

Tech Review



NEW BOATS BY R. SCOTT BILLQUIST

Switzerland's Fast Cat

EXPENSIVE CUSTOM MULTIHULLS HAVE DOMINATED the racing scene on Switzerland's Lake Geneva for decades, with the latest untouchable being Ernesto Bertarelli's 42-foot carbon-fiber catamaran *Alinghi*. From 2000 to 2003 Bertarelli won the Bol d'Or Regatta—Lake Geneva's foremost sailing event—so last year a group of his competitors got together to create a one-design 35-footer modeled after the untouchable catamaran.

"It became more and more expensive to build a fast boat to win the Bol d'Or," says Bertrand Cardis, director at Décision, the Swiss boatbuilder responsible

for Bertarelli's cat and Alinghi's two hulls for the 2003 America's Cup. "In the end, it turned out that nobody wanted to spend that much money to race on the lake. So we had to find a new formula."

Those behind the project immediately set limits on materials and costs and required a start-up fleet of six boats—seven buyers bought into it and placed an initial order for eight boats. The boats are 35'6" long (46'7" with the bowsprit) and 22'8" wide (28'8" with the crew rack extended) spans 28'8". The boats are built using readily available high-end materials with the hulls made of honeycomb core sand-

THE DECISION 35 CATAMARAN, a one-design raced in Europe, easily flies a hull in 6 knots of breeze.

wiched between skins of pre-impregnated carbon fiber. The center pod is a structural, load-bearing hull that never actually touches the water.

"It's a much simplified version of a complicated and expensive system of PBO cables on the Alinghi boat," says Décision's lead designer Sébastien Schmidt. "The pod is really strong and stiff, and that helps a lot for the loads and optimizing sail shape."

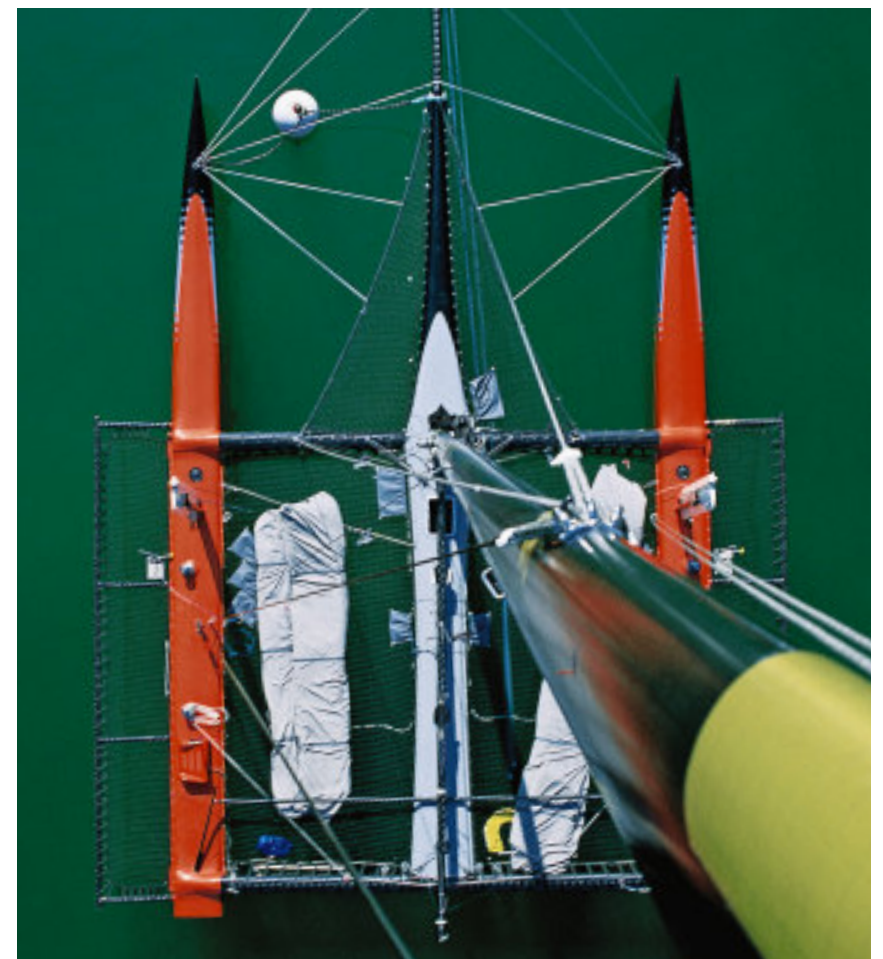
Asymmetric dagger boards are carbon

DECISION 35 SPECIFICATIONS

LOA	46'2"
LWL	35'6"
Beam	20'8" (28'8" with racks)
Draft	10'1"
DSPL	2,755 lbs.
Upwind SA (main & genoa)	1,640 sq. ft.
Downwind SA (main & reacher)	2,289 sq. ft.
Mast builder	Lorima
Structural Engineering	SP Technologies
Builder	Décision SA (www.decision.ch)
Winches	Lewmar
Blocks	Lewmar and Ronstan
Shackles	Wichard
Rigging	Ocean Yacht Systems (PBO and Kevlar standing rigging, Spectra and Vectran running rigging)
Instruments	NKE and B&G

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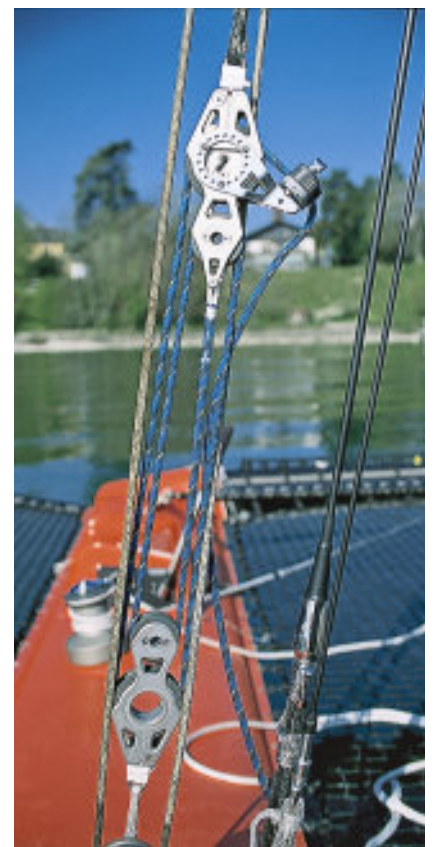


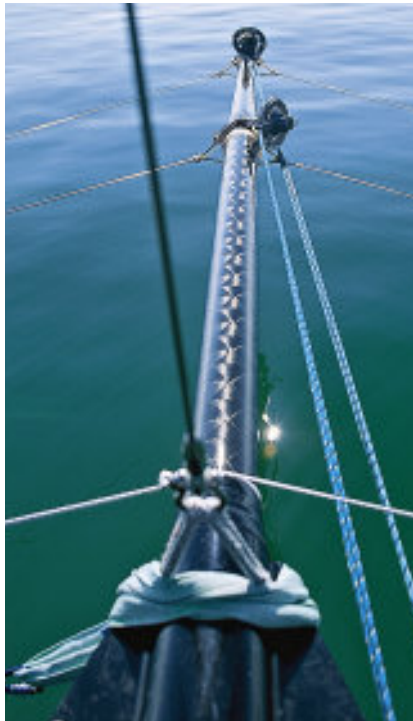
THE BOAT'S CENTRAL POD contributes significantly to the boat's overall stiffness. The powerful rig tends to pump in high winds and waves, so stabilizing the rig requires adjustable backstays and checkstays (right).

fiber, as are rudderstock and bowsprit. Class rules allow owners to select their sail material, sailmaker, and instruments, but the class sail inventory includes a main, jib, storm jib, genoa, and reacher. Upwind sail area (main and genoa) is 1,640 sq. ft.; the reacher adds another 649 sq. ft.

The Décision 35's rotating wing mast, designed by Rivoyre Engineering and built by Lorima in France, stands 68'9" above the waterline. First-generation masts were engineered on the light side, but when two broke and others cracked last year, subsequent masts were re-designed and existing rigs were beefed up with a baby stay and additional carbon laminates.

The boats are raced with 5 or 6 crew, usually amateur and semi-professional sailors. Crew No. 1 is the bowman, who manages the headsails, all of which are set on furlers. The genoa and main are normally carried upwind and then the "sausage" containing the reacher is set at





THE CARBON WINGMAST, which rotates as much as 45 degrees, is mounted on a ball on the central pod. In the background is one of the the boat's high-aspect daggerboards, which rides up and down on tracks, allowing it to be adjusted under load. Headsails are flown from the bowsprit, which is held true by a web of low-stretch line.

the weather mark. The reacher must then be partially rolled for every jibe or tack. The bowman also releases the mast rotator (the mast can be rotated as much as 45 degrees depending on wind angle); failing to do so can be catastrophic—one mast broke last year because the rotator wasn't released before a tack.

Crew No. 2 raises and lowers centerboards during tacks and jibes; No. 3 is the headsail trimmer; No. 4 eases the sheet during the tack or jibe then grinds; No. 5 is the tactician and trims the traveler. Crew No. 6 is the helmsman who trims the mainsheet via a hydraulic system controlled by a lever at the steering station.

To sheet the main, the helmsman pumps a handle; to ease it, a valve releases tension. The traveler needs attention as the wind builds from 8 to 15 knots, and it's a complex choreography of sheet, traveler, and helmsman. Because the boat has so much sail area, when there's more than 25 knots of true wind the crew is in survival mode. More than 30 knots, they're praying or—if there's enough time—lowering everything and maneuvering under bare pole.

Speed, Power and Tactics

"The boat has speed and power and all the gadgets that make it interesting," says

Bertarelli. The excitement of the boat and class racing has attracted famous multi-hull sailors Loic Peyron, Alain Gautier and Ellen MacArthur, as well as Russell Coutts.

"I've been looking more and more at the possibility of sailing higher perfor-

mance boats in Switzerland because I live here," says Coutts. "I love that they're powerful; you're powered up in 6 knots."

While tactics on the cats aren't on par with the match racing Coutts is accustomed to, the racing is fast and close. "On the ORMA 60, you lose so much time that you don't tack," says Philippe Durr, a seven-time world champion in the meter classes and veteran of Europe's ORMA 60 circuit. "The *Décision 35* is much more maneuverable, so there are more tactics and therefore the tension is greater."

"On the lake, we're aggressive, but it's still a game," adds Nicolas Grange, president of the *Décision 35* owners' association. "We have sponsors, but the boats are privately owned so that makes the project a bit different."

As a measure of success, *Décision 35*s have had several events to date and even swept the top-three places in the 500-boat Bol d'Or last July—an extremely light air affair. The overall winner was Grange's *Okalys*, with Peyron at the helm. *Alinghi* was third.

While the boats are primarily designed and built for lake racing in Switzerland, the owners' group hopes to develop additional events and ship the boats in containers to other venues in Europe, creating an overall circuit. Bertarelli has proposed a pre-America's Cup demo in Valencia in 2007. ♦



CAPSIZES ARE DISASTROUS, and expensive, so crew racks are required equipment. The helmsman's seat (right) is flanked by a hydraulic pump (not shown) used to trim the mainsheet.