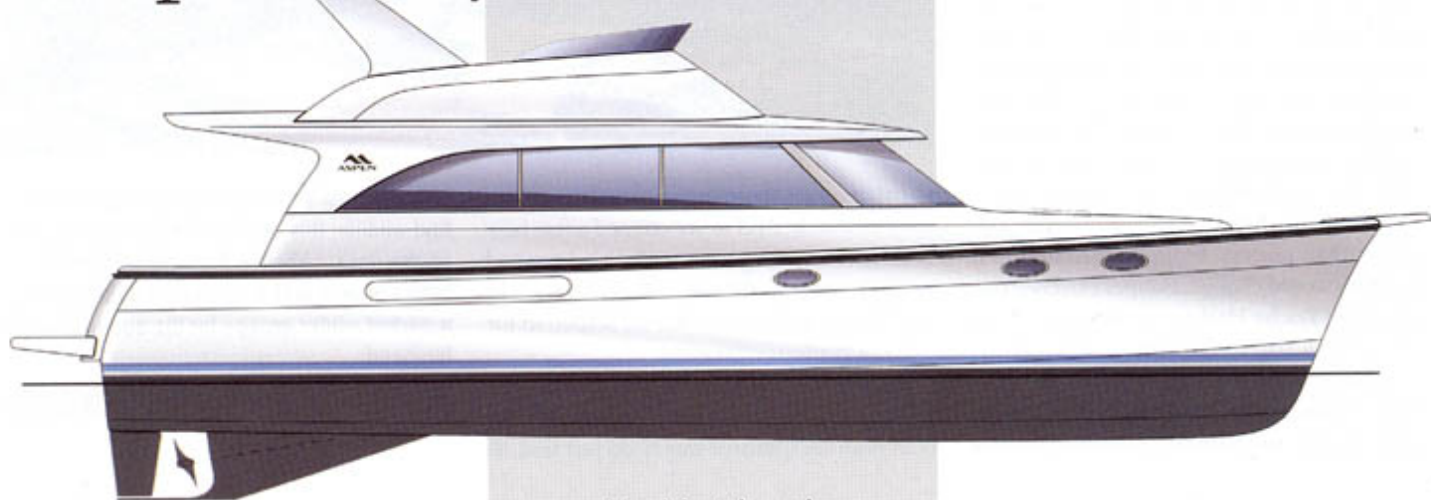


FUEL EFFICIENCY

Breakthrough

Aspen's Asymmetrical Power Cats



Exciting local design offers spacious accommodations and extraordinary efficiency

[Above] The Aspen 48 Power Cat features one engine and two differently shaped, asymmetrical hulls.

Larry Graf founded Glacier Bay Catamarans in 1986, and grew this Washington state company into the continent's largest producer of power cats. His high-speed displacement catamarans proved robust, efficient and highly seaworthy—qualities Graf liked to demonstrate by making non-stop ocean passages such as Alaska to Siberia across the Bering Strait, and Hawaii to Midway Island. However, after some 20 years at the helm of Glacier Bay, he sold his interest in the company and is now in the process of launching an entirely new and more radical series of powered multihulls that are best described as single engine, asymmetrical catamarans. Last November, *Pacific Yachting* had the chance to test the first Aspen 26—a 2/3-scale “model” of the upcoming Aspen 39 cruiser, and a “proof-of-concept” vehicle for Graf's latest ideas. Aspen Power Catamarans is currently preparing to build 39 and 48-footers in southern China, as well as several versions of the 26 at a yet-to-be chosen location in the U.S.

Strictly speaking, Graf's new design is a proa rather than a catamaran; the starboard hull is about 30 percent wider at the waterline than the port hull, to add buoyancy for supporting the engine and associated systems. In addition, both hulls are subtly asymmetrical—warped, if you like—in such a way that

they generate a turning moment that counteracts the pivoting action resulting from the off-centre drive. I refer to this unique boat as a catamaran rather than a proa because when it's afloat only a very keen eye will notice any asymmetry. What the casual observer does perceive is a nicely proportioned power catamaran with graceful clipper bows that produces very little wake at speed.

Efficiency Detailed Viewed out of the water, the patent-pending underbody of the prototype Aspen 26 becomes a lot more interesting. A streamlined blister on the bottom of the starboard hull enables the Yanmar diesel to be mounted very low, allowing for a short drive shaft with a drop angle of just 8 degrees. And thanks to a concave prop tunnel aft and a healthy 2-1 reduction gear, the 110 hp engine swings a generous 17-inch prop.

Together, these features add up to unusually high propulsive efficiency, while the exceptionally low resistance of the knife-like hulls does the rest.

Wave-making drag ceases to be a major impediment once the length-to-beam ratio of a displacement hull exceeds about 12-1, and even the wider starboard hull of the Aspen comes in nicely above this threshold. There are strakes along the flanks of both hulls to encourage displaced water to break away cleanly and to enhance dynamic lift, but like Graf's earlier Glacier Bay designs, the Aspen achieves very respectable speeds without planing.

In light ship trim, the 3,000-kilogram (6,600-pound) Aspen 26 delivers 21 knots at wide open throttle, leaving a narrow wake of about 6 inches. The prototype was fitted with water ballast tanks to emulate the displacement and weight distribution of the future 39 and 48' cruising models.

Loaded to 3,600 kg (7,900 lbs) displacement, the full throttle speed drops to 18.25 knots, but the wake is still less than a foot high. Contrast that to a typical 26' planing boat with the same 600-kg or 1,300-lbs of cargo stowed aboard. Assuming you packed enough power to climb onto plane at all, the wake would be impressive and fuel economy likely no better than 2 miles per gallon. By contrast, the

Aspen 26 can carry the 600-kg load at 15.2 knots while achieving 4.17 mpg—roughly a two-fold improvement in fuel efficiency. Engaging the trim tabs on the prototype 26 served to depress the bows, slightly enhancing speed/efficiency when running light, although they are mainly helpful for correcting for load imbalances or in strong crosswinds.

Highly Functional Design The asymmetrical shapes of the twin hulls seem to work just fine when it comes to steering and maneuvering. Accelerating from standstill to top speed, the boat tracked virtually straight with no more need for steering input than a well-designed conventional craft. Low-speed handling is similar to an ordinary single-screw trawler yacht, and a bow thruster will facilitate manoeuvring in production versions. When launched off its trailer, the boat backed straight and steered readily in reverse.

Judging from the brochures, the upcoming 39 and 48' cruising versions offer functional, split-level layouts and plentiful living space, thanks in part to the need for just a single engine room. The smaller yacht offers two staterooms, each with its own head, a pantry/storage room in the port hull, and above a "great room" arrangement incorporating the saloon, helm station and huge,

forward-facing galley. Power for the Aspen 39 will be a Cummins 380 hp diesel for projected cruising speeds of 17–19 knots at a burn rate of about 10 gallons per hour.

All in all, Aspen Power Catamarans, headquartered in Snohomish, Wash., is shaping up to be a fascinating new player on the local boating scene. In the face of today's precarious economy, this might just be the sort of fuel economy breakthrough that could attract some serious attention. Should some established builders take an interest, Larry Graf is willing to offer this proprietary technology under license. In the meantime it's full speed ahead to get the 39 and 48 designs finalized for production in Asia. ☺



[Above] The Aspen 26 prototype achieves a two-fold increase in fuel efficiency over many vessels its size. **[Right]** Out of the water, the Aspen cat's unique proa design is easily visible.



For more information

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