In the beginning there was wind. Some billions of years later, sailing was discovered. Mariners, in their finite wisdom, assumed that the wind had been created just for them. Not so. The wind has been observed, named, harnessed, worshiped, despised, and utilized for many centuries, and will undoubtedly continue to play a significant part in mankind's existance long after windsurfing has been abandoned, lost and forgotten.

THE WIND IN MY SAILS

Eric Sanford

Some things in life we take for granted. Air, water, food, fuel, sun, shade - we never seem to appreciate them at all until they are gone. When the trade winds blew, soft and warm and constant, the sailing ships of old made steady progress across the seas, bearing their cargos on wooden hulls powered by the endless free fuel. When the winds died, the ships sometimes sat still for weeks.

When the air gets stale and dry, when the sun hides behind dark grey skies on a cold winter day, when the trees are all cut down, no longer able to provide homes for animals, fuel for fires, and timber for houses.... and yes, when the wind stops blowing - only then do we stop and contemplate the true miracles around us.

Sometimes the wind is not welcome. Sometimes the wind is cruel. Ancient—and some not so ancient—Eskimos in Alaska used to try and chase the wind from their sparse houses with clubs and knives. Outside, the village men would wait around a huge fire, built to attract the wind when it left their homes. When the men decided that the wind had come to the fire they would pour water

onto it to drown the wind. As the dying wind - now in the form of hissing steam - tried to escape, the men would throw heavy stones on the fire to crush it.

Anthropologists report of Ethiopian tribesmen chasing whirlwinds, stabbing at them with knives to kill the evil spirits they believe ride on the gusts. Travelers in Tierra Del Fuego, one of the windiest places on earth, observed local wizards throwing shells against the wind to make it cease.

Tadewin is the Siouan name for the wind maiden. It is said that her gentle breezes help create colored reflections on the water by making wind ripples for the sun to reflect off. Without her silvery image there could be no color to the water.

Just as the Inuit have more than a dozen names for snow, so too are winds given names. Some winds are common only to certain weather conditions; others are indigenous to isolated regions of the earth; and still others are controlled by the seasons.

In the United States there is *hurricane* season and *tornado* season. In areas like the Columbia River Gorge the winds are created by a combination of pressure differentials and the venturi effect as the cool, moist coastal air rushes east to fill the low pressure void in the desert. In southern California there are vicious thermal *Santa Ana* winds which carry raging wildfires across the hillsides.

In Israel, the *Sharav* brings headaches, nausea and breathing problems to an estimated twenty-five percent of the population. In the Alps, the *Foehn* turns frozen mountains into fog-shrouded rock and snow avalanche breeders. In Australia, the *Brickfielder* bears dark clouds of dust from the interior while the cold *Meltemi* regularly blows down the Aegean Sea and lashes the west coast of Turkey.

There is the *Bohorok*, a warm, southerly mountain wind in Sumatra; the *Bora*, blowing throughout the Adriatic; the *Elvegast*, a cold, dry offshore breeze in Norway; the *Sirocco*, the hot, dry, dusty east wind in Syria; the *Bize*, a strong, very cold, gusty wind in Switzerland; the *Zonda*, the constant west wind in Chile;the *Papagayo* whips across the hills of Nicaragua; and the warm *Chinook* wind which blows through southern Canada.

Sometimes one wind will be found in two locations very distant from each other. The *Williwaw*, a brief, violent wind is found in both Alaska and Patagonia. The *Canterbury Foehn*, similar to the *Foehn* of Europe, is found on the south island of New Zealand.

Sometimes the same wind will be called by two different names. The *Mistral*, a cold, dry winter wind in southern France, is called the *Cierco* when it arrives in Spain. The Tramontana*Tornadoes* are also called *cyclones* or *twisters*. *Dust devils* give children their first glimpse of the wind gone wild.

Classical composers wrote music about the wind and composed sonatas, minuets, and etudes just for woodwind instruments. Modern day musicians still pay homage to the wind, metaphorically refering to it as the messenger of love.

Classical writers and philosophers were well aware of the wind. Voltaire held that the east wind spread “black melancholy over the whole nation”. Hippocrates opined that the west wind made people pale and sickly.

Shakespeare wrote that the north wind brought “gout, the falling evil, itch, and the ague.”

Indeed, there is a physiological basis to these claims. Scientists and doctors have long known that the wind can carry germs, pollens, and other fine particulate matter which can affect ones health. Dry winds like the *Santa Ana* in California, the *Mistra*l in France, the *Foehn* in Germany, and the *Khamsin* in Egypt bring a surfeit of positive air ions which stimulate the brain to produce more serotonin, a substance which makes people feel anxiety, fatigue, apathy and depression. On windy days playground fights, suicides and heart failures are more frequent. In some cities the traffic accidents increase up to 50%. Some Swiss hospitals postpone major surgery during the *Foehn* because it brings increased risk of bleeding.

Winds seem to have a will of their own. Sometimes that will is stronger than our will to resist it. Tornadoes may lift heavy objects far into the sky. Climbers have been blown from Himalayan summits by high altitude winds in excess of 200 miles per hour. The highest recorded wind velocity was recorded sixty-five years ago on the 6162’ summit of Mt. Washington in New Hampshire: 230 miles per hour. The actual gusts were probably stronger - the anemometer broke during the storm.

High altitude winds, combined with tornadoes and sporadic surface gusts, can play strange pranks on the unsuspecting. There is a report of catfish and perch falling from a cloudless sky in Chico, California in 1878. In 1953, thousands of snails fell on Algiers. In 1954 it rained crayfish in Florida. In 1882, large chunks of ice fell in Debuque, Iowa, and at least two of them contained small frogs which, when the ice melted, hopped out and lived. In the summer of 1896, hundreds of dead birds, including ducks and woodpeckers, fell from a clear blue sky onto Baton Rouge, Louisiana.

Like a beautiful woman, some winds can intensify quickly then radically change direction. *El Norte*, roaring down from the north into the Sea of Cortez can become a fierce *Chubasco*, then suddenly switch directions 180º in the night, becoming a strong south *Coromuel* wind. Sailors caught unaware in tight anchorages have found themselves dragging to opposite shores in the middle of the night.

Sometimes the pranks turn serious. The *Mistral* can roar down the Rhone Valley in France, toppling walls and roofs. Hot, dry desert winds in Tunisia have blown for days on end, drying up water tanks and killing livestock. The inhabitants of one Saudi Arabian town marched together into the desert, beating drums and cymbals to frighten the *Simoom,* the arid south wind. As they entered the desert, the Simoom swept down and buried them all within minutes.

The *Hormattan* , which whips across the Sahara Desert, can last for three to four days at a time. Physical obstructions have no effect: the *Hormattan* continues unabated over 13,000’ mountains as it roars from east to west past Tunisia, Algeria, and Morocco without stopping, blowing dust 30,000’ into the atmosphere and creating 800’ high sand dunes on the land.

The largest conflagration in history is blamed on the wind. A fire the size of Maine swept across Borneo in 1983, turning the entire countryside into a fifty mile and hour inferno.

In 1971 gusts measuring 143 mph roared down Boulder Canyon, Colorado, blowing out house windows and ripping off roofs. In 1950, the "Great Appalachian Storm" produced gusts of 80 mph for minutes at a time during it's twelve hour duration. The "Great Olympic Blowdown" in the Pacific Northwest in 1921 downed over 8 billion board feet of timber during winds in excess of 75 mph. On Columbus day in 1962, the "Big Blow" in Astoria, Oregon, featured 100 mph winds which killed thirteen people and caused $175 million in damage. In 1969 a series of huge gusts actually ripped a section out of the Hood Canal Floating Bridge near Seattle. The shredded section blew downwind for a while then sank in the canal.

In a somewhat funny, and certainly memorable disaster, the collapse of the Tacoma Narrows Bridge - affectionately named "Galloping Gertie" - in Puget Sound on November 7, 1940, was fully documented by a passer-by with a home movie camera. A series of strong gusts of wind combined with the structural harmonics of the span to set the entire bridge in motion. As the bridge - which had several cars on it - began to oscillate, it mimicked ocean swells as they reach a sea wall. Within minutes the entire structure was bouncing and buckling so fiercely that the cars were tossed from it and finally it tore itself to pieces. It was truly a visual lesson for future bridge builders to study.

Wind shears, those sudden changes in wind direction, can have disastrous results when combined with airplanes. Several recent airline crashes have been blamed on these radical shifts of the wind near the ground. They are unpredictable and unforgiving.

Many people take great pains not to anger the wind. Andaman Islanders make no noise during the interval between dawn and sunrise and between sunset and darkness, lest they arouse an ill wind. Windsurfing residents of the Columbia Gorge hold an annual 'Pray for Wind' party each spring, offering up sacrifices of boards, masts, sails and other assorted paraphernalia to a roaring bonfire. Unlike most other earthlings, they want more wind, not less.

What spirit lies behind the wind? It is easy to personify the wind as the breath of God. When we first come into this world, it is the air which gives us life. Many natural disasters are a product of violent winds. What controls this unseen, sometimes benevolent, sometimes corrupt force?

Of all the phenomena of nature, the wind is probably the least understood and the least controlled. It is defined as 'the horizontal component of natural air movement close to the earth's surface.' Vertical wind motion is not included. The Jews, Arabs, Romans, Greeks and Aztecs all took their word for spirit from the word for wind. A Navajo Indian poem speaks of the ripples on our fingertips - our fingerprints, if you will - as "the tracks the wind made when it created our ancestors long ago".

Perhaps the wind is older than life itself. Polynesians divide time into two periods: historical time and "the wind clouds", an era comprehended only by those individuals who are spiritually sensitive to the wind. The Greeks held that

Eurynome, the goddess of all things, danced to the south, stirring the north wind into being so that she might couple with it, thus giving birth to the world. Hindu mythology explained that the gods came into being when primordial waters were inflated by the wind.

Astrophysisists tell us that the surfaces of Mars and Jupiter are barren, windswept plains which have forever resisted any forms of life as we know it. Recent Voyager space research flights have confirmed unrelenting winds scouring the vast surfaces of the most distant planets in our solar system.

The wind can be the giver of life. It carries spores from a thousand species of plants, dropping them gently on new ground; it carries the pollen from flowers, fertilizing yet another generation of fruit. The winds gave birth to the Sahara Desert, carrying sand hundreds of miles into new terrain. The entire world's climate is controlled by winds in the upper atmosphere.

In the recent past mankind watched the wind more closely as it directly affected their lives. Wind, as much as the position of the sun or the movement of the heavens, determined our sense of direction. Hunters knew that game moved with the winds and that keeping the wind in one's face was essential to a successful stalk. Farmers knew that changing winds brought rain. Or drought.

Polynesian sailors could find islands beyond the horizon by lying on their backs in their canoes and feeling the swells caused by the winds rushing onto islands twenty miles away. Cook Islanders had names for thirty-two different winds. Eskimos learned to navigate in fog or snowstorms by remembering the wind currents passing over various snow and ice formations.

The wind can push more than sailing ships. Nouakchott, the name of the capital city of Mauritania, means 'city of the blowing sand'. The population of the entire country has been pushed to the west coast of Africa over the past century by the blowing sands which have gradually covered villages and towns. Two hundred and fifty million tons of sand blows into the sea each year, creating a sand bar five miles out into the Atlantic.

Over recorded history, various natural phenomena were investigated by science, but wind was not very well understood until the last century. Aristotle insisted that wind was not simply air in motion but rather a dry exhalation from the sun, distinct from the wet exhalations that became clouds and rain. It wasn't until quite recently that we understood that air heated at the equator rises and expands towards the poles. Cooler air rushes south (or north) to replace it. The spin of the Earth causes air moving towards the poles to veer to the right in the Northern Hemisphere, to the left in the Southern.

By the time the air moving from the North Pole hits the Gulf of Alaska it is moving at a right angle to it's original direction, blowing west. In the Northern Hemisphere, if you stand with the wind at your back, the low-pressure area driving the storm will be on your left, while the high-pressure area, where the sky is clear, will be to your right.

The wind also obeys local customs. Or perhaps the local customs obey the wind. Cool air moves down mountain valleys at night; warm air heated by land being baked in strong sunshine moves up the valleys during the day. In coastal areas the land heats up faster than the water, thus the air over the land

heats up and rises while cooler air from the ocean flows in to replace it. At night the land cools faster than the ocean and an offshore breeze develops.

We never see most winds. Six to ten miles up, where the hot and cold air masses meet, the winds are phenomenally strong. And constant. The jet stream blows from the west at speeds which can exceed 300 miles per hour. World War II bombers on high altitude approaches to Japan watched islands stand still beneath them as their engines labored.

Sometimes the untrained eye can detect different wind speeds at different altitudes. Clouds give us a clue as to relative wind speed and direction, but many times this is deceiving as we watch whispy cirrus clouds moving in one direction while the surface wind moves in another. Plumes of blowing snow pour off the summits of isolated peaks. One hundred mph gusts buffeting the summit of Mt. Everest can blow snow plumes over a mile directly horizontal, turning the snow crystals into a fine, icy dust.

Mankind has been fairly unsuccessful in trying to harness the wind. Windmills were first used in 7th century Persia. They appeared in Europe in the 12th century. Leonardo da Vinci drew sketches of windmills powered by four huge sails in 1500. In the Netherlands, windmills have stood for decades, harnessing the steady winds to pump water from the canals and dikes so it won't flood land reclaimed from the ocean. Hindus and Buddists in Nepal and Tibet rely on the wind to spin prayer wheels which help insure that the owner will return to the earth after reincarnation as a snake rather than an ant.

Like saccharine, margarine,naugahide, and other artificial substitutes, man has also toyed with the production of artificial wind. The Wright brothers used an early wind tunnel to test their wing designs in 1903. Now there are wind tunnels for testing everything from cars to sun glasses. There are subsonic, transonic, supersonic and hypersonic (over five times the speed of sound) wind tunnels.

The wind has both good and bad connotations. Sometimes these are carried to extremes. Kamikaze means 'divine wind'. Bad omens are said to be carried on an 'ill wind'. "The wind was sure taken out of their sails," is a common metaphor used to describe a setback in business.

Our slowness to understand the wind is odd because wind whistled close to the heart of early Europe. Farmers knew wind intimately, for a changing wind might bring a late spring or an early winter. Until the 20th century, European trade was very dependent on the wind. Phoenician sailors had settlements all around the Mediterranean. Dutch, Spanish, French and British plied the trade routes to Africa, India and America. An English sea captain named Ross declared that by listening to the tones of the wind in the rigging he could foretell a coming storm.

Many ancient and contemporary cities were laid out with streets running along the directions of the compass, a remembrance of the importance of the compass in naming the winds. It was once common to see a weather vane on every roof. That changed when people left the farms for the cities and transportation ceased to be so weather dependent.

Few people can tell you where the wind comes from. We live inside walls, surrounded by chrome and plastic and glass so we are much less effected by the

wind. Many common winds are more likely to be of our own making: the wake of rushing automobiles, the blasts of jet airplane engines, the funneling of thermal winds in the spaces between sky scrapers.

We get our weather forecast from the evening news, not the wind on our backs. We hear the wind as a rattle of windows, branches scratching on the roof, the low moan of a steady wind in the eaves, the rushing woosh of a fresh gust in the breezeway. Our house drafts lack the perfume of distant places, carrying instead the must and dust of life underground. Our fortunes are no longer bourne by the winds.

Stand on the summit of Haleakala as the cold, moist ocean air roars by, laden with the scents of spices from the Orient, wood from the Philippines, and reindeer in rut on the stark, frozen tundra of Siberia. Far away winds lap at balmy shores, bathing us in the rich scents of coconut and pineapple if only we could smell them where we are.

Dr. Oliver Sacks, one of the world's leading neurologists, describes the case history of an automobile crash victim who acquired an extremely keen sense of smell after his accident. For several weeks after his trauma, he was able to recognize the smells of people and things of which he was never aware before. Indeed, he could smell the mailman coming to his door minutes before his actual arrival. Even the slightest breeze carried a myriad of easily recognizable fragrences. After a few weeks the ability faded and he lost his abnormal sense of smell.

Blind and deaf people develop an extraordinary sense of smell to help minimize their handicap. The wind carries strong and vital information to these special people who have learned to understand their meaning. Elk, deer, antelope and bear float their noses into the gentle winds which flow through the pines on warm summer nights, using their smell to compensate for lack of light. Why can a bear smell a human a mile away but we can't smell the bear?

Seldom do we identify with wind and spirit anymore. The far away promise of wealth and adventure lured many a young boy to sea, chasing their dreams into the heart of the wind. We dream of riding on the back of the wind to consort with the stars.

The wind is natures alarm clock. One morning a million ducks may rise off the marshes of Manitoba and head south, a day or two ahead of the ice. One evening the black brant feeding on the eelgrass in Alaska's Izembek Lagoon sense a change in the wind, lift off, and fly south over three thousand miles over the next forty-eight hours.

We watch the wind play with leaves in an eddy with the same fascination as we watch the ocean waves at the beach. Where do these invisible currents come from? Where have they been? Where are they going?

We take pleasure from the wind. It seduces us with music not yet written, paintings not yet envisioned, lives not yet lived. In its destructive beauty, it reminds us of the power of nature and the forces of things unseen. It penetrates the far reaches of our world and seeps into the pores of our soul. The wind is the power of the birds and the carpet of the gods.

Above all, the wind in our sails keeps our spirits alive and our vision in tact. The movement of the air around us reminds us that we are all moving through time, riding on the wind.

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