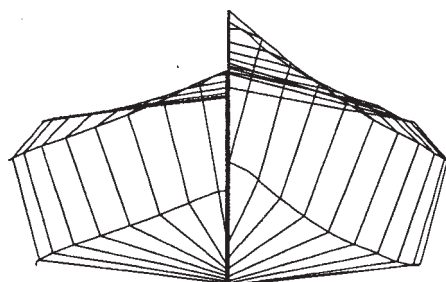
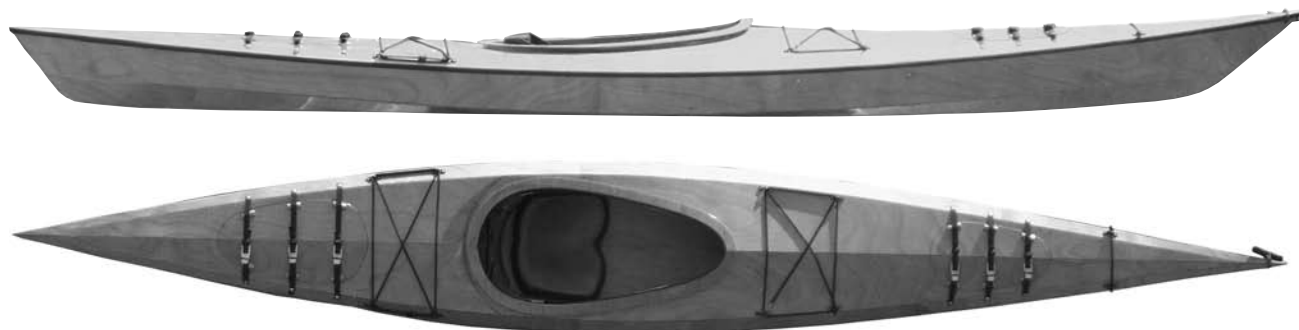


# Arctic Tern 14 by Pygmy Boats



Length overall	14 <sup>1/4</sup> "
Beam	23"
Volume	10.31 cu. ft.
Cockpit size	15 <sup>1/4</sup> " x 32 <sup>3/4</sup> "
Cockpit coaming height	
Forward	11"
Aft	8"
Height of seat	1 <sup>3/8</sup> "
Weight	39 lbs.
Center of buoyancy*	52%

\*With 250-lb. load

## Speed vs. Resistance

These figures are derived from mathematical models based on a limited number of towing tests on flat water.

Kayak weight + 250-pound payload  
Resistance in pounds, shown to hundredths to differentiate figures formerly rounded to tenths. A fit paddler can maintain a cruising speed at 3 pounds of drag. Only a few can work against 5 pounds of drag for long distances. See SK, August '98 page 43 for more details.

Calculated by the KAPER program by John Winters (Factor added for soft plastic hulls when applicable):

2 knots	0.89
3 knots	1.86
4 knots	3.02
4.5 knots	6.32
5 knots	9.07
6 knots	15.33

Calculated by Matt Broze using Taylor Standard Series:

2 knots	0.87
3 knots	1.82
4 knots	3.92
4.5 knots	6.95
5 knots	11.50
6 knots	19.40

## Hydrostatics

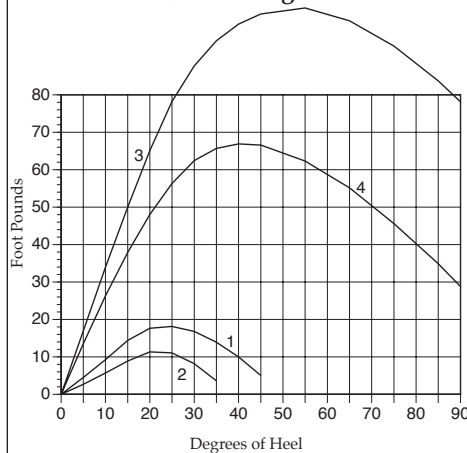
Paddler weight	150 lbs.	200 lbs.	150 lbs.	200 lbs.
Cargo weight*	none	none	100 lbs.	100 lbs.
Waterline length	12' 5.1"	12' 7.2"	12' 8.9"	12' 10.2"
Waterline beam	21.7"	22.1"	22.4"	22.8"
Draft	3.9"	4.6"	5.3"	5.9"
Prismatic coefficient	0.49	0.50	0.51	0.52
Block coefficient	0.40	0.42	0.43	0.44
Wetted surface in sq. ft.	16.54	18.14	19.65	21.10
Lbs./inch immersion	70.6	73.8	76.5	79.0

\* Fixed "paddler" weight has its center of gravity located 10" above the lowest part of the seat and 10" forward

of the seat at back. The "cargo's" center of gravity coincides with the kayak's approximated center of gravity.

Calculated by Nautilus System™ computer program

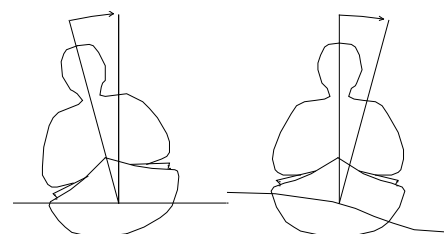
## Righting/Heeling Moments (Fixed-weight)



## 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

Calculated by Nautilus System™ computer program



Righting Moment      Heeling Moment

The same force that rights a kayak on flat water contributes to its rolling motion on the face of a wave.

## Reading the Stability Curves

The steeper the slope of the curve as it rises from 0°, the higher the initial stability. Beyond the maximum righting moment at the peak of the curve, the kayak enters an unstable region of decreasing stability that does little to slow the rolling of the kayak to the point of imminent capsize.

Note: Raising the center of gravity slightly will decrease the stability of a kayak, while lowering it will increase it.

## Arctic Tern 14 Design Statement

I designed the Arctic Tern 14 for those who wanted a smaller, more maneuverable kayak that would be fun in rough sea conditions. The boat's hard chines and shorter length make her very responsive to leaned turns, an ideal characteristic for playing in the surf zone. The recessed rear cockpit makes executing rolls and braces in rough water more comfortable. Her crisp handling and responsiveness

### Arctic Tern 14 Review

#### Reviewers

**KC:** 5' 7", 140-pound female. Two 5-mile day paddles. Wind 10 to 15 knots, waves to 1 foot.

**GL:** 5' 11", 165-pound male. Day paddles, from calm to 1- to 2-foot wind waves in 15- to 20-knot winds, roll and rescue practice.

The Arctic Tern 14 is the latest addition to the stitch-and-glue kit boats by Pygmy Boats. The varnished mahogany plywood always draws compliments, and the beveled deck and hard-chined hull "create long lines that give the boat a graceful and streamlined appearance, despite its relatively short size" (KC). The epoxy and varnish finish allows the wood grain to shine through, but "scratches easily, so it will require some maintenance to keep it looking sharp" (GL).

The Tern's 39 pounds was "so light to lift. Every time I hefted it, I was thrilled by how easy it was to shoulder-carry. For some smaller paddlers, just getting the boat to the water is an issue because of the weight of most boats. This boat design puts a solo-carry within the ability of paddlers for whom it was previously not possible" (KC). For a tandem carry, there's a toggle at the bow but none at the stern, but the builder could easily install one there.

The kayak tested had bungies laced through plastic padeyes forward and aft of the cockpit, a minimal arrangement, but the individual builder could attach any deck rigging desired.

The cockpit opening is long enough to get into seat first, yet the narrow shape of the opening forward made it possible to get well locked into the kayak. The height of the decks is scaled down for smaller paddlers, and allows paddlers to paddle without having to hold the paddle high. The low decks however cut down on foot room. GL, with men's size 10, "felt OK but there wasn't room to alter my foot position." "The coaming is recessed aft of the cockpit enabling the paddler to do layback rolls" (KC).

A molded foam seat is attached with Velcro to the inside of the hull. The piv-

draw attention from many experienced paddlers.

Although the Arctic Tern 14 was designed with advanced paddlers in mind, the end result has a much broader appeal. Teens and smaller adults appreciate the fact that there is a touring boat just their size. Lower wetted surface and good tracking makes keeping pace with larger boats almost effortless. Her light weight and 14' length make the Arctic Tern 14 extremely easy to cartop.

oting back band is "comfortable" (KC) and "doesn't inhibit layback maneuvers" (GL). "The side supports provide good hip bracing" (KC), and provide a place where the builder could add foam pads for a custom fit.

The thigh bracing, foam pads under the deck, "gave me good support and made me feel like I had good control of the boat" (KC). The foot braces are solid and are easily adjusted by foot.

The boat didn't have a rudder and "surprisingly didn't seem to need one. Running downwind in waves, the boat got a little 'dancey,' but it was so light and maneuverable I could shove it back on course with just a paddle stroke—a rudder wasn't necessary" (KC).

Both reviewers rated the initial stability as good and the secondary as moderate, and for GL, "fairly secure on its edge." The Tern is "light and responsive" to paddle strokes (KC) and can carve tight turns when leaned. The Tern tracks well and has "no noticeable weathercocking" (GL). It "holds its course admirably. It did a great job of tracking upwind, and held its course in a crosswind. Running downwind on waves in rear-quartering seas, the boat yawed a little but the boat's nimble responsiveness to paddle strokes made it easy to set straight" (KC). For GL, the Tern had "low windage, no noticeable weathercocking in moderate to high wind, and turning was not difficult upwind or down in 20-knot wind and 1- to 2-foot wind waves. It gets a little unstable in waves with big leans, but then moderate leans and sweep strokes were adequate to bring the kayak around."

Neither of the reviewers noted much water coming over the bow or causing much spray: "Pretty good for such a short boat" (KC).

"Because it is light and nimble, the boat comes up to speed instantly. It is delightfully easy to hold a touring pace" (KC). GL agreed the Tern has "good speed for its length, with excellent acceleration. Not a problem keeping up at normal cruising speeds."

GL surfed boat wakes "with great results. I found I could ride the wakes at a slight angle with a strong stern rudder and

Since her introduction, the Arctic Tern 14 has been among our most popular boats. Paddlers with a very wide range of skill levels and sizes are drawn to her handling characteristics, low weight and beauty.

*John Lockwood  
President, Designer, Pygmy Boats Inc.*

stay on the wave. Fast acceleration and quick turning helped catch the wakes."

The large cockpit makes for easy reentry from the water. The bungies on both the aft deck and the foredeck can be used to steady the boat with a paddle-float outrigger. "The cockpit drains of water with a single lift and pour from the bow" (GL).

The Tern's small size of course, limits its cargo capacity. "Stowage is OK for weekend jaunts, perhaps longer, but you'll need to plan and pack like a backpacker. There is some room for gear in front of the foot braces" (GL).

The hatches are secured with straps and tightening levers. A neoprene gasket creates a seal. Both reviewers expressed their surprise at the effectiveness of the closure: after rolling and rescue practice, KC reported dry compartments and GL noticed only a few drops of water got past the hatches.

The plywood bulkheads are glassed in. The aft bulkhead is close to the aft end of the cockpit opening, so it is easy to drain.

GL put a load of 55 pounds aboard the Tern and noted that it "turned and tracked comfortably with a load."

The Tern drew compliments for its appeal to smaller kayakers. "The Arctic Tern 14 is a godsend for smaller boaters. Its shallow cockpit design, nimble handling, and light weight are coupled with straight tracking and good speed. This boat is fun to paddle, and an excellent choice for smaller paddlers who can make their own boat. If you are handy at all, it will certainly be worth the effort [to build one]" (KC). "Small- to medium-sized paddlers, young and old, will love the super-light weight for car-topping. Beginning to advanced paddlers will enjoy paddling and showing off this beauty—stable enough for birding, yet playful enough for some rough-water fun" (GL).

## Design Response

I would like to thank *Sea Kayaker* magazine and the participants for reviewing our Arctic Tern 14. We are happy that the reviewers thought so highly of the boat. It has also been very well received by the public. Both KC and GL recognized the Tern 14 as a very efficient touring boat for smaller adults and a lively, responsive play boat.

Since her introduction, many people

who had never considered building their own boat have had a change of heart. While exploring the options in smaller touring boats, they find the Arctic Tern 14 to be on a fairly short list.

Her weight and beauty are certainly a draw. KC sums up the sentiment of these folks upon finding the Arctic Tern 14 when she states "the Arctic Tern 14 is a godsend for smaller paddlers." Because of her low wetted surface many smaller women have found that they can finally

keep up with their husbands.

Other paddlers choose the Arctic Tern 14 as a second boat, preferring to leave their larger, heavier touring boats at home when going on day paddles or out to play in rough conditions.

Thanks again for providing the paddling public objective reviews. It is a great service.

*John Lockwood*  
*President, Designer, Pygmy Boats Inc.*

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## Options and Pricing

**Designed:** 2001

**Standard Construction:** Plywood-core laminated inside and out with fiberglass and epoxy

**Standard Features:** Full Kit includes: Precision pre-cut panels of BS-1088 marine okoume plywood, 2 1/4 gallons of System Three epoxy, measuring pumps, fully illustrated manual, *The Epoxy Book*, 36 feet of 38"-wide fiberglass cloth (6 oz.), 31 yds. fiberglass tape plus small building supplies. Building time approx. 60 hours; due to curing times, spread out over 3 to 8 weeks.

**Options:** The Arctic Tern 14 is also available as a Basic Kit in which you buy your own fiberglass.

**Approximate Weight:** 32 lbs

**Price:** Full Kit, \$625; Basic Kit \$471

**Availability:** From the manufacturer

**Manufacturer's Address:** Pygmy Boats, P.O. Box 1529, Port Townsend, WA 98368. Phone: (360) 385-6143, E-mail: info@pygmyboats.com, Web: www.pygmyboats.com