of our much too uncomfortable little boat, which was nonetheless capable of a 10 – 12 knot average, on a daily coastal cruising basis. We had to recognise that we had made the classic mistake to meet someone in Arrecife on a precise date that we had to respect, which meant we could not choose our weather conditions... The trip formed 1300 miles of extra, very beneficial, testing and familiarised us with the basic speed of the boat.

According to our previous southerly crossing, the theoretical distance was around 3000 miles. By allowing for a more modest average speed of 5 knots, and a 30° deviation from our course, which lengthens the route 15%, it would take us about 29 days, the period of one moon, to reach La Désirade island, near Guadeloupe. This was a good target, only 3km by 10, which we could recognise as we knew it already. We would therefore leave at the new moon so as to arrive at the next new moon to be able to observe the stars well in the black sky...

On 31st March 2003, we set off from Arrecife in light weather, convinced we were going to reach our objective. This crossing was so well prepared over the last few years, that we set off incredibly quiet, as if we were just going to the cinema ! For 30 days and two people, we embarked 90 litres of water, 16 Kg of 'gofio', 8 Kg of sugar, 8 Kg of powdered milk, 30 bottles of Tabasco, 90 tins of sardines and 1,5 litres of vinegar, plus salt and some pepper. That was all ! 'Gofio' is a very cheap kind of flour, found in the Canaries, and is made from pre-toasted maize which is then ground and can be mixed with practically anything... We had no cooker aboard, as it would have taken up too much space.

The first day, we were becalmed and spent the first night hove-to off Fuerteventura. Fortunately, the north-easterly wind got up, and we began the

second night under a clear sky , heading south west with the wind dead aft and the sails goose-winged, at 10 – 15 knots. Not for long, as the sky clouded over in the middle of the night and we could only pick out the odd star. Steering at that speed with no compass is dangerous and much too wet. We decided to reduce sail; if we want to go far, we would have to look after our little boat... The next day, the islands were well below the horizon and ***we were out at sea with an immense desert ahead of us and no compass, watch, log, sextant or GPS, no radio, charts or books, not even a guide to the stars ! Just like 3000 years ago. But aboard a 300 Kg boat !!!*** We had planned to head south west for about 10 days to reach the warmth further south. On the third day, we were already exhausted . The wind was blowing at a constant force 5 – 6 and the sea had quickly become rougher. Short, steep swells, from different directions were horribly uncomfortable aboard our ridiculous little boat. It was completely impossible to stand up on the netting. We had great difficulty sleeping as the boat's movement were very lively. As we didn't have a watch, we also had problems managing our watch and rest periods. We were forced to sail slowly, as otherwise the boat shipped lots of water and we only had old oilskins which we tapped up at the bottom to stop our leg getting too wet.

During the day, we steered south west by keeping the sun at 45° on the port quarter in the morning and 45° on the starboard bow in the afternoon. At night the Pole star obviously helped us a lot. When we could see it, as it is always true north, it gave us the azimuth of all the other stars in the sky. In fact, only the stars which were quit low on the horizon were useful. Those that were too high gave us a direction which was too imprecise. Before leaving, we had learned by heart all the stars on the celestial equator, as they rise exactly in the east and set exactly in the west. At the beginning of the night, the west is indicated by setting of Orion's belt, then Betelgeuse in Orion, then it is the turn of Procyon in Canis Minor, folowed by Alphard in Hydra, then Regulus and Denebola in Leo, then, at the end of the night, Spica in Virgo and Arcturus in the Ploughman at daybreak... The night always started badly, we only managed to find the right stars a long time after sunset, and at daybreak it is the same thing, but in reverse: all the stars disappeared for a long time – how long ? – before we could see the sun ! We therefore tried to steer straight by following the direction of the wind or the waves. To indicate the wind direction accurately, we fitted a wind vane on each mast. On the fifth day, the helm became very stiff and we realised that the rudder blade had swung up, the pin was broken. We had to heave-to in a force 6 – 7 and a very rough sea. I had to tie myself on and get into the water to repair it; the boat was moving about dangerously and could easily have crushed my hand... and the hospital was a long way off ! To my surprise, the water was beautiful warm. From that day onwards, we decided to heave-to every day for about an hour, around the solar midday, when the sun was too high in its zenith for steering, to relax a little, dry out, swim and also to film and take photographs. We were not in a race and it was important for us to

arrive in good health... On 7th April we caught sight of the Southern Cross. When it is vertical, during approximately an hour per night, the Cross measures approximately 6°. This gave us an idea of the angles we observed. As the lower star Acrux was approximately 4°, we could deduce that we were at about 22° latitude. We had passed the Tropic ! But after the first week, the weather worsened and the sky became more and more cloudy. The wind blew constantly at force 5 – 6, which was a lot for our small, 300 Kg boat... On 9th April, two butterflies flew past, way out at sea ! We had to stop every night, now, as we could not see the stars, and rarely saw the sun during the day. We tried hard to stay at the helm, but as morale was not high, we often ended up crammed into the Micromegas tiny, damp locker in our heavy weather gear, with the very real impression that we were going to suffocate. Aboard this boat, there is only one 'berth', a trapezium of plywood, 1,7m long, 40cm wide at the shoulders and 20cm at the foot. So for two people...! At dawn, we got under way again as best as we could, under canvassed and furious at not being able to sail faster. We argued with each other and with the sea, which was ugly and foamed horribly. It was so bad that we found hard to believe we were not in shallow waters with a lot of current – in the middle of Atlantic ! Moreover, this made us laugh out loud: certain writers recount that the Maoris could see land just by reading the surface of the water ! They obviously hadn't been there to see if it was true ! From time to time we caught a big dolphin fish, which improved morale and gave us the impression we could survive this hell. We ate as much as we could raw, then kept the rest in salted vinegar. The wind now headed us and backed further and further to the north west. A very long 3 to 5m swell, with occasional bigger series, arrive from America; this worried us and we wondered what was happening on the other side of the Atlantic, as we had no radio to listen the weather forecast on... But we took the opportunity to sail further south, hoping that the next day would bring an improvement. On deck, we shouted 'Accept your concept' as one, to encourage ourselves or sang songs from 'The Three penny Opera' at the top of our voices. When then found ourselves in another cloudy area, where we hardly saw the sun all day long, and it was quite dark. Fortunately, in the morning, we could nevertheless make out a vague glow which showed us where east was; when we caught sight of it, we noted the direction of the wind and the waves and for the rest of the day tried not to zigzag too much whilst hoping that the wind would not change direction. Moreover we had more confidence in the residual swell, as it changed direction more slowly than the wind.

Finally, toward the tenth day, we started to steer more west. In ten more days we would have to take more care with our course. It was imperative that we succeed, as otherwise we would be taken for pretentious and irresponsible sailors when we returned. The water was delicious warm now and swimming cheered us up, however we were very careful, as last time we were followed by enormous swordfishes hours on end. The sky remained covered, and we became

horribly depressed about the success of our experience. We wondered if we were going to arrive a long way from Guadeloupe – where and when ? On the 16th day, at about half-way point, we were nevertheless quite happy. It was time to throw the bottle entrusted to us by the children in our village into the sea. Then we carried on, sitting still and cross-legged constantly, at the helm on this impossible little boat... In addition we were more and more under-canvased so as not to get too wet. We cracked up, miserably: ‘We’re like a 2 CV, we don’t go fast, but we’ll get there in the end...’ We had no more illusions; it was going to take more than 30 days at this rate. On the 19th day, the sky seemed to clear a little; there was blue sky and small clouds. That night we caught sight of the Southern Cross, but not for long enough. We thought that we must be on about the same latitude as Guadeloupe. In the afternoon, the weather worsened. We weathered a few squalls and the sky became completely obscure, which made for some good photographs. We were so disgusted with the cloud-covered sky that we ran before the wind all night and tried desperately to sleep in our horrible little hell-hole. All night we had squalls and strong winds. We kept on repeating ‘Next week, things will be better’ as if it was our leitmotiv. The sky had to clear ! On the 21st night, we glimpsed the Cross again, with, just below, the two stars of the Fly. They seemed to be in right position, and we celebrated this during our daily stop, we opened the only bottle of wine on board. The Basque captain of a cargo had given us it when we left. The weather was improving now, the sea was finally calming down, and there was a light south-easterly breeze. However, the problem was the skin on our backsides was becoming more and more inflamed, as in shorts, we were constantly sitting in the water whilst steering. The nights were very difficult, there were still a lot of clouds and more often than not, we stopped so as to avoid errors in our course.

On the 23rd day, we told ourselves there was only a week left. The sea was very smooth and Max succeeded in finding a sail magic trim we didn’t understand, but which worked with this very light almost southerly breeze. The Micromegas 3 sailed at 2 – 3 knots with the helm lashed; it was wonderful. We could at last sleep a little, and we were dry. We took the advantage of this opportunity to treat our backsides with sardine oil. At daybreak, we set the sails gooswanged and sailed at around 5 knots. The wind seemed to turn more northerly. We had had enough. Our solitude was unending. With no compass steering in straight line demanded enormous care. We were fed up. ‘When are we to arrive ? Where are we going to arrive ?’ or ‘Will we see the Cross tonight ?’ We were now completely obsessed by these three questions. The wind died down again and we succeeded in rigging our ‘automatic pilot’ again: helm lashed, mainsail trimmed perpendicular and the foresail almost aback ! During the night of the 25 April – the 25th day – the sky cleared just at the right moment and we observed the Cross and the Fly. Fantastic ! The two upper stars of the Fly seemed to be half a way between Accrux and the horizon. We appeared to be on the same latitude as La Désirade ! We *must* arrive soon, but when ? We have spent so much time

hove-to ! On the 26th April, we had a fine weather all day with an easterly wind; we were sailing goosewinged at 5 to 8 knots. But in the evening, the sky covered over again, as it had done nearly every evening, and we were fucking berserk again because we lost our precise course during the long twilight. We hadn't been lucky up until now; we had seen very few clear sunrises and sunsets... After the solar noon, the day became horribly gloomy and squalls hit us. That night we hove-to again so as not to sail the wrong course... Fortunately, things improved towards the end of the day and even though we didn't see the sunset clearly, the night was quit starry and we stood all our watches.

SUNDAY, 27 APRIL, 27TH DAY. (Extract from the logbook):

The day looks promising. The sea is calmer. We are continuing under foresail and storm jib, sheeted flat, just in case... Toward midday we lie to the sea anchor and relax, swim, take photographs and film. A real bath. Delightful ! We get under again. About an hour later, suddenly, Max at the helm says: 'There is something on the horizon. It's not a cloud, it's an island !!!' I quickly find the binoculars. It really is an island. LAND !!! But which island ? It is long and flat. We set course directly for and hoist full sails...

We recognise La Désirade. We have arrived. We succeeded. We were right.

In 27 days, the two of us consumed : 65 tins of sardines, 8 Kg of gofio, 4 Kg of powdered milk, 2 Kg of sugar, 49 litres of water and 30 bottles of Tabasco.