

Ocean Challenge Live!—The Vendee Globe
Solo, non-stop, around-the-world race

WEEK

1 Following Your Dreams

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By Rich Wilson, Skipper
Aboard *Great American III*

The Vendée Globe race instructions state simply: start at Les Sables d'Olonne (France), leave Cape of Good Hope (South Africa) to port, leave Cape Leeuwin (Australia) to port, leave Cape Horn (Chile) to port, leave Antarctica to starboard, finish at Les Sables d'Olonne; 26,000 miles, 100 days, solo, non-stop, without assistance, in 60' sailboats.

Thirty sailors—men and women—are entered from seven countries. The fleet includes the best and toughest sailors in the world. They are friendly with and respectful of each other, perhaps because they know that if they have a problem deep in the Southern Ocean, thousands of miles from land, a rescuer

will likely be a competitor, as has happened before.

I have followed this race in the past, but always shied away; it was too hard, too long, and too dangerous. What changed? My attitude. A young boy, in the crowd of thousands on the dock, put it best by simply saying in French “C'est important a participer.” It is important to participate. And that's why I'm here even though I'm the only American, the oldest skipper at 58, and not one of the favorites to win.

Equally important to me is the chance to connect with students and families around the world with this Newspapers In Education program and our website. For me at sea, the science, geography, math, and history will all be living topics. It will be a great adventure. Welcome Aboard!



Love, Act, Discover and Innovate

By Dr. Dava Newman, Professor of Aeronautics and Astronautics and Engineering Systems, MIT

My motto for teaching aerospace biomedical engineering at MIT is “Love, Act, Discover, and Innovate”, and this motto has guided me in my own life.

I grew up in Helena, Montana, and I LOVED learning, sports, and nature. After watching the Apollo astronauts, I dreamt that one day I would explore the world. I ACTED by attending Notre Dame and majoring in aerospace engineering. Afterwards, I went to graduate school at MIT and became a professor. Now I have the dream job of teaching engineering, I have trained astronauts and cosmonauts, and I have flown four space-flight experiments in space.

In our latest INNOVATION at MIT, I have helped create a spacesuit for Mars exploration, a second skin called BioSuit™, which, remarkably, is inspired by giraffes and armadillos.

Regarding the Vendée Globe, I have DISCOVERED that space flight and sailing have much in common. Both activities take place in extreme environments, and as an astronaut or sailor you need to have all of your food, spare parts, navigation, and communications onboard. You must keep your heart, bones, muscles, and senses healthy, and you have to be creative, resourceful and find unique solutions during emergencies.

My dreams have come true. I hope you will dream, love, act, discover and innovate, too!

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2 Marine Transportation

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By Rich Wilson, Skipper
Aboard *Great American III*

Looking at our chart explains the parade of ships that I saw last night by their lights, and heard the night before on our radar alarm. The Vendée Globe fleet intersected, and then joined, the sea route from the northwest corner of France (the entrance to the English Channel) to the northwest corner of Spain.

This sea route connects ports in northern Europe with ports in the Mediterranean Sea (via the Straits of Gibraltar), Africa, and South America. The sea's commerce is the unseen commerce of the world. A large containership may hold 3,000 containers, each container the size of a tractor-trailer on a land

highway. A modern tanker may hold 250,000 tons of oil. Smaller, older, general cargo ships are out here too, carrying a wide variety of goods and resources.

I spoke to the *SEAROSE G*, an 80,000-ton-capacity OBO (oil/bulk/ore) ship, in ballast (no cargo), with 26 Philipinos in her crew. She crossed my stern, bound from Gijón, Spain to Gibraltar for bunkers (fuel) then on to Turkey for dry dock for a month. She appeared on our radar detector first, then on AIS (automatic identification system), then visually.

The Captain was pleasant and I informed him that there were 20 sailboats in his path. I can only imagine the amazing places and peoples that he and his crew have seen in their lives. These tankers and cargo ships connect the nations of the world.



Proper Preparation is Everything

By Dr. Brien Barnewolt,
Chief, Emergency Medicine,
Tufts Medical Center

Proper preparation is everything. On board *Great American III* Rich has an extensive first aid kit, and he knows how to use it. We added to the kit medications that Rich might need if he gets sick or injured: medications for infections, seasickness and his asthma. We can communicate by email or even satellite phone, so if something happens I know exactly what he has on board and can best advise him on his situation.

Rich also took an advanced first aid course, which is a great idea for everyone. He learned how to

take care of wounds and burns, splint broken bones, and how to recognize and treat hypothermia. We also practiced many of these techniques, because you would not want to attempt them for the very first time in the middle of the Southern Ocean on a cold, wet, tossing boat.

Lastly, Rich is a big promoter of preventive medicine. He is in excellent physical condition, watches his nutrition, and has a great plan to get the proper amount of sleep during the race. When conditions are rough, he will wear protective clothing and pads, much like a BMX motocross rider. He even has a helmet! With prevention strategies like these, Rich should rarely need to make a trip to the "virtual" ER.

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3 Equator Crossing

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By Rich Wilson, Skipper
Aboard *Great American III*

For a mariner, crossing the equator – the Line – is a major event.

The tradition for a first-timer is an on-board ceremony where the initiate is degraded before King Neptune, who must pass judgment upon the initiate's worthiness to come into his new hemisphere. Typically, a shipmate will dress as King Neptune, with royal scepter, a crown, and beard, and act as judge, jury, and prosecutor on the worthiness of the supplicant.

The tradition is taken seriously by mariners and aboard commercial vessels, too. When I was aboard the huge containership *New Zealand Pacific*

(after our rescue by them off Cape Horn, Thanksgiving Day, 1990), and en route to Europe, those merchant mariners in their crew who had not crossed the Line before were smeared with bilge oil and grease in their hair. In our 2003 Hong Kong-New York passage, my shipmate Rich du Moulin, an initiate, ended up with a more modern version, granola and milk in his hair!

Either way, the intent is serious: to give King Neptune, who rules the seas, his due respect. And it is a way for us at sea to remind ourselves that we are not in control out here – it is King Neptune, with his winds and waves and currents, who rules. For us to be safe, we must respect the sea, and an equator-crossing ceremony is a symbol of that respect.



Dead Reckoning


by Dava Sobel,
Author of *Longitude*

Skipper Rich will soon cross the Equator, 0° latitude, the great dividing line between Earth's northern and southern hemispheres. Having traveled from 46°30'N at the start, he will go as far as 56° south, below the tip of Cape Horn. As he circumnavigates the globe, he will also travel through the full 360° of longitude.

Fortunately for Rich, his navigational equipment keeps him constantly informed of his precise position. Earlier sailors had to rely on a mixture of guesswork and hope to do that, and only rarely figured out exactly where they were.

They could tell their latitude easily enough by the height of the sun or known guide stars above the horizon – in clear weather, at least. But longitude always posed serious problems. The most popular means, known as dead reckoning, called for a log on a knotted line to be thrown overboard. The navigator, using a sand glass to time how quickly the line paid out, gauged the ship's speed along its course. Then he factored in the effects of ocean currents and winds on their progress, to estimate a position east or west of homeport.

Not until the end of the 18th century were the necessary instruments – the sextant and the chronometer – invented to determine longitude at sea.

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4 Environment: Water & Air

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By Rich Wilson, Skipper
Aboard *Great American III*

What better symbol could there be for the interconnectedness of the world than the Vendée Globe, a non-stop around-the-world sailing event? As a skipper in the race, I can see that each salty wave is connected to the next in the Atlantic, Indian, and Pacific Oceans. The same interconnectedness is true for every breath we breathe.

These global connections show that pollution from one place, whether it is water or air pollution, can end up in any other place. We are all responsible for the environment of our neighbors—be they next door or around the world—and we should be aware

of the waste we create and how it might affect other people (and other life) on the planet. With awareness comes understanding and action.

My friend and rival Raphael Dinelli, sailing *Ocean Vital Foundation*, has an intriguing wind charger aboard his vessel and new thin solar panels covering his boat. These may allow him to sail around the world without ever turning on his gas-powered generator, thus using no fossil fuel at all. It is a worthwhile goal.

In the Vendée Globe there is a race rule requiring the competitors to keep all their garbage aboard their boats for proper disposal at the finish. In the absence of universal morality, regulation is needed for our common good.



Asthma at Sea

By Dr. Chris Fanta
Brigham & Women's Hospital

While the challenges that Rich Wilson and the skippers of Vendée Globe face are enormous—managing a large sailing vessel by yourself, day after day, without break, and without a “time out” for bad weather—Rich Wilson has another obstacle to overcome that may not be shared by other skippers. Rich has asthma.

Asthma is a very common disease. In the United States approximately seven million children under age 18 have asthma, and an additional 16 million adults have the disease. In asthma, the breathing tubes in the lungs can become narrowed in two ways: (1) the bands of muscle that encircle the tubes

squeeze down on the tubes, and (2) the tube walls can swell and fill with mucus. The result can be difficulty breathing (like breathing through a narrow straw), tightness in the chest, and wheezing.

So how can Rich Wilson, who needs to be capable of peak performance at any moment, avoid an asthma attack while circumnavigating the globe? The key is prevention. Rich takes several asthma medicines every day to prevent asthmatic reactions in his airways. Periodically, Rich will take additional medicine (a bronchodilator inhaler) before strenuous exertion. This medicine keeps the muscles from contracting in response to exertion.

Lastly, since Rich is far out to sea, it is unlikely that he will experience asthma attacks caused by pets, cigarette smoke or air pollution.

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5 Invisible Places

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By Rich Wilson, Skipper
Aboard *Great American III*

In this race around the world, we will pass many places and peoples.

Some will be nearby, as were Spain, Morocco, and the Cape Verde Islands. Others will be very distant and far over the horizon, as will be South Africa, Madagascar, Australia and New Zealand.

In spite of their distances from *Great American III*, these places stimulate my imagination. What are the people like? What are the places like? What is the terrain of each country? What kind of weather is dominant? What variety of natural resources do these places hold? What forms of government do they have? What styles of food do they eat?

In the United States, one can identify regions

with distinct differences: the northeast, south, southwest, west, mid-west, northwest, etc. In spite of the differences between regions we are all Americans, and we embrace and honor these differences within our society.

On a larger scale, we are also citizens of Planet Earth, and we should embrace and honor the differences among peoples, cultures and places worldwide. As we have come to travel extensively within the US, so should we try to travel extensively outside the US to learn firsthand about the rest of the world.

Out here, we are always sailing past invisible places. Although glad to be in the race, I know that I am missing a lot, and vow to visit many more countries afterward.



Invisible Places

By Captain Eric Wallischecke
US Merchant Marine Academy

Although Skipper Rich refers to the land that he is passing as “invisible”,

I think it really is the ocean that is invisible. A whopping 360 million square kilometers of the earth’s surface is covered with seawater, yet at most we can see 2.4% of the oceans from all the world’s shorelines.

Thus, with so little of the ocean being visible from the shore, it seems like it is the ocean that is invisible; not the land. And since we cannot see Rich from the shore, maybe it is he that is invisible, too.

It’s not easy being “invisible” to others, since humans are social beings. We like to spend time

with our family and friends. Spending long periods of time away from others can make you lonely and sad. In the early days of ocean travel, voyagers spent months, even years, away from their homes, communicating only by mail. Babies were born, and people died, while their family members were isolated in the middle of the ocean.

Fortunately, Rich has access to the Internet, so he can stay “visible” to us. We can ask him questions, and follow his progress. He can talk to family and friends, follow the news, and get football scores. So, while he may be in an invisible place to us, we can see him and he can see us.

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6 Antarctica

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Next Week:
Climate Change



**By Rich Wilson, Skipper
Aboard *Great American III***

The turning mark in the Vendée Globe is Antarctica. We will not see this cold continent as we circumnavigate it, but we will be affected by it.

Already we have passed Ice Gate #1, located to keep the fleet north of icebergs drifting out of the Weddell Sea. Six more ice gates across the Indian and Pacific Oceans serve a similar purpose. When the Southern Ocean's low-pressure systems hammer the fleet, they will do so with strong winds, big seas, and with frigid air spinning clockwise and north from Antarctica.

Many failed expeditions to the South Pole have proved it a brutal, inhospitable place. Yet it is also a

place that reveals great courage and leadership, as with Sir Ernest Shackleton's legendary expedition.

Diplomatically, the Antarctic Treaty, which reserves the continent for scientific research and prohibits mineral exploitation, is a fantastic example of how people can cooperate internationally when they act as planetary citizens. Research conducted on this massive continent revealed the ozone hole in the earth's atmosphere; information on global warming and the planet's past climate comes from studying Antarctica's ice cores; and the seas surrounding the continent are teeming with penguins, birds, krill, and phytoplankton used for scientific study.

Although sailing past this time, I want to visit Antarctica some day, to see the white, to feel the cold, to experience the bottom of the world.



The Southern Ocean

**By Sam Scott, Associate Curator
Peabody Essex Museum**

Turn your globe on its head so that the continent of Antarctica is at the top. Notice the ring of ocean that encircles the continent. These waters are known as the Southern Ocean, and they have earned the deep respect of mariners for generations. Wind and wave move unimpeded all the way around the globe causing sailors to name the regions south of 70 degrees latitude the Shrieking Sixties, Furious Fifties and Roaring Forties. In addition to strong winds and massive waves, there are also icebergs with which to contend. Rich will be sailing into these waters as he rounds the Cape of Good Hope and turns the bow of *Great American III* for the long run eastward.

For much of the long passage toward Cape Horn, the closest continental land mass to Rich and *Great American III* will be Antarctica itself—the coldest, windiest and driest place on earth. Human contact with Antarctica began in the 19th century, and the long difficult journey across the Southern Ocean to this cold continent delayed a sustained human presence there until the 20th century.

The Antarctica Treaty System, begun in 1959, prevents any nation from claiming territory on the continent and promotes international scientific research. Long thought to be far beyond the reach of human impact, Antarctica is now seen as one of our best barometers for measuring the pace and magnitude of global climate change.

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7 Climate Change

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By Rich Wilson, Skipper
Aboard *Great American III*

In the last two days here in the Indian Ocean, we have been hammered by two severe storms with near-hurricane-force winds and mountainous seas. I'm tired, cold, and scared. But it was my choice to enter the Vendée Globe, and it is my responsibility therefore to deal with Mother Nature as she is.

In an analogous, moral way it is up to humankind to deal with the Earth's climate as it is, and not to allow our activities to change it. Sadly, we have violated that moral truth by causing global warming.

Since we are on a path of climate change, what is our responsibility now? I believe that it is to say,

“OK. We caused this problem, and we must do something to fix it.” Now we must have enough strength of character to make sacrifices for the betterment of the planet and of the 6 billion humans on it. We must slow and then stop this manmade climate change.

We in advanced economies and developed nations can often buy our way out of problems. We tend to think, “It's going to get hotter? Turn on more air conditioning!” Unfortunately that approach will only worsen the problem. And the underdeveloped nations of the world, who live more closely than we to nature, and therefore depend on nature staying consistent, will suffer the most. And it is simply not fair for us to change their environment.



Antarctic Ice Shelves

By Jan Witting, Faculty
Sea Education Association

Rich is alone in an endless landscape of waves, traveling the world's oceans with occasional sightings of seabirds, flying fish, and whales. For me, as a sea-going oceanographer, the ocean always looks so much bigger than we humans that it is difficult to believe that we could somehow change it. But we can, and we are.

So what kind of changes can be felt out there on the high seas? Well, global climate change and warming temperatures have done some things that are quite visible. Let's take the Southern Ocean, where Rich is now, as an example.

The big ice shelves surrounding Antarctica have started to break up during the past years. These huge plates of thick, floating ice are hundreds of years old, and they are big enough to see from satellites. The most recent shelf to break up is the Wilkins Ice Shelf, and it broke up just this past spring. As big as the state of Connecticut, this shelf broke apart into smaller bits and is floating away slowly out to sea.

There are many other changes oceanographers worldwide are keeping an eye on. Some examples are the rise of sea level, changes in the ocean currents, and ocean acidification.

Earth really is the ocean planet, so if you think about it, global climate change will be felt in the oceans, too.

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8 Teamwork & Perseverance

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By Rich Wilson, Skipper
Aboard *Great American III*

The day before the start of the Vendée Globe I saw Yann Eliès riding on his bike, standing on the pedals, with his young daughter on the seat behind him. Kind and cordial as always, he introduced me to her.

A few days ago, the physicality of this race came home to the fleet in a horrible way when Yann was swept down the foredeck of *Generali* by a wall of water, fetched up on some piece of equipment, and broke his thighbone. Somehow he crawled back into the cabin and alerted race officials and the race doctor.

Race officials alerted Australian Rescue Services. They immediately detailed a frigate to depart Perth for Yann's position with a medical team aboard. Race officials also alerted *Safran*/Marc Guillemot and *Roxy*/Samantha Davies, both competitors, to divert

Because of Yann Eliès' serious injury and remarkable rescue by the skippers of *Safran*, *Roxy* and the Australian Navy, we've decided to make this week's topic Teamwork & Perseverance and next week's topic Midpoint.

from the race and to head for Yann's position. They diverted immediately, as it is the unquestioned tradition of the sea to go to the aid of a mariner in distress.

Marc arrived first, circling *Generali*, trying to throw water and medicine down the hatch, and talking constantly with his friend Yann by VHF. The race doctor had specifically detailed the purpose of Marc's proximity to be emotional support.

Two days later, the frigate arrived and within hours had Yann stabilized, off *Generali*, and onto the frigate where the medical team awaited. All the players worked together, fulfilled their roles, and a good outcome was achieved.



Overcoming Physical Limitations

By Marti Shea, Select Fitness

When Rich started the race, he had a fitness plan in place to maintain his physical strength. When he broke his rib early in the race that plan evaporated. Instead, it was replaced by a plan to limit Rich's movement to allow the rib to heal quickly. Will the residual affects of the broken rib be a loss in overall strength and compromise his performance on the boat? The answer to this question, I believe, is no.

High-level athletic achievers like Rich Wilson have certain traits that make them successful. These traits include tenacity, perseverance, focus, dedication and the ability to make sacrifices to reach their goals. Rich has endured excruciating rib and back

pain. He has not quit. He has not given up in the face of immense adversity.

The lesson we can all learn from Rich is that success can be achieved by having a dream, setting goals, working hard to achieve those goals, being confident, and not giving up. He has prepared himself for the race mentally, physically and emotionally. When his body broke down, his mind took over.

As the race continues, Rich will find the physical strength to continue on because of his mental and emotional strength. Rich is enjoying this remarkable voyage, and he is equally enjoying sharing with all of us his dream. Rich now is leading by example, and this example will give others the courage and faith to strive to achieve their dreams.

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9 Midpoint

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By Rich Wilson, Skipper
Aboard *Great American III*

The midpoint of the voyage, estimated by time or mileage or geography, offers a symbolic chance for reflection on what we have accomplished, or not, and what we have still to do.

Our goals are two: on land, to create a global school program off this global event; and at sea, to finish the Vendée Globe.

Internationally, we were not able to turn initial interest by Newspaper in Education (NIE) programs in 25 countries to their publishing this series. In the United States, however, we have a record 50 newspapers, from large to small, publishing our NIE series and distributing it to schools. Via personal teacher

networks, we have schools in over a dozen countries using the program, and in the United States via an online content partnership with Thinkfinity.org we have a broader reach on the web for sitesALIVE.com than ever before.

At sea, we are still in the race, although back in the pack. We knew this latter would occur, because *Great American III* is an older boat and she has an older skipper. We are not at all disappointed in our placement in the fleet. We have solved problems, and not, and we have made good and bad sail maneuvers and weather-routing decisions.

From the midpoint, emotionally, we'll be sailing home, but Cape Horn still lies ahead, and the Horn may be the real emotional midpoint.



Women in the Maritime Industry

By Laura Mirabella
Shipping Broker

The maritime industry can be a challenging and rewarding field for women.

Thirty years ago it was difficult for women to break into this industry. In today's world more and more woman are moving into principal positions. As a female broker, while I see that many women work in this business, especially in Texas, I believe that the industry still has much to do to recruit and involve more women. If you are a woman and work in this industry, it is important to be tough and to understand the phrase "It's business; it's nothing personal." This business is a difficult, challenging, 24/7/365 profes-

sion. The hours are long, and you have to be available at any time—even during Christmas dinner.

Women in every industry are working hard to "make it to the top" and to be treated as equals regarding salary, responsibility, and career advancement, and the maritime industry is no exception. As Rich Wilson and the rest of the skippers are demonstrating in the Vendée Globe, it is important to not let people discourage you from pursuing your goals, even though they may seem scary and uncertain. It is good, and often important, to try a position that you know will be challenging. Just remember that your mind and body are strong, and persistence will pay off—just keep trying.

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10 Wildlife

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By Rich Wilson, Skipper Aboard *Great American III*

Halfway around the world, through the Atlantic, Indian, and now Pacific Oceans, we have seen a diverse array of wildlife.

Porpoises have played in the bow wave, flying fish have leapt onto the boat, and unlucky squid have been washed onto the deck by errant waves. Birds are everywhere; we've seen petrels, terns, and now the inspiring albatross of the Southern Ocean. With a wingspan of 9-10 feet, they glide effortlessly, almost never flapping their wings, and are the royalty of the air.

On previous voyages, we've seen whales off South Africa, and sharks in the tropics. And here now, when a wave sweeps the deck, it leaves behind

dozens of minuscule shrimp, each about 1 centimeter long. Last night, a small gray animal made a hasty exit from the surface as we approached, leaving only a whirlpool.

Each species we see at the surface is amazing in its own way. Beneath the surface more species are being discovered to add to the thousands known. Sadly, all are threatened by pollution, global warming, and overfishing.

What an embarrassing legacy. Still, as we did with the ozone hole and CFCs, perhaps we can organize globally to save the oceans and make them vibrant again. Individually, we can join a group, make a donation, or write a congressman. As the young boy said to me in Les Sables d'Olonne, "C'est important a participer."



Learning from Animals


By Ioannis Miaoulis, Director and President, Museum of Science

Rich's Ship Logs reveal an extraordinary variety of marine life including sea birds, porpoises, flying fish, tiny shrimp, and squid. As Rich mentions, the aerodynamics of the albatross and the agility of porpoises are amazing.

We can learn a lot from these animals about science, engineering, and our world. Animals have already solved some of their own engineering problems through evolution. For example, I learned while on a snorkeling trip to the Great Barrier Reef that the sea anemone has evolved into an ideal shape and size for filter feeding. It is engineered to retrieve its food without being swept away by the current.

When the Museum's visitor attends one of our animal presentations, and they explore an alligator, a great horned owl, or a hedgehog, they are engaged; they are learning. They observe, experiment, and conclude as scientists do. The Museum's 3-D Digital Cinema lets visitors swim with a whale shark, a great white shark, and more. In the upcoming *Frogs: A Chorus of Colors* exhibit (February 13-May 25, 2009), visitors will learn about the remarkable diversity among frog species.

So while we can't all sail the world's oceans to see wildlife like Rich, observing wildlife at home or at a museum can teach you a lot about your world.

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11 Forces of Nature

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**By Rich Wilson, Skipper
Aboard *Great American III***

Take a globe. Center it in your gaze at 15° South latitude, 155° West longitude. Look at all that Pacific Ocean!

The Pacific is huge, and down here in the southern part powerful low pressure weather systems keep marching along, circling Antarctica like beads on a necklace, pushing big waves, winds and currents in front of them.

A different, but similarly huge, oceanic force is in the North Atlantic, where the Gulf Stream moves massive volumes of warm water from the Gulf of Mexico, around Florida, up the east coast, and across the Atlantic, heating northern Europe to temperatures

far more moderate than we have at the same latitude in North America.

Volcanoes are powerful forces of nature, too. In the Pacific, the volcanic islands of Hawaii rose up from a “hot spot” in the tectonic plates. On the sea charts, one can see a string of sub-surface mountains that didn’t quite make it to the ocean’s surface to become islands – these are called seamounts. In 15,000 feet of water, we passed a seamount a few days ago that rose to within 25 feet of the surface – now that’s a mountain!

It’s logical to feel very small in the face of nature’s enormity, but mankind still has an effect on nature. We should minimize our impact so that our relationship can remain in the realm of awe.



The Gulf Stream

By Captain Murray Lister

Nature gives the world so many variations of force and climate. Think of the tides, rain, snow, wind, ice, hurricanes and typhoons. Let us now consider the forces involved in those of the ocean currents.

For the United States there are two main currents: the Gulf Stream coming from the Gulf of Mexico, and the California Current in the vicinity of San Francisco and Los Angeles. These ocean currents are created by the rotation of the earth.

The better known of the two is the Gulf Stream which flows westward through the Caribbean Sea, thence northeast past Florida, up the east coast of the US, and eventually completes a full circle of the

Atlantic Ocean, returning to the Caribbean.

The forces involved allow this initially warm water to drift thousands of miles, to the extent that because the water temperature is still above freezing, even around the United Kingdom and the coastal regions of Europe in winter, there is no sea ice and thus all the ports in those regions are able to remain open year-round.

In the sailing ship days, once sea current forces were recognized, mariners used them to their advantage when making passage. Even today in motor ships, captains may utilize currents to allow quicker passage time to the next port so they can arrive earlier than scheduled and reduce the consumption of expensive fuel.

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WEEK

12 Resource Depletion

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By Rich Wilson, Skipper
Aboard *Great American III*

Each boat in the Vendée Globe is an example of resource management and depletion. We bring food, fuel, spare sails, spare electronics, extra epoxy and fiberglass, spare rope, etc. Gradually, over the course of the race, these resources are consumed. Food levels decrease; repairs use up epoxy; electronics fail; ropes fray from chafing; and solar panels yellow and produce less electricity. Every skipper has to carefully manage his or her resources to last.

Planet earth has depletion issues, too, and we must carefully manage our resources. The fossil fuels (oil, gas, coal) are being used up, and fuel emissions are depleting our fresh air and increasing global

warming. Many fresh water lakes and rivers have been polluted, thus depleting their availability. Forests have been depleted either to provide wood for building, or in some cases, the land is cleared to provide space for building. In the oceans, fisheries have been over-fished, and only rarely are there adequate resource management programs put in place to allow replenishment.

All of these circumstances boil down to the same thing: we've over-used many of our resources, and now we need to change our way of living. Ultimately, this will be a good thing, as it will push us toward more renewable living. That will be good for future generations, and it's our moral duty to think of those generations and not just our own.



Sustaining Our Fisheries


By Dr. Ambrose Jearld, Jr.
Fisheries Biologist, National Marine Fisheries Service, NOAA

As Rich sails across the world's oceans he may see occasional sharks or whales, but he will not see the thousands of fish species living in the waters far beneath his boat — many of them species that you and I eat for dinner. Fish is a growing source of food for people around the world, but as more people eat fish and the technology to locate and catch them improves, many species have been depleted (or are being depleted) by overfishing, climate change, and other factors.

We want to be able to keep eating fish, but we won't have enough for the future unless we allow

depleted fish populations to rebuild and grow, and unless we keep other populations at healthy levels.

The good news is that fish are a renewable resource, and they can naturally replenish their populations if the right management measures are put in place. As scientists we try to understand basic biological questions like how does each species of fish grow and reproduce, but we also need to know how the environment or ecosystem in which the fish live affects its behavior and life cycle. This way of looking at the whole picture (and not just the fish) is called ecosystem-based management, and it is being put into practice in many parts of the world. A number of depleted fish populations are recovering, but we have a lot more work to do.

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WEEK

13 Decision Making

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**By Rich Wilson, Skipper
Aboard *Great American III***

Prior to the start of the Vendée Globe race, there were hundreds of decisions made: which boat to use, which qualifying race to sail, what to refit on the boat, what equipment to install, which vendors to use, etc. The notes on which our decisions were made fill a dozen thick 3-ring binders.

At-sea decisions include what route to take, what sails to set, how fast to go, what repairs to make, and much more. These decisions are made based on our own experience at sea, logic, input from experts where our own expertise is limited, and by doing research. Once we collect all possible informa-

tion, there is a discussion within the group by email or phone, and I make the final choice.

A big challenge for me has been the tradeoff between speed and risk. To sail faster risks breaking things, but it also gets me across the finish line sooner. Events like climbing the mast to carry out a repair hold their own set of risks: I could get hurt, or, if I decide not to perform the repair, something might break. Sometimes I review my logic for hours. In the end I may turn to my gut feeling, which is really a measure of my confidence one way or the other.

Hopefully, we can make enough correct decisions from here on to get us safely to the finish.



Decisions At Sea

**By Rich du Moulin, Owner
Intrepid Shipping**


We all have to make decisions in our lives, many of them important to our friends, families, and ourselves. Rich has had to make decisions during the Vendée Globe to maintain the safety of *Great American III*; to produce articles, photos, podcasts and videos for sitesALIVE; and to balance sailing fast with preserving his physical and mental strength.

Rich is the oldest competitor with a seven-year-old boat that is not the newest or fastest design. He knows that many of the competitors are sailors who are aggressively pushing their newer boats. Knowing that he cannot win on pure boat speed or physical

strength, Rich is using his experience to make decisions that keep himself and the boat in the race, with the goal of crossing the finish line through experience and endurance.

Decision-making at sea is very hard because you are tired, alone, and sometimes scared. Very often you do not have much time to act. Making a good decision relies on experience and judgment for sure, but planning and preparation are also very important. If you can anticipate a problem, then you can plan ahead and not have to make a last-second decision which might be too late. Good luck and good decision-making, Rich Wilson!

Rich du Moulin raced with Rich Wilson on Great American II from Hong Kong to New York in 2003.

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WEEK

14 Defining Success

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**By Rich Wilson, Skipper
Aboard *Great American III***

For Michel Desjoyeaux, success in the Vendée Globe is winning the race, which he has just done for the second time with an extraordinary effort. He is a professional sailor, and this is his proving ground.

For many of the other skippers in the race, the goal is to finish. They may have older boats or be amateur sailors. For them, winning is out of reach—their goal is to finish.

For me, there are two goals. One goal is to produce a great school program within sitesALIVE, both via newspapers and the web, and with significant contribution from our Team of Experts. The other goal is to complete the race.

On our school program, now 14 weeks along, feedback suggests that we have been successful in exciting and engaging students, mostly in the US, but also with classrooms from a dozen countries worldwide. Additionally, we have 50 newspapers publishing our series in the US.

If I can keep going and reach Les Sables d'Olonne, we will also meet our second goal. We won't know that outcome for several weeks from now.

In defining success, one must set realistic and specific goals. And then, at the finish of the project, be very honest about whether they were reached or not. For us, except for our desire to have had overseas newspapers participate, we are close to having a successful project.



A successful education program

**By Lorraine Leo, Technology
Teacher, Newton, Massachusetts,
USA**

Rich entered the Vendée Globe race in part for the challenge of the race, but mainly for the opportunity to create an education program designed to excite and engage students and families. As Rich says, "Once you've hooked kids with excitement, you can feed them whatever content you want—math, science, geography, teamwork, goal-setting, and more."

Was his education program a success? YES! Rich wrote articles, maintained a ship's log, called in audio podcasts via satellite, and answered questions throughout his voyage. With help from his shore

team, he also published a weekly print series that has appeared in many national, regional and local newspapers. Rich did this all while sailing *Great American III* in severe weather conditions, on dangerously high seas, in the heat and cold, and over the course of more than 25,000 nautical miles.

Rich was followed online by thousands of teachers and students from around the world. To date, he has received a great deal of positive feedback and support from his followers. These point to the success of the education program.

Now we wait for Rich to cross the finish line and complete the Vendée Globe. Thank you Skipper Rich Wilson for your inspiration and perseverance. On behalf of all, we salute you!

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WEEK

15 What I'll Miss

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By Rich Wilson, Skipper
Aboard *Great American III*

Surrounded by 360 degrees of horizon, you are totally immersed in nature. You see every sunrise, every sunset, the stars, the clouds, and the waves. Last week the full moon rose just after sunset, demonstrating the geometry of its fullness.

The wildlife, what one can see at the surface, is fascinating. From whales to albatross, from flying fish to squid, from porpoises to tuna to the myriad of bird species unknown to me, all of this wildlife is captivating.

Aboard the boat one is constantly challenged by the changing weather and its analysis, by the

immense physical exertion of sail maneuvers, by hanging on for safety in bad weather, and by problem solving applied to mechanical and electrical systems that stop working, break, or are just plain finicky.

In this solo race, solitude is not an issue due to the satellite telephone connections that can be made, but being alone aboard *Great American III* when the conditions are difficult is incredibly physically demanding, and it would surely help to have another one, two, or three crew members aboard.

A great teacher of mine, Dr. Ray Pariser of MIT, told me once, "You need to stretch your mind." Surely that is a great prescription for many pursuits in life. For me, being at sea does that exactly.



The next expedition


By Scott Hamilton
Investment Advisor, Explorer

When an expedition comes to an end, I don't really miss much except for my comrades. There is a huge sense of relief when I arrive back in a place that is warm, safe, dry, and where I no longer feel a constant element of great danger. And, of course, I enjoy the many conveniences we take for granted like hot water, flush toilets, a clean bed with sheets, electricity, heat, and stores filled with fresh foods.

But after a period of rest and recovery, life back in civilization starts to seem a little dull and boring compared to the excitement of being on an expedition. When you are on an expedition, all your senses are

alive and each and every day is an adventure. You get to experience encounters with nature that most people can only dream about: spectacular sunrises, huge storms, wild creatures in their natural habitat, and majestic peaks sticking up like islands above the clouds.

Being on an expedition is a mental challenge because you have to rely on your experience and judgment to solve the problems that inevitably arise. It is challenging indeed, but it is also very rewarding. After a while, life back in civilization starts to seem too easy, and I find myself craving the adventure, excitement, learning, and camaraderie that come with exploring. That is when I start planning the next expedition.

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