DESIGNERS COMMENTS by Bob Ames

Requirements

Like most innovative product developments, boat design is the blending of design parameters targeted towards a community of users. The design of the Vanguard Nomad was driven by a set of requirements recognizing that trailerable daysailors for family's have been left out of the "trickle-down" benefits of performance design trends. Vanguard's Steve Clark, Nomad project manager, established many of these requirements early and some evolved as we synthesized conceptual design features. These requirements eventually evolve to become the characteristic features of the design.

The following lists some of the requirements for the Nomad.

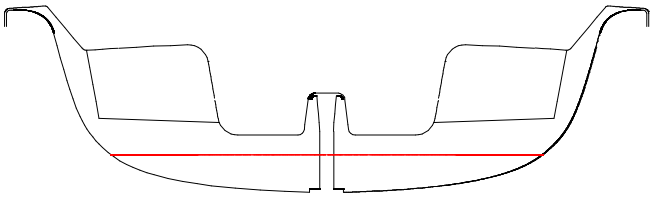
1) Make it perform well.
    a. Easily driven hull with planing potential.
    b. Performance sailplan.
    c. High aspect ratio centerboard and rudder.
    d. Asymmetric spinnaker.
2) It's a family boat; make it stable, manageable, and safe.
    a. Crew: Mom & Dad + 2 kids or three to four adults
    b. Children could be quite young. No open transom.
    c. The boat should be free of lines and clutter allowing the family to tack and jibe safely.
    d. The boat should be easily handled by the younger crew members so they can actively learn and enjoy the sailing experience.
    e. Short of lifelines, give the boat a sense of safety and comfort with inboard seating and safe movement from stem to stern.
3) Should be easy to own.
    a. Inexpensive to buy.
    b. Easily trailered and ramp launched. No need to buy the worlds largest SUV with a V8 just to have a boat. No cranes required.
    c. Can live on a mooring.
    d. Self draining cockpit.
    e. Beachable and/or navigable in shallow water.
4) Be a great daysailor.
    a. Storage and lots of it.
    b. Outboard motor and swim ladder optional.
    c. Out of the way place to put a cooler.

In meeting all these requirements, many of which drive the design in opposite directions, it's important to maintain the fundamental goals and priorities of the project as design compromises are made. For the Nomad the two overarching goals were: to give the boat the best performance possible while allowing the average family crew to sit inboard in comfort and safety.

Parameters and Features

As a general rule, length drives cost. A target of 17 ft. (5.24m) lands the boat in an affordable price range for most sailors. Anything smaller would force compromises on comfort and stability. The maximum beam on deck was driven largely by anatomical dimensions. There needed to be seating for adults where you can brace your feet against the centerboard trunk and lean outboard

without the coaming digging in your back. Also, we wanted to allow for the option to sit on the gunnel and have some width under us.



Section at Max Beam (11')

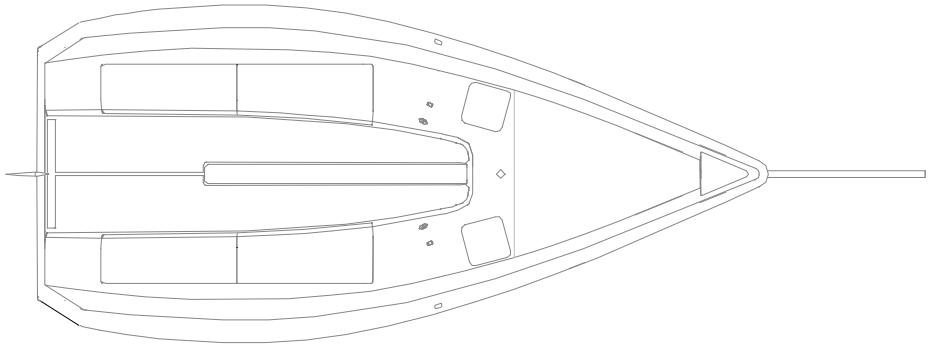
With these arrangement requirements, the boat would be beamy on deck and provide for a large crew righting moment if desired. Much of this additional beam was achieved by hull flare in way of the deck. The result is a deck that has a maximum beam of 8 ft. (2.43m) while the maximum beam of the hull is essentially 7 ft. (2.13m).

Nomad Sailplan

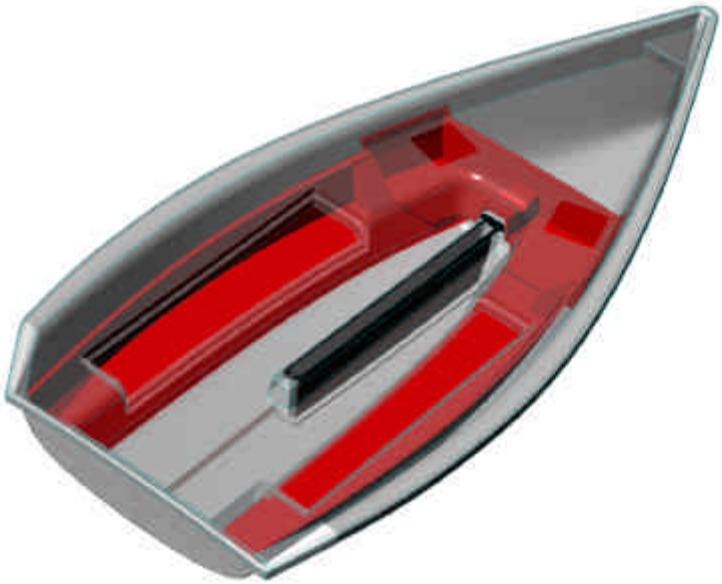
The Nomad hull and rig are all about maximizing performance. The hull has a fine entry and long waterline. The maximum waterline beam was set such that a family could easily board without the threat of capsizing. Underway, the deep, high aspect ratio centerboard allows for excellent upwind performance and the large balanced rudder offers control in all conditions. The Nomad will sail upwind at 4-5 knots and tack through 90 degrees. Offwind in moderate breezes with the asymmetric spinnaker, she'll easily sail 7-8 knots. In a fresher breeze of 18-20 knots, the Nomad will do a very manageable 10-11 knots.

The rig and sailplan fall into the moderate category as far as size is concerned. Rig height and sail area were set for control in high wind conditions without the need for excessive physical strength or expert boat handling skills. This keeps the rig weight down while also providing the added benefit of simple, one person de-rigging. With a roller furling jib, de-powering by sailing under main alone was preferred over reefing. This would have the added benefit of short handed sailing under main alone. With two full battens supporting a high roach main and jib size maximized to fit forward of the spreaders, the sailplan is powerful yet manageable. Jib sheets with 2:1 purchases allow all members of the crew to trim the jib.

Fundamental to meeting safety and comfort factors, a lot of effort went into keeping the cockpit clear of lines. To this end, the main sheet leads up from the transom into a trough below the cockpit floor and leads to the top of the centerboard trunk. Not only does this keep the cockpit clear of lines, it allows a cooler to fit under the tiller without interfering in main sheet operations. Likewise, the compression vang also keeps the cockpit clear as the boat tacks and jibes. An asymmetric spinnaker adds exciting offwind performance with the easy handling afforded by asymmetric spinnakers.



You can never have enough storage on a daysailor. You need a place to put your fishing pole, outboard, lifejackets, sails, cooler, anchor, and many other things that somehow find there way onboard. A single u-shaped locker wraps around the cockpit. Port and starboard seats contain two 3 foot seat hatches over a 6 foot opening, allowing for easy access and at the same time storage of long items. Forward, abreast the mast, are two openings that house spinnaker bags. The forward portion of the locker is also a structural member that supports the loading of the mast. It runs transversely connecting the hull and deck. The entire U-shaped locker is self-draining aft into a trough the cockpit floor near the transom, at which point it exits through a drain hole in the transom.



In the rare event of capsize, all lockers are free-flooding and self draining upon righting. This allows the crew to easily climb aboard the centerboard to right the boat. The centerboard locks up and down so there's no concern about loosing the centerboard in the trunk when you are trying to right the boat.

Construction

The Nomad hull and deck molds were cut by computer controlled robots directly from our design files. This ensures that the Nomad is extremely accurate and fair. The Nomad's hull and deck are vacuum bagged and cored. This allowed us to make the laminate very stiff and durable without having to add a lot of additional weight. This type of laminate does drive costs up, but the Nomads goal of trickle-down performance demanded it.

Specifications

Dimensions	**Imperial**	**Metric**
LOA	17.20	5.242304
Beam Max	8.00	2.438281
BWL (Beam on the Waterline)	5.39	1.644255
Lightship Weight	665.80	257.1836
Optimal Crew Weight	560.00	254.5455
Race Weight	1225.80	511.7291
Cruise Weight	1325.80	552.6382
Mainsail Area (Actual)	122	11.33306
Jib Area (Actual)	53.18	4.847208
Spinnaker Area (Actual)	196	18.20722
P	20.00	6.02
E	9.00	2.74
I	17.50	5.33
J	5.30	1.62
L	17.50	5.33
LP	6.2	1.82
ISP	20.00	6.10