

Working Wind

13 Kayak Sails Reviewed

Once you've had the experience of letting the wind carry you along at speeds you'd never be able to sustain under paddle power, you'll look at every fair wind with an eye toward sailing.

As kayakers, we frequently have to contend with the wind. Sometimes we have to struggle against it, at other times we just tolerate it. With a sail, we can often take advantage of it. In the early days of recreational boating, in the 19th century, most paddling craft were rigged for sailing. Many of the manufacturers of folding kayaks have carried that tradition through to the present, but sailing is not widely practiced by modern-day kayakers. There are now many options available that can be used aboard almost any kayak. They range from simple sails that can push you along when the wind is at your back to rigs that turn a kayak into a fast and efficient sailing vessel.

The kind of sail you choose depends upon how much time you want to commit to sailing and to the kinds of conditions you'd like to sail in. Some of the downwind sails can be carried in compact packages that can be stowed on deck, ready to use at a moment's notice. The more sophisticated rigs that offer you the ability to sail at an angle into the wind may include outriggers and leeboards and foil-shaped sails that must be set up at the beach and remain in place while you are on the water.

Downwind and Reaching Sails

EASY RIDER

Downwind Spinnaker Rig

The Easy Rider Downwind Spinnaker is flown from a two-piece flexible mast that packs down to 36 inches and assembles to a length of 68 inches. The mast is set in a base bolted to the deck. It drops into the base, and a twist of the mast locks it in place.

The spinnaker is hoisted by its hal-

yard, and each of its lower corners has a sheet that clips into padeyes mounted on deck. Once the sail is set, your hands are free to hang on to the paddle to brace. In a 15-knot breeze, I was running at about 5 knots, and the spinnaker was quite stable and held its shape well. A wide window in the sail provided good visibility even though it isn't very high. In strong winds, the mast can take a significant bend. For sailing on a reach, the spinnaker can be pulled against the mast and folded around it. Bringing the corners of the sail together reduces the sail area by half. You can stagger the overlap of the sail to increase the effective sail area. In an 18-knot breeze, I did about 5 knots across the wind. Because the sail is folded over the mast, the mast doesn't bend nearly as much as it does when flying from the masthead.

The tensioners on the sheets work well for lengthening the sheets but required both hands to shorten them—an awkward operation when I had to hang on to the paddle to brace.

The Spinnaker and mast stows in a compact and light package that makes it



Easy Rider's Downwind Spinnaker Rig

Reviews by Christopher Cunningham

easy to take along. It's a small but very versatile rig that would be a welcome asset to a cruising kayaker.

Downwind Spinnaker Rig: \$395

Sail only: \$125

Reaching Sail Rig

Easy Rider's Reaching Sail is set on the same mast, and its tack is clipped into a loop at the base of the mast. The sheet clips into deck rigging aft of the cockpit, and its length is adjusted with a tensioner. (For sailing stiff breezes, I'd suggest removing the tensioner and lead the sheet forward to a jam cleat.)

In light air, the sail draws well. There's just enough clearance under the sail and sheet for paddling. Used in combination with Easy Rider's small leeboard, the sail can work well beating into a light wind. Wind at 20 knots was more than I could comfortably handle with the Reaching Sail. When the sail pulled hard, the mast hooked, and the sail exerted a lot of

Glossary of Sailing Terms

Rigging

Backstay: A line from the mast to the stern.

Halyard: A line to hoist a sail up a mast.

Sheet: A line attached to the sail to control its angle relative to the wind.

Leeboard: A fin-like board set in the water to resist the lateral pressure of the wind.

Multihull Terms

Ama: A small hull that's set away from the main hull to provide stability.

Aka: A crossbeam between the main hull and an ama or pair of amas.

Under Way

Run: Sail downwind.

Beat: Sail at an angle into the wind.

Reach: Sail at an angle between running and beating.

Beam reach: Sailing at 90° to the wind.

Broad reach: Sailing between a beam reach and a run.

Tack: Turn the bow through the wind while beating.

Jibe: Turn the stern through the wind while broad reaching.



Easy Rider's Reaching Spinnaker Rig



Quiver Sails' Single V



Quiver Sails' Ultimate V

downward force that heeled the kayak and forced me to brace to leeward.

The Reaching Sail can be fun to use for light summer breezes. Its single sheet is an advantage over the spinnaker for sailing across the wind, but it isn't as versatile as the Spinnaker is in stronger winds.

Reaching Spinnaker Rig: \$395

Sail only: \$125

Easy Rider Canoe & Kayak Co.

425-228-3633

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www.easyriderkayaks.com

QUIVER SAILS

Single V

The Single V sail is an inverted V-shaped sail with two 52-inch wooden spars set in sleeves on the side of the sail. Rolled up, it's a compact package that can easily be carried on deck. Unfurled, the sail has two cutaways where you grip the spars. There is no window in the sail, but it's easy enough to hold it off to the side to look over the bow.

In a 15-knot wind and a following sea,

I could run at close to 5 knots picking up a boost from the waves. I could do 4 knots sailing about 45° off the wind.

The sail occupies both hands, so the rig works best with kayaks that have high stability and a rudder. The Single V's sail area is modest and easy to manage, though like any hand-held sail, it can be tiring to hold on long passages.

Small sails are often used for heavy weather, but in those conditions you'd need to have your paddle in hand. I'd recommend this sail for casual sailing in light winds. The sail is easily jettisoned if it gets hit with a sudden gust, making it a safe sail for beginners (using a kayak with good stability).

Single V: \$115

Ultimate V

Similar in design to the Single V, the Ultimate V sail uses telescoping aluminum tubes for spars (42 inches collapsed, 60 inches extended). The greater sail area provides a lot more pull. In a 15-knot wind, it could easily get the kayak up to speed to surf wind waves, but I felt I was

pushing the limits of what I could do without a paddle to brace myself in rough water. I think the larger area of the Ultimate V is best put to use catching light winds or for a bit of athletic sailing in moderate winds when the seas are not so steep as to challenge the kayak's stability.

Ultimate V: \$135

Butterfly Rig

Quiver's largest rig uses a telescoping aluminum mast (47 inches, extending to 80) mounted forward of the cockpit, supported by a through-hull fitting in the foredeck and a wooden mast step glued to the hull. The window at the base of the sail provides a view forward through the large area covered by the sail. For reaching, the two halves of the sail are brought together on one side, halving the sail area but providing an easily managed sail.

The sail has cutouts for holding the 52-inch-long spars as well as straps to serve as sheets. With a light tailwind, I tied the straps to the deck rigging and let the sail take care of itself. In a stiffer

Sailing Explained

If you hold something up to catch the wind, you'll get carried along in the direction of the wind. The sail creates drag. When you set a course at an angle to the wind, air flows across the sail. The resulting force—lift—is roughly at right angles to the sail, similar to the force you generate by sculling with a paddle. With the sail set at an angle to the kayak, part of that force propels the kayak forward, and part of it pushes the kayak sideways. As the kayak shifts from a course across the wind to one angled into it, the force pushing the kayak sideways becomes proportionally higher, and you'll need a leeboard to eliminate the leeward drift.

The lateral pressure on the sail also tends to make the kayak heel away from the wind. Many folding kayaks equipped with sails have enough inherent buoyancy to resist the heeling, but most touring kayaks require the stabilizing effect of an outrigger to keep upright. (In some cases, hydrofoils serve the same purpose. The Triak [reviewed in *Sea Kayaker*, Oct. '97] is perhaps the best-known application of foils on a kayak. The Triak is expected to be available again this year. Visit www.triaksports.com for more information.)



Quiver Sails' Butterfly Rig

breeze, blowing about 18 knots, I needed to hang on to the paddle, so I held the straps against the paddle shaft—awkward, but I made a good 5 knots. I tried reaching, but I couldn't find a balance between holding the sail at an effective angle, shifting my weight to windward and bracing with the paddle.

The Butterfly sail is at its best in light air with ruffled seas. Though I didn't try the sail mounted on a double, it would work well in stronger wind with the extra stability or with one paddler bracing.

Butterfly Rig: \$300

Quiver Sails

802-249-7708

info@quiversail.com

www.quiversail.com

SPRIT SAILS

Mid-Size Rig

Spirit Sails makes two inverted V sails that have their spars joined by a Y-shaped fitting that locks into a deck-mounted socket (one version of the socket is bolted on and another is temporarily attached with four suction cups). The sail can be set at right angles

or at 30° to the wind. After the spars are slipped over the arms of the Y fitting, the sail is set parallel to the kayak's centerline to insert into the base. Turned to one of the sailing orientations, the Y fitting locks into the base.

Set square to the kayak, it's a stable hands-free running sail. The window at the bottom of the sail offers a view over the bow. The Mid-Size Rig's fiberglass spars are each two 27-inch sections that together measure 51 inches long and don't flex as much as the spars in the larger version of the sail. In a 12- to 15-knot breeze, the small sail had plenty of power for running and broad reaching. I clocked 4.5 knots on a run, and with the sail set at its 30° setting, I could comfortably sail on a beam reach doing close to 5 knots.

Mid-Size Rig: \$199

Full-Size Rig

The larger version of the sail has spars that come in three bungeed sections, pack at 27 inches long and assemble to 75 inches long. In a 15-knot wind, I could run at about 5 knots. For safety,



Spirit Sails' Full-Size (left) and Mid-Size Rigs

the spars can flex, reducing the sail's frontal area to spill excess wind. The larger sail was not as well suited for reaching as its little brother. As the spars bent away from the wind, the sail pressed downward over the side of the kayak, forcing me to brace to leeward.

The instructions caution against using either sail in winds over 15 miles per hour. While the smaller sail is manageable in winds of that force, the larger sail is difficult to drop, especially if you need to keep one hand on the paddle for bracing. With the spars flexed, I was not able to lift and rotate the Y fitting to remove it. Taking hold of both spars provides the leverage needed to release the Y fitting, but you'll need to have a kayak with the stability to take care of you for the moment you have both hands off the paddle.

The full-size rig is best suited for running with light winds.

Full-Size Rig: \$249

Spirit Sails

250-335-3255

info@spiritsails.com

www.spiritsails.com

PRIMEX/DELUGE

Kayak Sail

This V sail from Primex/Deluge mounts to the foredeck with webbing that clips into the deck lines or fittings found on most kayaks. The fiberglass masts are each in three bungeed sections (29 inches extending to 77.5 inches). The sheets are tied to the two upper corners



Primex/Deluge's Kayak Sail

of the sail and lead to snap hooks fixed by Velcro to the paddle shaft. The Velcro also holds the lines in place.

The sheets stabilize the sail laterally, and the wind holds it up; a light or fluky breeze can make it awkward to keep the sail upright. As the wind grows steady, so does the sail.

The sail pulled well downwind in a 10- to 12-knot breeze, and I could easily see forward through the window. With the sail drawing well, the paddle was at about chest level and too high to use for bracing. If I'd lengthened the sheets, I could have lowered the paddle enough to use it to brace, but the pull of the sheets resisted my twisting the paddle to set the blade at an angle for bracing. In stronger winds and choppier seas, I'd be uncomfortable having to use the paddle both for bracing and for controlling the sail.

I could sail perhaps 20 or 30 degrees off the wind, but it wasn't really reaching—I just kept the sail square to the wind; angling it to get the wind flow across the sail just back-winded the sail and let it fall aft.

If you don't want holes in your kayak or if you are borrowing or renting a kayak, the Primex mount fits most kayaks, and its generous sail area lets you put moderate following breezes to good use.

Primex Sail Rig: \$129.99

Primex/Deluge
from Lyon Expeditions, sole distributor
360-468-3250
rob@lyonexpeditions.com
www.lyonexpeditions.com

PACIFIC ACTION

Kayak Sail, system model PA ST1

Pacific Action's sails are self-supporting and self-deploying. With stout bungee cord as forestays, the spars spring forward when they're released from the stowed position on deck. In an instant, you're sailing. The masts are anchored in a pair of molded "feet" with a webbing

strap bolted on deck. A looped sheet, with each of its ends tied to a mast, runs through deck-mounted fairleads and across the deck just ahead of the paddler. To switch from running to reaching, you just shift the loop—one mast leans forward, the other aft. To bring the sail down, you pull one side of the sheet until a mast is within reach. The sail is stepped so far forward that it doesn't occupy a large span of the view, and a window takes care of the obscured area.

The PA ST1 model reviewed was useful in light air and behaves well in a good blow. I took it out in a 20-knot wind and zipped along on a reach at 5.5 knots. The sail took care of itself, and I leaned into the wind on a skimming low brace. On a run, I slowed to 5 knots, but only when plowing into the back of a wave. When the sail pushed me over the crests, I surfed at a GPS-measured 9.5 knots. While running before a strong gust, the sail wobbled back and forth, and the deck flexed under the pressure, but that's just an observation: When I'm pushing 10 knots and eagerly looking forward to the next gust, I have no complaints. Pulling the sail down under



Pacific Action's PA ST1 Kayak Sail

those conditions was nearly a one-handed chore. For a brief moment, I had to use both hands to pull the sheet to get the mast within reach. Fortunately, as I pulled one side of the sheet in, the sail spilled the wind, taking some of the pressure off while I was unable to brace.

The Pacific Action sail can ride on deck always at the ready. Its ease of use and

performance in both light and strong winds could convert a lot of gung-ho paddlers into sailors.

Pacific Action PA ST1: \$249.95

Pacific Action

(distributed in the U.S. by Wildwasser Sport—see review in the Windward Rigs section)

011-64-9-410-9084

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www.pacificaction.co.nz

ZEPHYR KAYAK SAILS

Wwilliwaw

Designed specifically for doubles, Zephyr's running sails catch a lot of wind. The foot of the sail is stretched out by a two-piece wooden spar (61 inches in two 32-inch sections) held by the forward paddler or tied to the fore-deck. The head of the sail is supported by a pair of paddles, and its corners are held to the paddle shafts by bungees and small S-hooks. The aft paddler holds the paddles upright to support and open the sail. There's a window in the sail that provides good visibility forward for the bow paddler. The aft paddler usually has the steering pedals in a double, and with the forward view obscured by the sail



Zephyr Kayak Sails' Wwilliwaw

and by the forward paddler, the paddler at the helm will have to rely on the bow paddler to keep an eye forward and call out steering commands.

In a steady breeze the sail fills out nicely and can push a double along at a good clip, easily equaling paddling speed. When I sailed the Wwilliwaw in a 15-knot breeze with two-foot whitecaps, the double rocked and the wind was tripped up by the waves, so the head of the sail tended to curl under. Holding the paddles higher with the blades against my chest helped stabilize the sail.

As with most hand-held sails, it can tire you out hanging on to the "masts"

during a long run. The Zephyr Sails' full shape is best suited to running. It's difficult to hold one edge tight enough to allow the sail to keep its shape for reaching.

The Wwilliwaw sail folded into a compact package that was easily stowed. When you have the wind at your back and want to take a break from paddling, it will easily take up the work of a pair of paddlers.

Wwilliwaw, 44 sq. ft. (Other models are 40 and 36 sq ft.): \$295

Zephyr Kayak Sails

360-378-4436

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www.seakayaksails.com

Windward Rigs

EASY RIDER

Airfoil Sail Rigs

Easy Rider has developed a system of deck fittings and accessories that make it possible to carry sails, outriggers and leeboards and even catamaran a pair of kayaks. The decks of Easy Rider kayaks are molded to accept the fiberglass poles used as akas and to support mast steps for the company's downwind sails and more sophisticated windward sails.

The fully battened Batwing sails used by Easy Rider are manufactured by Balogh Sail Design (see information immediately following Airfoil review). They are beautifully made, well reinforced and very efficient. The battens hold the sail in a foil shape, and reefing zippers tidily reduce the sail area by bringing pairs of battens together. The 12-foot, 10-inch aluminum mast is inserted through a deck fitting to a mast step in the bottom of the kayak.

The rig takes about 10 minutes to set up. The akas provide clearance for paddling, especially with a single-bladed paddle that stows neatly on the "trampoline" stretched between the akas. The leeboard pivots on the outboard end of the forward aka and is easy to deploy.

The system reviewed uses a single outrigger (Easy Rider also offers longer akas to support a pair of amas). When it's on the downwind side, its buoyancy keeps the kayak on an even keel; on the windward side, its weight does. (Small bags of lead shot can be stowed in the ama to increase its weight.) I could "fly" the 8-foot, 8-inch ama out of the water, but it continued to exert a steady righting force. It would be possible to capsize with the ama on the windward side, but you'd have to work at it.



Easy Rider's Airfoil Sail Rig

In light air, the Batwing sail was able to convert a 10-knot breeze into a surprising 5 knots of boat speed on a reach. In 15- to 18-knot winds, I zipped both reefs in the sail and could very comfortably reach and run at over 5 knots and pick up waves to ride along at surfing speeds. In waves to two feet, the single outrigger made a very stable platform.

In a catamaran configuration with a pair of Batwing sails, my paddling partner and I flew along in 20-knot winds and three- to four-foot seas. The sailing rig held up well as we bashed through waves as if under power, and I occasionally found myself waist-deep in water. It

was an exhilarating ride under challenging conditions.

The combination of the Batwing sails, amas, akas and leeboards is a very versatile and well-designed system. It's a lot of fun to sail and has the efficiency and reliability that would appeal to the serious expedition kayaker.

Airfoil Sail Rigs (Prices vary according to options selected. Sail, leeboard and outrigger reviewed priced at around \$3,000, with standard installation included. Sailing rigs require special deck tooling that is ordered as an option on new Easy Rider kayaks or as a custom retrofit on existing kayaks.)

Easy Rider Canoe & Kayak Co.

425-228-3633

info@easyriderkayaks.com

www.easyriderkayaks.com

Balogh Sail Designs, manufacturer of the Batwing sails used by Easy Rider, also makes a downwind sailing rig and an outrigger system that uses inflatable floats. Review models were not available during testing for this article.

Balogh Sail Designs

434-735-8262

batwing@baloghsaildesigns.com

www.baloghsaildesigns.com

CHESAPEAKE LIGHT CRAFT SailRig MK2

Chesapeake Light Craft (CLC), a manufacturer of kit kayaks, offers a kit that converts a kayak into a sailing trimaran. Its stitch-and-glue amas have a deep-V section and an attractive profile. The laminated wooden akas are gracefully curved. The forward aka has a fitting to



Chesapeake Light Craft's SailRig MK2

hold a pivoting leeboard and another to hold the mast. The akas have supports scribed to fit any deck and are secured to the kayak by lashings run through eyebolts installed at the sheer. The aluminum mast (15 feet, 6 inches for the 40-square-foot sail, and 18 feet for the 50-square-foot sail) requires a hole through the foredeck and a mast step secured to the hull.

On our Cape Horn test kayak, the akas carried the amas just clear of the water, so when the kayak was on an even keel, only the main hull was in contact with the water. It was easy to balance and fly both 10-foot, 7-inch amas while paddling. The arch of the akas keeps them clear of rough water and provides good clearance for paddling.

The sail has a single batten to give it a foil shape. A downhaul shapes the sail by putting some bend in the mast and

keeps the mast anchored to the kayak. The sheet leads aft to a deck-mounted block. The plans call for a boom, but none was supplied, so the rig was sailed loose-footed. That works well for beating and reaching, but the effective sail area is reduced when the sheet is paid out for sailing downwind and the sail curves out forward.

The 10- to 15-knot winds I sailed in with the CLC rig pushed the boat along at good speed, over 5 knots on a reach. The amas did their job elegantly and quietly, and the akas took the pressure of sailing without visibly flexing. The tall unstayed mast bowed noticeably, but the sail always kept its shape.

With the leeboard set close to the mast, there was a significant weather helm (the equivalent of weathercocking), especially when beating. Angling the board to trail aft at an angle helped somewhat. The large sailing rudder supplied wasn't compatible with the test kayak's rudder fittings, but I think its greater surface area would help balance the sailing rig.

I'd suggest that builders make the

flanges that project from the amas stouter than the 9mm plywood specified in the plans. They may be strong enough under the loads imposed by sailing, but one of the tabs had a small surface fracture, damage that would likely not have occurred if made from doubled up layers of 9mm plywood. To keep the bolt holes in amas and akas from chipping, I'd drill oversize holes, filling them with epoxy and redrilling holes to fit the bolts. The CLC rig includes specifications for two sail sizes. The larger of the two would work well in light summer winds, and the smaller sail in the shoulder seasons. Neither sail can be reefed.

The CLC rig will convert kit or commercial kayaks to sail and will reward home builders with a project that is both eye-catching and fun to sail

SailRig MK2 (sail not included): \$799

Plans: \$69

40 sq. ft. sail: \$299

50 sq. ft. sail: \$399

Chesapeake Light Craft

410-267-0137

info@clcboats.com

www.clcboats.com



Wildwasser Sport's Nomadic Express XT Sailing Rig

WILDWASSER SPORT

Nomadic Express XT Sailing Rig

Wildwasser's Nomadic Express uses a pair of 9-foot, 10-inch inflatable amas supported by aluminum akas. The rig is mounted on two carbon-fiber plates (contoured to fit the deck of the Prijon Kodiak. Check with Wildwasser about the development of other plates to fit the decks of other kayaks). The mast is stepped on deck and doesn't require a hole in the deck or a mast step. A rubber universal joint allows the mast to pivot to the deck when the running forestay is released. A pair of shrouds provides lateral bracing to the mast. The fully battened sail is supported by a 15-foot-tall mast and given a good foil-shaped curve by three battens.

I took the rig out in winds up to a gusty 22 knots—a reefing breeze, to be sure, but a good test of the strength of the rig. The mast and the akas bowed and the leeward ama arched up between the akas. A terrific strain, but the rig held up without a creak. I made great speed broad reaching and running, and the outriggers provided a very stable sailing platform. As of the time of this review, Wildwasser was still working on a leeboard for this rig and expected to have it available in March. Without it, I could sail well up to a reach, but a leeboard is required for effective windward sailing. With a leeboard, the rig has the potential in its sail and its outriggers

Sailing Tips

A few things you'll be better off not learning the hard way.

Paddle Leash

If you're zipping along under sail, anything you drop overboard is going to be left far behind. Tether deck gear and use a paddle leash. With downwind rigs, you can't sail upwind to retrieve anything you've lost. If something goes overboard, you could drop the sail and paddle (with your spare, if it's your paddle that's jumped ship) back along your path, but it's unlikely that you'd be able to find your way to your stray gear.

Cold Weather

When the air is cold and the wind's doing all the work, you won't have the physical activity of paddling to keep you warm. You may need to add another layer of clothing. If you wear gloves, fingerless may be the best way to go: It's hard to handle sailing lines if your gloves have muted your sense of touch.

Bracing

While reaching with a non-outrigger kayak in light to moderate winds, I brace on the downwind side; in strong winds, I have to cantilever my weight against the rolling force of the sail. I lean well out to windward and ride a skimming low brace. I rest some of my weight on the paddle and just unweight it to absorb the gusts.

If you're zipping along under sail, anything you drop overboard is going to be left far behind.

Paddle

If you're sailing without an outrigger, you may be doing a lot of low bracing to keep your kayak upright, especially if you're reaching across a stiff breeze with the paddle skimming across the surface of the water. Almost any touring paddle will do the job of keeping you stable, but paddle blades with smooth backs create less drag and won't tire your arm over the long haul.

Capsizing

If you capsize with a sail that's fixed to the kayak, don't waste time trying to roll. Save your breath for getting out of the kayak. Bail out and take care not to get tangled up in any rigging. A sail that winds up in the water gets very heavy and moves very slowly through the water.

to perform well on all points of sail. I'd recommend keeping an eye on the Wildwasser website and looking for the leeboard to be listed among the products available.

The Nomadic Express rig has the ability to carry a large, powerful sail, and its inflatable amas allow you to pack the entire rig into a bag that will fit into the trunk of a car.

Nomadic Express XT Kayak Trimaran Rig (reviewed): \$1,599

Nomadic Express Kayak Trimaran Rig (11-ft. mast and sail): \$1,295

Wildwasser Sport
303-444-2336
info@wildnet.com
www.wildnet.com

Sailing can add an exciting and rejuvenating element to an outing or expedition. The "free ride" the wind offers can extend your range and give you a chance to relax while still logging miles. As a sailor, you'll also become much more attuned to the wind—that invisible element that plays such an important role in shaping the landscape and seascape that our kayaks take us to. **SK**

Christopher Cunningham is editor of Sea Kayaker.