

A photograph of a sailboat with a large white sail sailing on the water. The sail is the central focus, extending from the bottom left towards the top left. The boat is white with a dark hull. An American flag is visible on the stern. The water is blue with whitecaps. In the background, there are mountains under a clear blue sky. The text "Anatomy Of The Cape George Cutter" is written in a bold, black, serif font, and "-A 30 Year Evolution-" is written in a smaller, italicized, black, serif font below it.

# Anatomy Of The Cape George Cutter

*-A 30 Year Evolution-*

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Photo: Carl Chamberlin

# Hull Construction

The hulls of our sailboats are of one-piece hand-laid moldings of fiberglass utilizing vinylester and polyester-based resins, bi-axial glass fabrics, rovings and mat. Nominal hull thickness achieved is 1/2" at the bulwarks increasing to 1" at the keel. A beamshelf of laminated Douglas Fir is integrally bonded and glassed to the hull as a foundation for the deck beams.



Cape George 34

# **Ballast**



One of three 3,000 lb. pieces for a 34' cutter

Once the hull is pulled from the mold, the internal cast lead ballast is lowered into the hull between the bilge stringers and ballast bulkheads. It is then encapsulated in a matrix of lead shot, resin and fiberglass. The forward section serves as the foundation for the mast step.



Ballast arrangement in 34' cutter



# Water & Fuel Tanks

The integral water tanks are constructed just above the ballast, below the cabin sole. A holding tank or optional water tank is installed in the bilge forward of the main bulkhead.

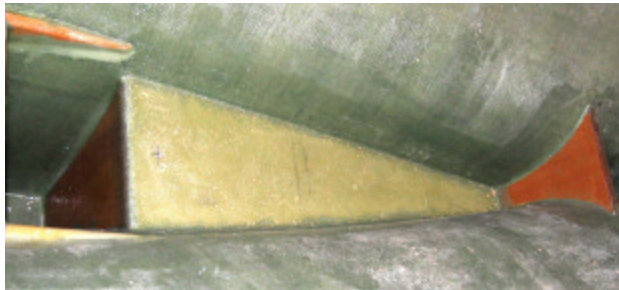


One of two water tanks located above the ballast

All of the tanks are equipped with an o-ring sealed bronze inspection port in each baffled compartment for ease of cleaning. The water tanks are subsequently steam cleaned for sterilization, which also completely removes the “fiberglass tank flavor” of the water, a common complaint of other fiberglass tanks.



Auxiliary water tank under construction



Fuel tank

The integral fuel tank is constructed next, aft of the bilge sump, of fuel-proof vinylester resin. Integral tanks are very space-efficient, providing utilization of hull volume where a conventional tank would be impractical to fit.

## Bulkheads and Deck Structure

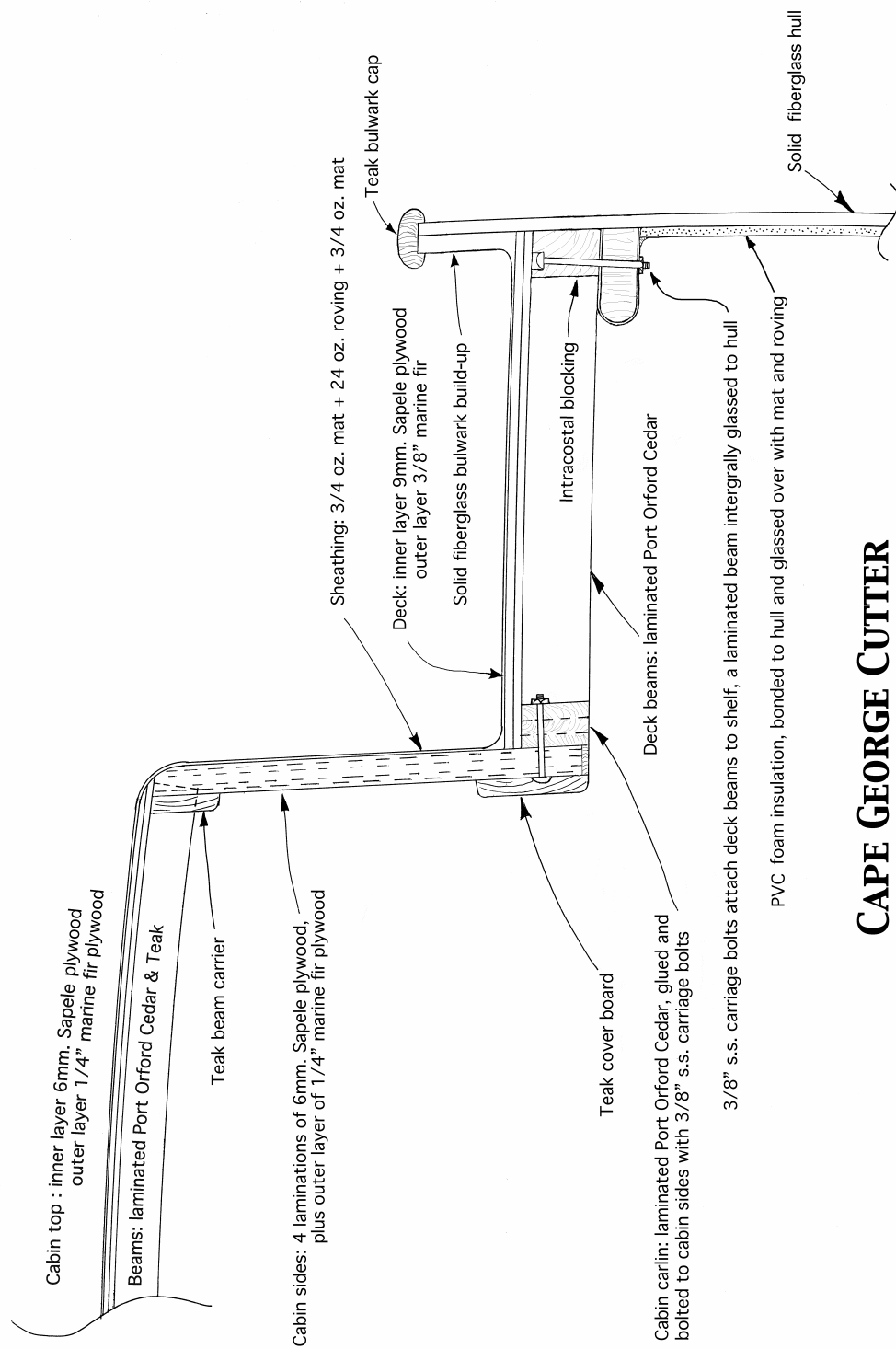


The 3/4" thick plywood bulkheads are installed next, sandwiching 1/2" pvc foam between the bulkhead and the hull surface to prevent "hard spots" of localized stress. The BS 1088 (Lloyd's standard) marine grade plywood used in the construction of our boats is a combination of Sapele, Jequitiba and Douglas Fir.

After glassing the bulkheads to the solid layup glass hull, 1/2" pvc insulation foam is bonded to the hull from chain locker to lazarette and overlaid with fiberglass rovings and mat. The purpose of this is twofold: not only does it protect the interior of the hull from condensation, it allows anchoring cabinetry framing to the inside of the hull using screws driven through this inner glass layer in conjunction with epoxy resin adhesives.



The deck beams and carlins are of laminated Port Orford or Alaska Yellow Cedar, premier species for boat building with excellent resistance to decay. The bulwarks, part of the hull itself, are built up with solid fiberglass to a thickness of 1 1/4" above the deck. The deck and cabin structure is heavily sheathed with fiberglass mat and rovings, from bulwark to bulwark encapsulating the entire deck structure.



## CAPE GEORGE CUTTER

Deck cross-section

# Cabin Structure

The cabin sides are laminated of five layers of 1/4" plywood on a curved form, then bolted to the inside face of the cabin carlins. A strong connection for this critical part of the structure. The cabin top beams are laminated of Port Orford or Alaska Cedar and Teak.



Cabin construction on Cape George 31

The cabin top beams are notched into a teak beam carrier at the cabin side to cabin top joint. A carlin cover finishes the lower edge of the cabin side to deck joint. Massive teak corner posts tie the cabin side structure together.



Cape George 38



## Interior Joinerwork



The interior joinerwork is custom-built to owner specifications. Cabinet panels and partitions of Sapele plywood are glassed to the hull, followed by the cabinet framing of Port Orford or Alaska Yellow Cedar, notched and fitted together. The framing is sealed, and hull surfaces gelcoated before the cabinet faces, bunk tops, etc., are attached. Cabinet corner posts of Sapele complete the look. All of the interior wood is finished with six hand rubbed coats of oil. The finish is velvet-smooth and easy to maintain.

The cabin sole is framed similar to the deck. The 1/2" plywood sub-sole is planked with 1/2" thick Teak and Holly. Unlike Teak-faced plywood, this allows for many refinishings of the surface through the years. Lift-out hatches permit access to the bilges and tankage.



Cape George 34 forward berth area

Teak hull ceiling strakes above the sole and Port Orford or Alaska Yellow Cedar ceiling battens above the bunks completes the look: a traditional wooden yacht built inside a fiberglass hull.





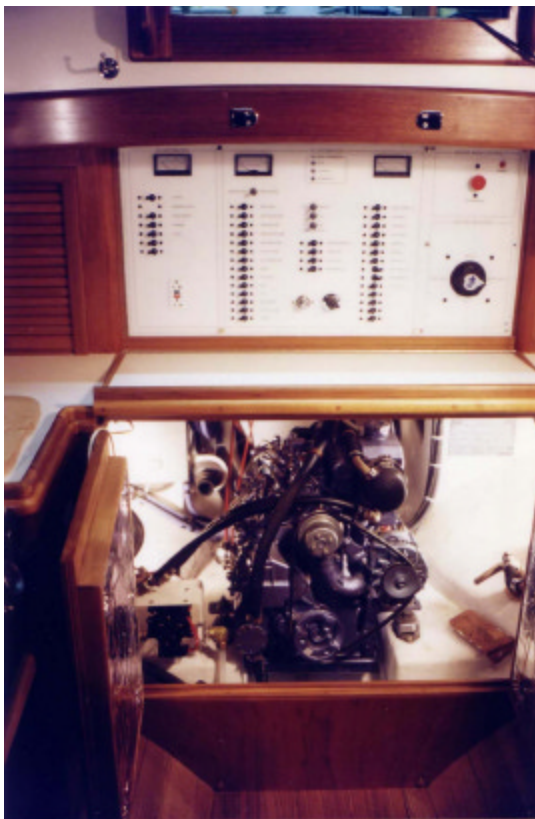


Custom quilted Maple, Mahogany and Rosewood table with internal wine bottle storage



Photos: Carl Chamberlin

34' Cutter Interior Details



34' Cutter Interior Details

Photos: Carl Chamberlin



# Hatches and Skylight



All of the cabintop hatches on our boats are built of teak, engineered to prevent leaking via use of ample gutters, drainage and seals. The hatches have inside and outside frames, with a generous drainage gutter between them. Extruded aluminum hatches don't fit the classic look of these vessels, nor do they keep water out as well, with their lack of drain gutters and reliance on perfect gaskets.



The companionway hatch integrates seamlessly into the cabin top structure



Skylight detail, Cape George 38

# Cockpit



Sunken cockpit seats, Cape George 34



Flush cockpit seats, Cape George 36

The typical Cape George cutter features a modest sized cockpit with bridge deck, high companionway sill and large cockpit drains for rapid water removal under extreme conditions. They are built according to the customers requirements for size, seating and coaming arrangement. Sunken cockpit seats provide taller back support along the coaming and a secure feeling for passengers. Flush deck seats are simpler to build and offer the option of sleeping in the cockpit at anchor.

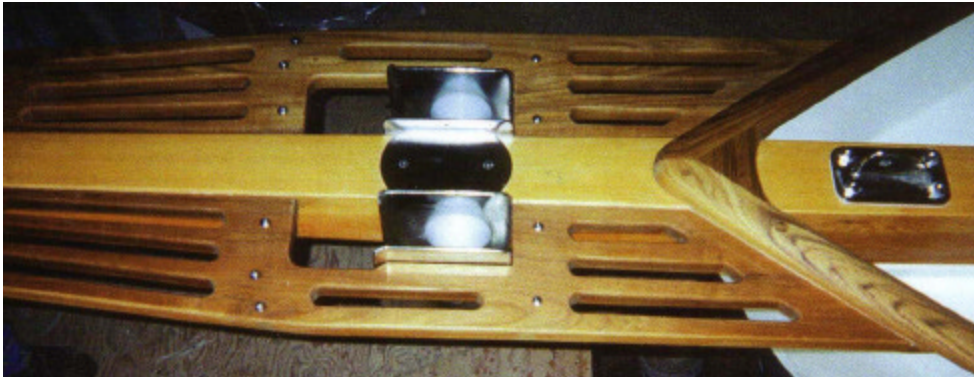
Teak decks are an option, but we recommend teak decking only in the cockpit area. Non-skid decks provide better traction and the lighter color is cooler in the tropics, both underfoot and in the cabin. Teak cockpits provide comfortable, aesthetically pleasing low abrasion seating compared with a non-skid finish.



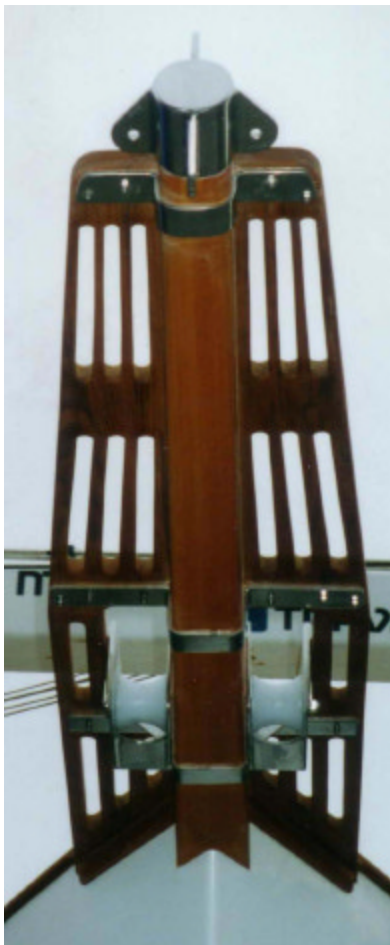
The seat hatches have fiberglass drains integrated into the perimeter to keep locker contents dry



## Rigging and Hardware



Cape George Cutters feature substantial bowsprits to maximize sail area and take full advantage of the cutter rig's versatility. This is a seaworthy bowsprit with a sturdy teak platform for a safe, solid footing under all conditions. Combined with a 30" tall pulpit and stanchion system built from 1 1/4" 316 alloy stainless tubing, it becomes an extension of the foredeck. Anchor handling is simplified as well, allowing tidy stowage of two anchors astride the bowsprit.



The bronze bobstay fitting at the waterline is integrally bonded inside the hull to take the bobstay and rig loads. An additional hole allows attachment of a nylon snubbing line to the anchor chain which effectively increases anchor scope.





Dual anchor roller



Crane Iron

All of the deck hardware on our boats is built in-house, of 316 alloy stainless steel, tig welded and hand polished to a mirror finish. Not only is the look fantastic, mirror polishing resists corrosion and staining better in a salt water environment for reduced long term maintenance.



Cape George 34

The chainplates on our boats bolt to the inside of the 1 1/4" thick solid fiberglass bulwarks with no thru-deck penetrations. This feature provides the best rig geometry with no worries of leaks through the deck.



Chainplate assembly

# Summary

In the thirty years since Cecil Lange built the first Cape George 36, these boats have evolved into a family of designs - 31', 34', 36', 38', 40.5' and variations up to 45' in length. Through the years, the methods of construction evolved based on the availability of new materials and the feedback from owners of these vessels around the world.

The basic concepts remain unchanged - the marriage of a modern wooden deck structure to a fiberglass hull takes advantage of the robust low maintenance fiberglass hull and beautiful custom look of traditional wooden vessels.

This concept lends itself well to those wishing to build a boat for themselves. We provide the hull and whatever additional components the builder chooses. A comprehensive builder's manual is underway, along with a DVD video showing step by step construction techniques.

William Atkin's Tally-Ho Major of the 1930s provided the inspiration for all of these designs, interpreted by Cecil and various designers - Ed Monk, John Anderson, Tim Nolan and Carl Chamberlin. Updated with modern materials and rig, they remain unsurpassed for those desiring a load carrying offshore vessel. They are not sluggish, either. In a seaway they show their true abilities - Even our smallest design, the 31 footer has logged 185 mile days at sea, while remaining easy to manage by a small crew.

Whether yard built or owner built, the end result is a go-anywhere sailing home.

To quote the ancient Chinese philosopher Confucius - "A journey of a thousand miles begins with a single step..."



Cape George 34 kit boat



Cape George 38

**Ready to get underway?**

# **References**

***Of Yachts and Men***, by William Atkin, copyright © 1949. Copyright renewed 1976 by John Atkin. Tiller Publishing ISBN 1-888671-07-06

***Best Boats to Build or Buy***, by Ferenc Mate, copyright ©1982 Albatross Publishing House, Inc. ISBN 0-920256-06-6

Chapter 17 - “The Master Builders”

***Northwest Yachting***, January 1997. “Cecil Lange and the Cape Georges,” by Peter Marsh

***Good Old Boat***, November/December 2003. “Cape George 38 - This Bluewater Cruiser Inspires Confidence,” by Ed Lawrence

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