

PRODUCT KNOWLEDGE INFORMATION SHEETS



PERFORMANCE FEATURES

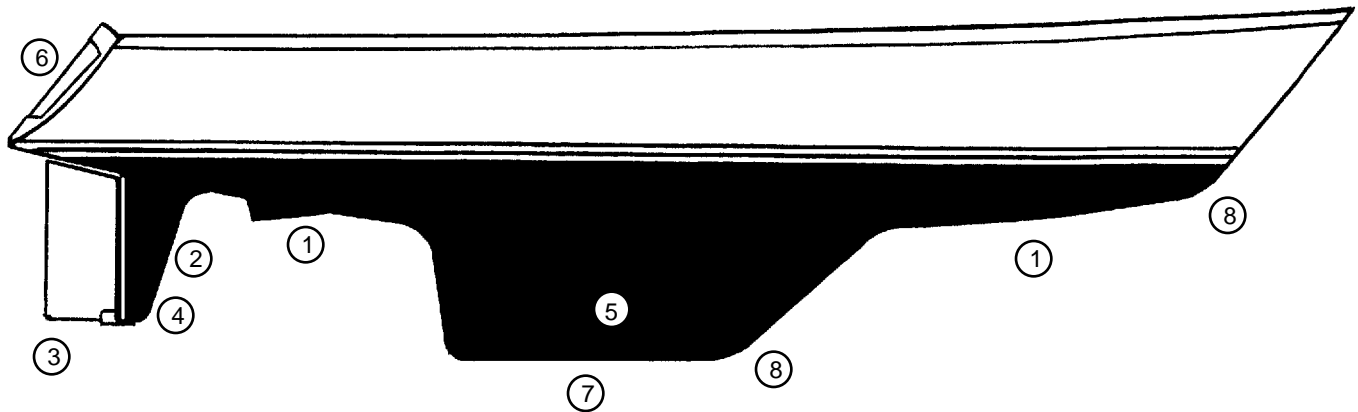


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Question: What are the features of the *Caliber Performance Cruising Underbody™*?

Answer: There are a host of features (below) that are common to all Caliber Long Range Cruisers. These features are combined into a hull design that you can rely on for superior seaworthy and performance characteristics.

Caliber Performance Cruising Underbody™



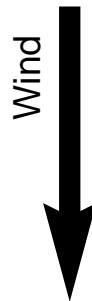
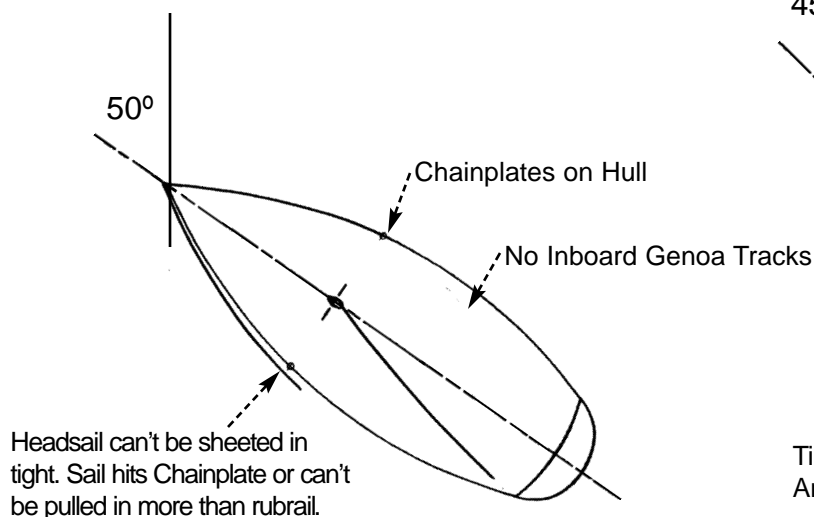
1. *Cut away areas forward and aft of keel to minimize wetted surface area.*
2. *Full Length Structural Skeg to Greatly increase the turning power of Rudder and it's strength.*
3. *Bottom of Rudder/Skeg is much higher than bottom of Keel for added grounding protection.*
4. *Rudder/Skeg in conjunction with Keel creates excellent directional stability.*
5. *High Ballast to Displacement Ratio with ballast located low in keel increases ultimate stability.*
6. *Self Rescuing Boarding Platform for easy recovery of Man Overboard.*
7. *Long Shoal Fin is perfect solution to blending of two extreme types of keels (Deep Fin & Full Length).*
8. *Impact Resistant Zones for added protection in case of grounding or obstruction impact.*

Question: What is the advantage of having Inboard Genoa Tracks and Chainplates?

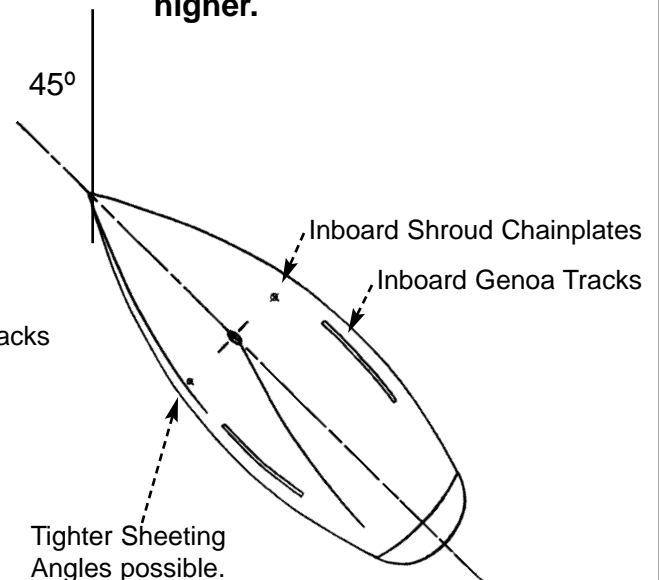
Answer: It's an advantage because sheeting in the headsail tighter means pointing closer to the wind. This will take full advantage of the optimum NACA modified fin keel. And, being able to point just slightly higher, results in a substantial increase in VMG (Velocity Made Good is speed directly towards windward mark).

Advantage of Inboard Genoa Tracks & Chainplates

Without Inboard Hardware
 Tacking Angles of 100° - 110°
 May foot slightly faster but
 overall VMG (Velocity Made
 Good) is down 20-30%
 because of increased tacking
 angles!



With Inboard Hardware
 Tacking Angles of 85° - 90°
 Inboard Shrouds and Genoa
 tracks mean higher pointing
 ability. VMG is substantially
 higher.



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Question: How is it possible to combine a moderate displacement hull with a performance underbody and still maintain seaworthiness?

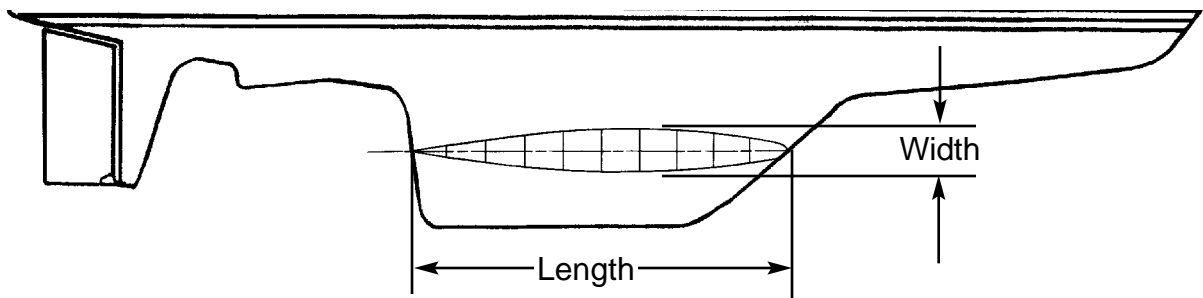
Answer: By carefully considering all aspects of underbody hull design to combine a moderate displacement hull with features that make it swift. Underwater section shapes that combine the best of racing designs with displacement cruisers. Wetted surface area is kept to a minimum, yet still maintaining strong directional stability with a full structural rudder/skeg combination.



Question: Why is the thickness of a keel important for performance if it's a NACA (National Aeronautics and Space Administration) foil?

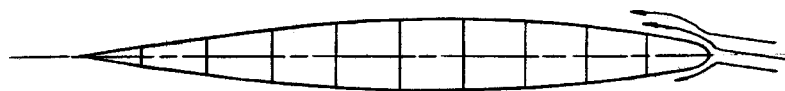
Answer: It's important to not only use a NACA section but the proper one. Maintaining an appropriate thickness of the keel as a percentage of its length is important. It allows the keel to develop lift for good windward performance. 12% is an optimum number for moderate displacement cruising hulls.

NACA Foil Keel Sections

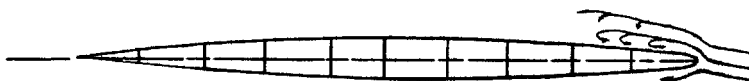


$$\frac{\text{Width}}{\text{Length}} = \text{Thickness Ratio (\%)}$$

Moderate Displacement Cruisers need an optimum Thickness Ratio of about 12%. Anything less than this number means the Keel Section will tend to stall when going to windward. Hence tacking angles are forced into the 100° - 110° range.



Optimum NACA 12% Thickness Keel Section: High Lift for Windward Sailing and Low Drag for Offwind Sailing. Tacking Angles of 85° - 90°



Narrow NACA Foil: Tends to stall out and force yacht to fall off when sailing to windard. VMG drops substantially with Tacking Angles of 100° - 110°