

KAYAK REVIEWS

Rapier 20

by Valley Sea Kayaks

The Rapier was a true clean-sheet design. You could say we came at the problem of producing such an ultrafast sea kayak from a direction different from that of some other companies. First and foremost, the Rapier had to be a capable open-water kayak, having sufficient stability to enable a competent paddler to exploit its speed in all conditions. We didn't want it to be a kayak that could be propelled quickly on the flat but became nervous, and thus slow, in the rough.

To date, we have been very happy with the result—fun and fast on the flat but really excelling in the rough, especially offshore in clean ocean swells. In fact, our worry is that this stability makes some paddlers believe it to be slower than it is because everyone expects quick boats to be super unstable.

The Rapier has some respectable achievements to its credit: It holds the record for the fastest kayak crossing from England to France and has had two wins on the kayaking sections of the Hebridean Challenge adventure race.

—Peter Orton, Director, Valley Sea Kayaks

REVIEWERS

GL: 5' 11", 165-pound male. Day trips, winds to 25 knots, waves to 2 feet. No cargo.

TW: 6' 1", 180-pound male. Day trips, winds to 20 knots, waves to 2 feet. No cargo.

TE: 6' 1", 200-pound male. Day trips, winds to 10 knots, waves to 1 foot. No cargo.

| | |
|------------------------|---------------|
| Length overall | 19' 11" |
| Beam | 17 3/4" |
| Volume | 13.24 cu. ft. |
| Cockpit size | 33" x 15" |
| Cockpit coaming height | |
| Forward | 13 5/8" |
| Aft | 7 1/2" |
| Height of seat | 7 7/8" |
| Weight | 44 lbs. |

THE REVIEW

First Glance

The Rapier is "easily one of the sharpest-looking fast sea kayaks on the market" (TW). The sheer line dips down around the foredeck, providing extra clearance for a close-to-the-hull racing stroke. The carbon/Kevlar hull has a clear-coat finish, and the seal at the sheer is "glassed" inside with Kevlar. The relatively flat aft deck is supported by foam pillars ahead of and aft of the hatch. "The finish was fine in every way; attention to detail was apparent throughout" (TW). The exception was the joint between the coaming and the deck, sections of which had separated by the end of testing.

The Rapier is "very light and an easy carry" (TE), although its 20-foot length makes it a bit "cumbersome for a solo carry. The carry toggles at both ends of the kayak made the tandem carry a simple matter; I appreciated that the location of the rear toggle didn't cause my hand to scrape against the rudder blade" (TW).

Fit

"The cockpit opening is long and narrow but relatively easy to enter despite the thigh braces. Once seated, I felt comfortable and secure" (GL). The coaming comes to a relatively sharp point forward, and "getting the skirt off of that point was a challenge" (TW).

"The foredeck has some height to it, but because the boat is so narrow, there's plenty of clearance for pad-

dling. There's also room for pumping the legs for power. The aft deck is low and doesn't get in the way of a layback" (TE). GL had plenty of hip room, and TE had just enough to "keep centered without feeling pinched."

The molded composite seat is "deeply contoured and provides solid contact with the boat. The seat curves upward at the back to keep the paddler from sliding aft, so there's no need for a backrest" (TE). There are a number of holes where the seat is bolted in place, allowing for fore and aft adjustment to shift the paddler's weight for best trim. "The pronounced, almost 5-inch-wide thigh hooks lock in for rolling yet don't get in the way for leg-pumping sprints. A half inch of padding would make it more comfortable, as my knees dug into it at times, but no other modification would be needed for most" (GL).



The deck layout is “stripped down for speed and very spare. There are a few bungees and grab lines running the perimeter of both decks” (TE).

The rudder pedals are pivoting toe pads. They “withstood the hardest pushing while sprinting without noticeable give—excellent for a lightweight plastic system” (GL). The rudder control line is aft of the cockpit and “could be positioned a bit farther forward for easier access” (TW).

The rudder “worked well to slowly steer the kayak in long radius turns” (GL). It could make “adjustments for weathercocking in crosswind conditions, but tight turns weren’t possible” (TW).

Stability and Maneuverability

GL and TE concurred with TW that “the initial stability of the Rapier was very tender compared to the average sea kayak; however, it was relatively stable compared to a surf ski or similar racing kayak. Secondary stability was remarkably stiffer than expected and allowed a comfortable margin of leaning before capsizing was imminent.” “This is not a boat for the inexperienced, but given its lack of initial stability, it didn’t feel so twitchy when underway and wasn’t so bad to edge” (TE).

TW noted that “paddling without the rudder was challenging—the kayak would yaw and wander off track,” while GL thought the Rapier had “excellent tracking with little noticeable yaw.” TE discovered that having the boat in proper trim is critical: “The Rapier tracks well, though it’s sensitive to where your weight is. By leaning forward, I could make it veer off line; leaning back allowed it to run true.” Although “the rudder was the most practical way to turn the Rapier” (TW), it “responded well to an edged turn. Putting the boat at a steep angle got the stern to skid around in a turn surprisingly tight for the length of the boat” (TE). For GL, the rudder was “necessary in a moderate crosswind to combat weathercocking. Turning down-

BEST FEATURES

- Speed
 - Secondary stability
- #### TO IMPROVE
- Coaming adhesion

wind was dicey—I had difficulty without the rudder.” “With the rudder, the Rapier handled fine in wind” (TW). “A bit of spray was thrown up around the narrow hull, but little reached the cockpit” (GL).

Speed

The Rapier had “lightning-fast speed, excellent acceleration; it could be a 5-knot cruiser” (GL). TW “cruised along at 4.5 to 5 knots. At an exercise pace, I was able to move along at 5.5 to 6 knots.” “The boat is flat-out fast. I could hold 5 knots at a relaxed pace and 6 to 6.25 knots at exercise level. In a sprint, I could just reach 7 knots, and I’m not in peak form. It is among the fastest boats I’ve paddled” (TE).

On wind waves, surfing was “nearly effortless. A few strokes, and it rode along beautifully on the wave. Minor inputs to the rudder kept it on track” (TW).

Roll and Rescue

Rolling was “not too difficult, but you may have to throw out an extra back sweep or brace at the finish. Thigh hooks and firm footpads lock you in. Layback rolls are possible owing to the low back deck, but they pull you out of the seat to an unstable position. On a calm lake, I was able to do an outrigger reentry, with and without a paddle float, by placing a paddle blade under the rear grab lines. Care was needed to remain centered, especially while turning into the cockpit” (GL). Reentry and roll worked, “although the thigh braces take a moment to get fully locked into and will flex quite



The cockpit has strongly hooked thigh braces, and its seat is adjustable for boat trim.

a bit if you don’t” (TE).

Cruising

The compartments have “enough volume for a multiday trip and possibly for minimalist weeklong outings” (GL). Only GL reported compartment leakage: “a half-pint in the stern and several tablespoons in the bow. Water leaked into the stern compartment through the bottom of the rear bulkhead.”

The Bottom Line

GL thought the Rapier would please “athletic intermediate or advanced kayakers looking for a superfast workout boat or a way to tack extra miles daily on a multiday tour. It’s a workout and race boat that rips.” “This is a fast, well-made kayak that grays the line between race-dedicated kayaks and traditional sea kayaks. I think the Rapier will become a popular kayak among recreational racers and dedicated fitness paddlers. Although it definitely appeals to the racing market, there’s plenty of space for touring, and the Rapier’s easy speed will eat up the miles on a long trip” (TW). “This is a boat for skilled speed-hungry kayakers. It can hold gear, but it’s lightly built: The Rapier is a thoroughbred that would be a shame to use as a packhorse. Keep it light, and go fast” (TE).

MANUFACTURER'S RESPONSE

We are obviously very pleased with the general results of the test, especially that we recorded *Sea Kayaker*’s lowest ever high-speed resistance figures. Considering the number of tests completed by *Sea Kayaker*, we take that as quite an accolade.

The rim is bonded with the same adhesive as we have used for several years with virtually no problems. While this seems to be an isolated case, any problems with our products do make me concerned. We’ll be able to determine the exact cause of the failure when the boat is returned and will implement any changes that might be indicated.

This season, the Rapier will see new rudder and outfitting options to better suit a wider range of paddlers and paddling styles. Another current development that will be of interest to some paddlers, especially those who might find it hard to justify the expense of such a specialty boat, will be the new rotomolded version launching in August. This will bring our total offerings in the category of fast open-water kayaks to three, demonstrating that we are equally committed to the fitness-enthusiast paddler as we are to those who prefer our more traditional skeg-equipped kayaks.

—Peter Orton, Director, Valley Sea Kayaks

KAYAK REVIEWS

RAPIER 20 MANUFACTURING DATA

Designed: 2005

Standard construction: Fiberglass with Diolen

Optional construction: Pro Kevlar (reviewed), Ultra Kevlar

Standard features: Navigator rudder, thigh grips, bonded foam bulkheads, ergonomic race seat

Options: Compac 50 pump, compass, reinforced keel strip

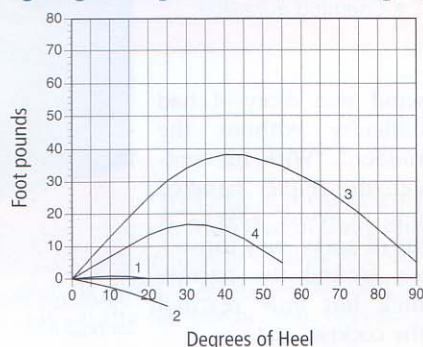
Weight: from 35 lbs., depending upon layout and outfitting

Price: \$3,099 fiberglass; \$3,649 Pro Kevlar; \$4,399 Ultra Kevlar

Availability: See website for a dealer locator

Manufacturer: Valley Kayaks, +44 (0)115 961 4995; info@valleyseakayaks.com; www.valleyseakayaks.com

Righting/Heeling Moments (Fixed-weight)

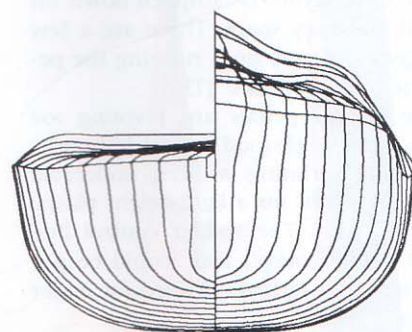


Stability Curves

1. 150 lb. paddler, no cargo
2. 200 lb. paddler, no cargo
3. 150 lb. paddler, 100 lb. cargo
4. 200 lb. paddler, 100 lb. cargo

TECH TALK

Readers interested in the full set of hydrostatics can find them posted on our website at www.seakayakermag.com along with additional data. An explanation of the terms and procedures used in the kayak test program is also available on the site.



SPEED VS. RESISTANCE

Resistance in pounds.

| Speed | Winters/KAPER | Broze/Taylor |
|-----------|---------------|--------------|
| 2 knots | 0.97 | 0.98 |
| 3 knots | 2.04 | 2.06 |
| 4 knots | 3.45 | 3.63 |
| 4.5 knots | 4.45 | 4.57 |
| 5 knots | 5.81 | 5.83 |
| 6 knots* | 10.40 | 9.09 |

*The resistance numbers are the lowest we've recorded for top-end speed.

HYDROSTATICS

| | |
|---|----------|
| Waterline length | 19' 7.4" |
| Waterline beam | 17" |
| Draft | 4.4" |
| Prismatic coefficient | 0.56 |
| Wetted surface in sq. ft. | 24.11 |
| Center of buoyancy | 51% |
| (Hydrostatics calculated with 250-lb. load) | |

As seen in
Sea Kayaker
Magazine
www.seakayakermag.com

EXPEDITION
KAYAKS