

# Experiments with Adding a Skeg to an Inflatable Kayak, Version 1.0

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By R. G. Sparber

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I own a Sevylor Colorado kayak. My only complaint is that this kayak is so well designed, it is extremely hard for me to improve it.

The only improvement that I have perfected was to add a foot support (red arrow). It is essential that my feet have something to push on so I can use my core muscles as I paddle. This support is just a length of black ABS pipe with a strap fed through it. The strap has hooks that engage handles on the gunnels.

The other improvement I wanted to make turned out to be a lot more difficult. Some inflatable and most hard plastic kayaks have a skeg or a rudder. A skeg reduces what is called Weathercocking: the tendency of the kayak to pivot into a crosswind. The ones I've seen are a plate about 4 inches by 6 inches and rather thin. This minimizes drag. The face of the skeg resists but does not eliminate kayak rotation.



Here you see a Sevylor skeg but it is not for my model. The key feature that gives me trouble is this little finger pointing up. It engages with a journal glued to the stern. No got.

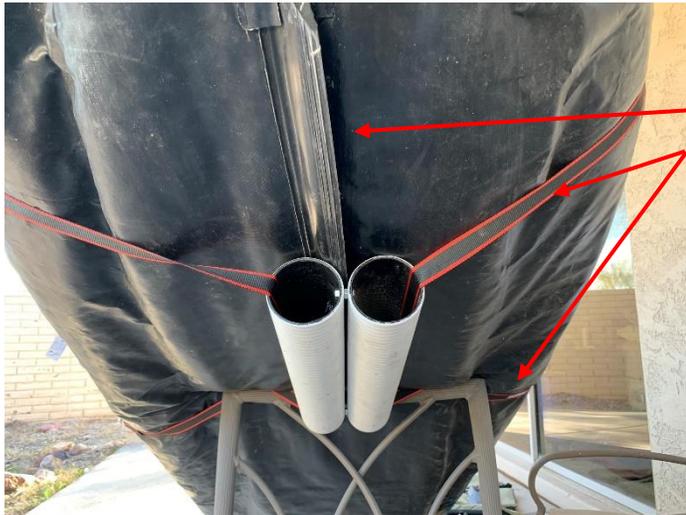
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The newer Sevylor Colorado kayak has a skeg that attaches to the bottom before inflation. Nice but I didn't see this as an aftermarket kit and the soft anchoring parts would be hard for me to make. Besides, if I was able to buy this skeg, I have done nothing new. What's the fun in that?

One thing that amazed me was a kayak I rented from REI. The hull had a series of shallow "tunnels" molded into it running from bow to stern. Being hard plastic and narrow, it was much faster than my inflatable. Therefore the drag due to these tunnels was not noticeable to me. It was very resistant to Weathercocking. In fact, it was resistant to sharp turns although overall handling was excellent. This got me thinking about how to retrofit my kayak to have a similar feature.



I eventually hit upon slinging my skeg under my kayak with some lateral support from the tiny skeg that was built in. The straps are secured to D rings glued to the sides of the gunnels. Nothing needs to be very tight. Note that each strap secures to only one side. This prevents the skeg from moving sideways.

As the kayak moves forward, the skeg will slide backward until it is snug.

The theory is that water will flow through these 18-inch long 3-inch diameter pipes which will resist Weathercocking. The reality is that my skeg acted more like an anchor making it very hard to move forward.

I think two factors are at play here. First, the flow through the pipes is restricted too much due to the length and diameter of the pipes. Secondly, the inside and outside surfaces of these pipes are corrugated which causes turbulence. Not good.



My second iteration involved cutting the pipes both axially and radially. At half the length and by being open, I figured the drag should be reduced. But as I looked at that corrugation, I knew it was still a problem. In fact, I never even tested this version. But it did get me thinking.



I had some PVC rain gutter. It was thin and smooth. I cut off two lengths about 12 inches long and cut 1 inch wide slots for the strap. Then I used PVC cement to weld them together. It was necessary to clamp the surfaces together about every inch to be sure the surfaces were in full contact.

This skeg also straddles the built-in skeg but I now only have one strap to adjust. That makes installation and removal faster.

## **Evaluation**

I own a pocket GPS that reads out average speed. By paddling the kayak across a small lake and then back, I was able to measure my speed with and without the skeg. This skeg reduced my speed by about 10%. However, there was a noticeable reduction in Weathercocking. The skeg did stay centered.

## **Conclusion**

This skeg would be good to install only in the case of having crosswinds. Otherwise, the increase in drag would be unacceptable. Given that no modifications were made to my kayak, if a better design comes along, it will be painless to toss this one.

## **Acknowledgments**

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I welcome your comments and questions.

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Rick Sparber

[Rgsparber.ha@gmail.com](mailto:Rgsparber.ha@gmail.com)

Rick.Sparber.org