

Current Comments

Catching the Wind. Part 2. Boardsailing.

Number 10

March 9, 1981

Last week I told you about one of the oldest "sports" known to humanity—sailing.¹ Now I'd like to tell you about one of the newest—boardsailing or windsurfing.

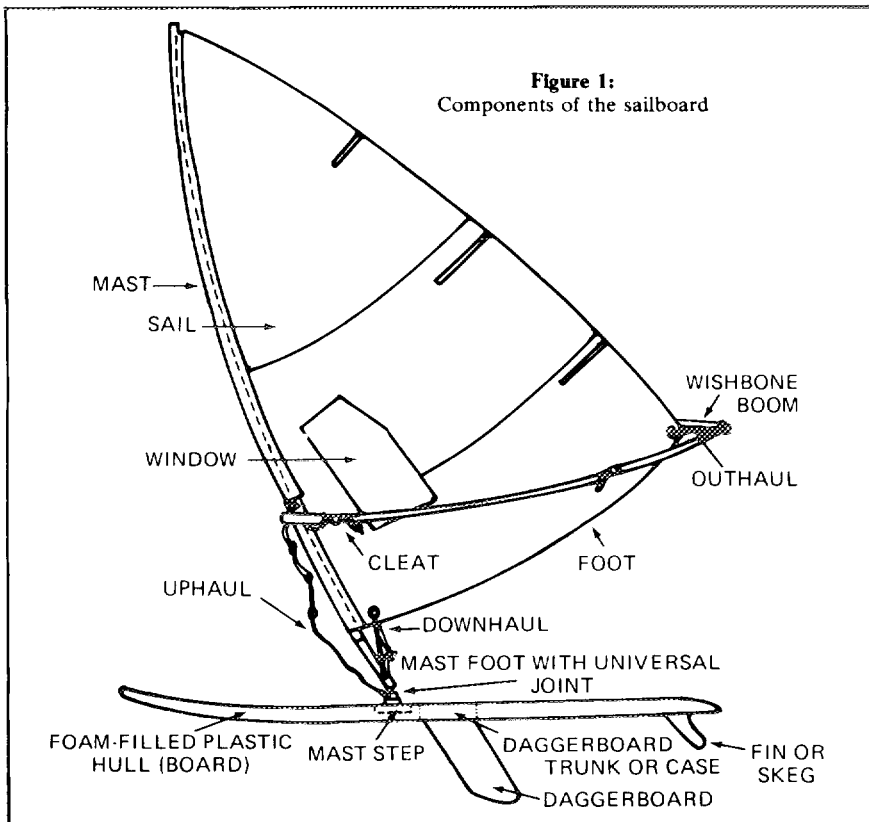
One of the most common dreams of man has been the desire to fly. I've always been attracted to the idea. I've tried parasailing, gliding, flying in small planes, and have even considered hang gliding. But for much less risk and effort, I've come close enough to the exhilaration of flying through windsurfing. And I look forward to that kind of exhilaration each time I get on a board. Downhill skiers know the feeling. And I've experienced it on cross country skis going downhill faster than I imagined possible.

If you think sailing or skiing is fun and exciting, you'll enjoy windsurfing, although it does differ from sailing in a number of ways. First of all, you stand on the board and use your weight and movement to maneuver. Secondly, you use a sail, not a rudder, for steering as well as propulsion and balance. Sailboards have daggerboards (which serve the same function as centerboards), masts, and booms but no rudder (see Figures 1 and 2). A *skæg* is situated at the rear of the board for stability. Incidentally, the word *skæg* is of Scandinavian origin. Probably the most noticeable difference between the sailboard

and the sailboat is the way the mast is linked to the body of the boat. While the mast on a sailboat is held rigidly upright, the mast on a sailboard can be moved freely in any direction. A fully pivotal joint, called the universal joint, is what makes this movement possible. The sailboard's boom also differs from that of a sailboat. On the sailboard, the boom is a wishbone-shaped device encircling the sail. Sailboards, which cost around \$900, weigh about 65 pounds and can be carried on top of your car.²

Since a number of books are available on the subject,^{2,3} I won't go into too much detail on how to windsurf. Contrary to general belief, it is not difficult. It has very little relation to surfing which requires much more skill and practice. Again, contrary to general expectation, many people can stand up the first time they try. While I am no expert, I've shown many friends that the basic movements are quite simple. I've also learned that even if you have experience with sailboats you can't count on being able to windsurf. But once you master the basic maneuvers, your experience as a sailor will help you understand tacking and, thereby, navigation.

One good lesson with a good instructor will save you many hours of wasted time and energy. I found this out the hard way. After the International Council of Scientific Unions Abstracting



Boards (ICSU-AB) meeting in Torremolinos, Spain, several years ago, I found a sailboard on my friend's yacht. After a day in the water, I was exhausted and still could not control the board.

But then I took a windsurfing lesson during an American Chemical Society meeting in Hawaii. I was taken through a series of standard steps on a dry land simulator. Once in the water I found that balancing the board was not as difficult as I had imagined. The next step was to learn how to raise the "rig"—the apparatus consisting of the mast, boom, and sail. The rig is lying flat on the surface of the water. Once you get on the board, you can squat down to pick up the rope, or uphaul. You stand with the wind at your back, and the top portion of the rope in both hands. Your feet are

about two feet apart—one on the far side of the mast and the other over the daggerboard—and you are standing sideways on the boat, facing the rig. Keeping the mast perpendicular to the board, you raise the rig by slowly pulling the rope up—hand over hand. At first this will seem impossible because the sail is full of water. But gradually it drains off and you raise the sail. This proves to be less difficult than it first appeared. After you raise the rig, if there is a breeze, the sail will flap or "luff" until you are ready to start sailing.

At this point, the boom will be pointing straight out from where you're standing. The mast is now vertical. Since the wind is coming from your back, air is blowing on both sides of the sail and you essentially stand still. As

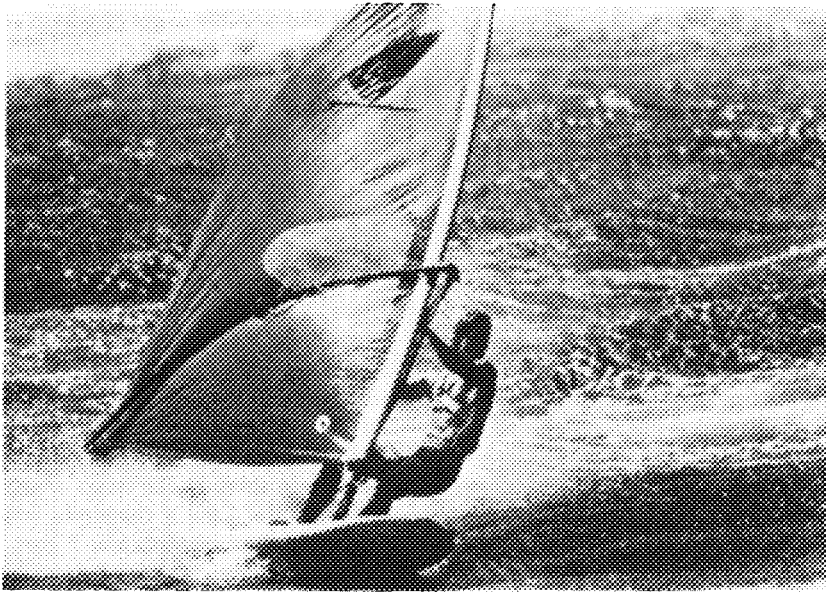


Figure 2: This boardsailor is using his body weight and strength to counterbalance the pull of the wind.

you gradually pull the boom around to a position parallel with the board, the sail catches the wind. If you pull the boom parallel to the board too quickly, you may be pulled over by the sudden pressure of the wind. In a light wind this would be no problem, because you could lean back with your arms outstretched and balance the wind pressure with your strength and weight. In a heavy wind, it is best to gradually get the feel of the wind in the sail and adjust your balance accordingly.

After you've managed to do these things, you think you're ready to get underway. But there are a few things you have to learn first. It's a good idea to stay in shallow, warm water and stick to calm weather days when starting out. Even experts spend time in the "drink." It's also a good idea to windsurf around experienced boardsailors or in populated areas. If you drift out to sea or to the middle of a large lake, you will need some help getting back until you have

learned to control the direction of the sailboard.

Once you can stand on the sailboard without falling, and can lift the rig out of the water, you are ready to consider the problem of controlling your movement. In a sailboat, you use a rudder to steer. But how can you steer a sailing craft that has no rudder? In windsurfing, steering is accomplished by changing the angle of the sail. The basic mast position is vertical. If you move the mast several degrees toward the front or back of the board, so that it no longer forms a right angle with the board, the board will change direction. In fact, if you are standing with the wind approaching from behind you, and your left side toward the front of the boat, the forward movement of the mast will turn the boat clockwise while the backward movement of the mast will turn it counterclockwise.

Actually, the first movement you should learn is turning the sailboard

from the starting position. If you get on board near land and are pointed toward the shore, you are going to hit the beach unless you can turn around. This is accomplished by standing on the board with the wind at your back and the sail held up out of the water by the uphaul, or line connected to the rig. To move the boat, you pull the sail to the left or right and slowly move your feet around the mast until you are facing in the opposite direction.

As with sailing, it is possible to control your speed as well as your direction on a sailboard. Your ultimate speed is a function of the prevailing wind, the angle of the sail, and the design of the board and sail. You can sail as fast or slow as you want by changing the angle between your arm and the boom. Just as pulling in the sail of a sailboat increases your velocity, pulling in on the boom increases your speed on a sailboard.

Unless you've heard stories of experienced boardsailors, you won't realize how easy it is to underestimate how long it may take to return once you start a journey. When you start out, you are fresh and full of energy. After you've traveled a mile or two, you may find the wind is more than you had bargained for. If you don't know how to raise the sail in strong wind, you may be stranded out at sea and find yourself drifting in the current. This happened to me in Dubrovnik, Yugoslavia, when I attended an international conference on scientometrics. Luckily, a fisherman towed me back before dark. The trip downwind was quite easy but, somehow, I could not manage the upwind journey either because I was too tired, the wind velocity had increased, or I underestimated the force of the current. So it is usually a good idea to begin a trip by sailing against the current. If that isn't possible, you should stay close to shore. You will be closer to help, as well as in a weaker current, near the shore.

It is also possible to get caught in very turbulent water and lose control. The last time I was in Hawaii, after a lecture tour of the Far East, I got caught in the surf and had to be rescued by a Samoan in a catamaran. He took over the sailboard. I had no trouble sailing the cat back while he deftly maneuvered the sailboard out beyond the shallow rough water, and followed me back to the beach. Since I was out for 90 minutes more than I had expected, I barely caught my plane to Los Angeles. The next morning I rushed down to Marina del Rey in hopes of practicing, but could not find a single board available—right there in the heart of windsurf land! But I got a chance to watch some marvelous acrobats (see Figure 3). Believe it or not, experts can sail the board on its side and do 360 degree somersaults! This is not my cup of tea, but it is delightful to watch.

Boardsailors tend to be evangelistic, and I suppose I've taken up the "religion." Whenever I go windsurfing, I use my rest periods to convert my friends and strangers. I am proud to say that several of them have found windsurfing a lot easier than they had imagined. This includes some small people who thought they would not be strong enough for the sport. Actually, sails come in different sizes so a beginner can start with a smaller and lighter sailing rig. You can't go as fast as the experts, but that's unnecessary. And in a strong wind, even experts may prefer a smaller sail.

Boards also come in different sizes. A beginner can start with the larger, more stable board, which usually has a flatter hull than the more streamlined version. You won't go as fast, but you won't fall very often either. After you've learned to balance on a flat board, you can move up to a more rounded version.

Unfortunately, boards can deteriorate if not properly maintained. On a recent trip to St. Croix, I was frustrated to

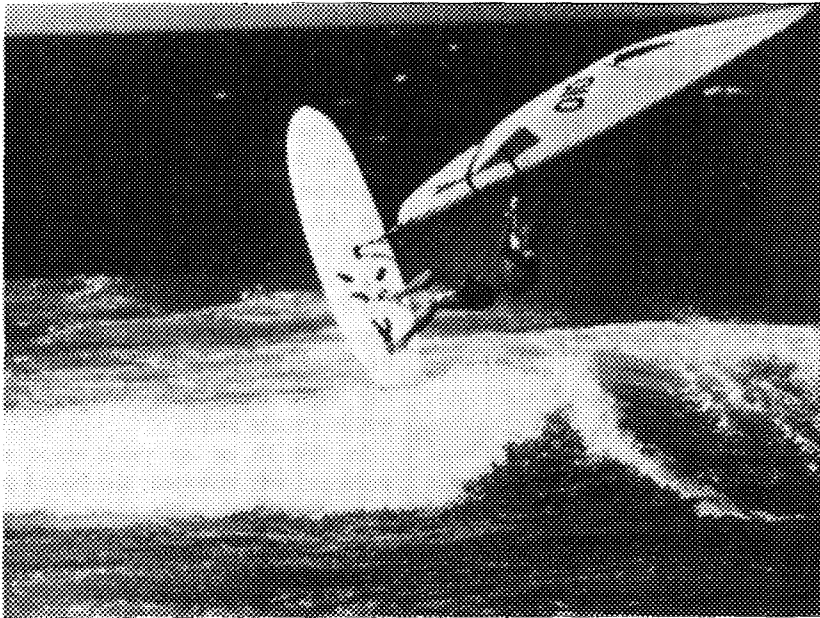


Figure 3: This boardsailor is jumping a wave, a maneuver that should only be performed by the experienced boardsailor.

find that the only board available was so hollow its skin buckled when you stood on it.

One of the main deterrents to the growth of windsurfing—around cities, at least—is the problem of storage. Where do you keep a 12-foot board and a 14-foot mast in the middle of a city? This is not a trivial problem. One solution is the West German portable sailboard, called the *Shark*[®]. This board comes in several pieces and the mast telescopes down to a manageable size. The board, which costs about \$1,000, is currently available in Western Europe, and will probably be available in the US in 1982. The company that manufactures it, Shark-Wassersportgeräte, GmbH, can be contacted at Auf den Hohen, 2830 Bassum, Federal Republic of Germany.

Some airlines will allow you to check your sailboard as extra baggage, but this may not be a solution if you have no way of getting your board to the water

once you arrive at your destination. That is why the idea of a portable model is so appealing. You ought to be able to put your board in a station wagon or to check it on a train or plane, much as you would a folding bicycle or a pair of skis. Of course, if you can put a rack on your car at both ends of a journey, you can solve this transportation problem.

The Philadelphia area windsurfing expert is Paul Pinkney. He represents Windsurfing International, a California-based company, and provides lessons with his wife, Mary. Paul is over 65 and windsurfing keeps him in marvelous physical shape. I've wanted to buy a sailboard from him for some time, but haven't been able to solve the problem of storage and transport. However, I recently had a trailer hitch put on the rear bumper of my car so that I can hook up a trailer that can support one or two sailboards. As soon as the spring arrives, I can start windsurfing. You

need to wear a "wet suit" until the weather gets warm enough to sail without one. A "wet suit" is an insulated rubber suit that keeps you incredibly warm in the coolest water.

Those of you with entrepreneurial inclinations will find the commercial history of boardsailing interesting. An article describing a similar craft using a kite and square board appeared in *Popular Science*⁴ in 1965. But the currently popular model was developed by two scientists in California about 1967. At that time, Hoyle Schweitzer was a vice president of a computer software company and his friend Jim Drake was involved in aircraft design. The sailboard they designed became so popular among their friends and, eventually, people who had seen or heard about it, that they patented the idea.⁵ Schweitzer quit his job and went into the business of making the *Windsurfer*[®].³ Drake sold his half of the patent rights to Schweitzer for \$36,000.⁶ Schweitzer's firm, Windsurfing International, Inc., is now a multi-million dollar business, with licensed manufacturers in The Netherlands, Japan, Australia, Canada, and Africa.

Ironically, sailboarding is more popular in Europe than in the US, with activity centered in The Netherlands, France, and Germany.⁵ Although Schweitzer still holds patents in the US⁷ and several European countries, other manufacturers are beginning to enter the European and North American markets.

Windsurfing International and Schweitzer have been active promoters of sailboarding. They helped form, and continue to support, the International Windsurfer Class Association (IWCA), which sponsors sailboarding competition using only one "class" of sailboard—the *Windsurfer*.⁸ World championships have been held under their aegis since 1975 and affiliate organizations have sprung up in Europe. *Wind-*

surfer, the magazine of the IWCA, features information on competition and equipment, and some beautiful color photography. It is edited by Schweitzer's wife, Diane.

The other major boardsailing magazine is *Board and Sail*, and the other major organization is the US Board Sailing Association, sponsored by such firms as Sailrider, Inc., AMF/Windflite, Inc., Funsurf, Inc., and Wing Systems, Inc.⁹ The association sponsors "open class" competitions in the US and Canada—races in which any brand of board can compete if its specifications are within certain limits.

In the 15 or so years since the sailboard was invented, the board and sport have undergone some changes. Foot straps and harnesses have been added, mainly for competition, and wet suits have become popular among year-round enthusiasts. Hawaiians, who have repositioned the mast for greater maneuverability, are reporting speeds of at least 25 knots. There are even tandem sailboards. Like the bicycle built for two, tandem boards have two sails. With the exception of the catamaran, no sailing vessel can go as fast as the sailboard.¹⁰ Sailboarding is now an internationally competitive sport, and will be included in the 1984 Olympics.

Clearly there are limits to a written or verbal description of a process which involves as many simultaneous movements as does sailboarding. You just have to get out there and give it a try. I am surprised that so many people who can drive a car will balk at learning a sport as simple as windsurfing. I consider it simpler than swimming—an activity that most of us take for granted but which by no means comes naturally to most people.

Of course, one may reasonably ask, why bother to learn windsurfing when there are so many easier and more convenient sports. I admire those who have

the discipline to exercise regularly in a gym, jog, or do calisthenics. None of these, however, appeals to me or fits into my schedule. More importantly, none of them provides exercise in a form that is so exhilarating. The effect of this exercise and eventual exhilaration (after the initial frustration) is relaxation. Raising that sail several dozen times in a few hours is exhausting. You will feel it in your legs, arms, and sides. If you don't wear sneakers or windsurfing shoes, you may find blisters on your feet. No doubt about it, windsurfing takes a toll. But the thrill of flying in the wind and of mastering such an exciting sport clearly makes the effort worthwhile.

Apparently, many athletes are quite taken with the power of the wind. The speed sail, resembling a skateboard with

a mast and sail, is gaining popularity as is the ice boat, which can achieve speeds of up to 190 kilometers per hour. Daredevils are taking up parachuting and hang gliding. A recent *Omni* article points out that the lure of these sports lies with the fact they can be enjoyed alone. Arnaud de Rosnay, an innovator of new forms of recreation, is quoted as saying: "With overcrowding and mounting competition for jobs and living space, man will want to escape cramped quarters and, as a solitary player, explore nature's boundless pleasures."¹⁰

* * * * *

My thanks to Joan Lipinsky Cochran and Edward M. Sweeney for their help in the preparation of this essay. ©1981 ISJ

REFERENCES

1. **Garfield E.** Catching the wind. Part 1. Sailing. *Current Contents* (9):5-10, 2 March 1981.
2. **Winkler R.** *This is windsurfing.* Boston, MA: Sail Books, 1979. 208 p.
3. **Taylor G.** *A complete guide to the sport of windsurfing.* Menlo Park, CA: Bay Windsurfing, 1979. 272 p.
4. **Darby S N.** Sailboarding: exciting new water sport. *Popular Sci.* 187(2):138-41, August 1965.
5. *A history of boardsailing.* (Press release). Marina del Rey, CA: Windsurfing International, September 1980. 3 p.
6. **Drake J.** Jim Drake: how it all began... *Board and Sail* 1(4):8-9, December 1980.
7. Patent No. 3,487,800. Wind propelled apparatus. January 6, 1970.
8. **International Windsurfer Class Association.** *Constitution class rules.* Marina del Rey, CA: IWCA, 1980. 8 p.
9. **Yost D.** Telephone communication. 12 November 1980.
10. **McAulliffe K.** Swept away. *Omni* 3(1):101-7, October 1980.