Procyon: Creating new answers

Story by Charles Mason; illustrations by Stephen L. Davis

Every now and then something comes along that could dramatically change conventional thinking. *Procyon,* a 65-foot sloop conceived by Olaf Harken, vice president of the Pewaukee, Wisconsin–based Harken, Inc., has many features that appear to do just that.

A year ago Harken built a model boat with features he believed could improve sailboat performance. Four criteria were at the top of his list: increasing sailing speeds 10 to 20 percent; increasing underway comfort by reducing heeling; creating enjoyable living spaces; and, finally, making the sailing rig simple to operate.

Harken turned the model over to a design and engineering team coordinated by designer Britt Chance. Some concepts were redefined, some were rejected, and the rest were developed into working structures. With a 151-day building schedule and major funding from Amoco Corporation, the boat will be ready for display at major shows this fall.

■ **Rig.** With no conventional mast and shrouds, the sailplan is supported by a Bi-Pod configuration featuring two carbon-fiber sections attached to the sides of the hull. Weight saving over a conventional rig is about 400 pounds, or 25 percent. The mainsail, no longer blanketed by a mast in front, is furled on a central stay kept in position by "claw"-type spreader retainers equally spaced up the length of the luff. New "flexible" battens permit them to be literally rolled up with the sail. The extended battens allow the main to carry a big roach for more working sail area, an option not available with current furling systems.

The Bi-Pod masts are intended to be "basculating." After the headstay is detached just above the furling drum, the sections can be lowered with the two supporting arms until the top of the section is about 20 feet above the water. This feature allows the boat to get under bridges and visit areas that normally would be impossible to reach.

■ **Stability** comes from a winged keel that can be canted to windward at angles of up to 25 degrees. Maximum cant should create 5 degrees less heel and produce speed gains of just under half a knot. Although Chance points out that the keel concept is not new—L. Francis Herreshoff had the idea half a century ago and, more recently, Dave Hubbard's *Red Herring* design used a canting keel—he has simplified the structure, addressing safety and hydrodynamic issues to make it suitable for the mass market. The canting mechanism, with its arm, takes up almost no space below.

The keel, hydraulically operated with an accumulator system, always has enough energy to move the keel from full cant on one tack to full on the other. Internal water-ballasting adds to the potential for a smooth ride, helpful on long passages.

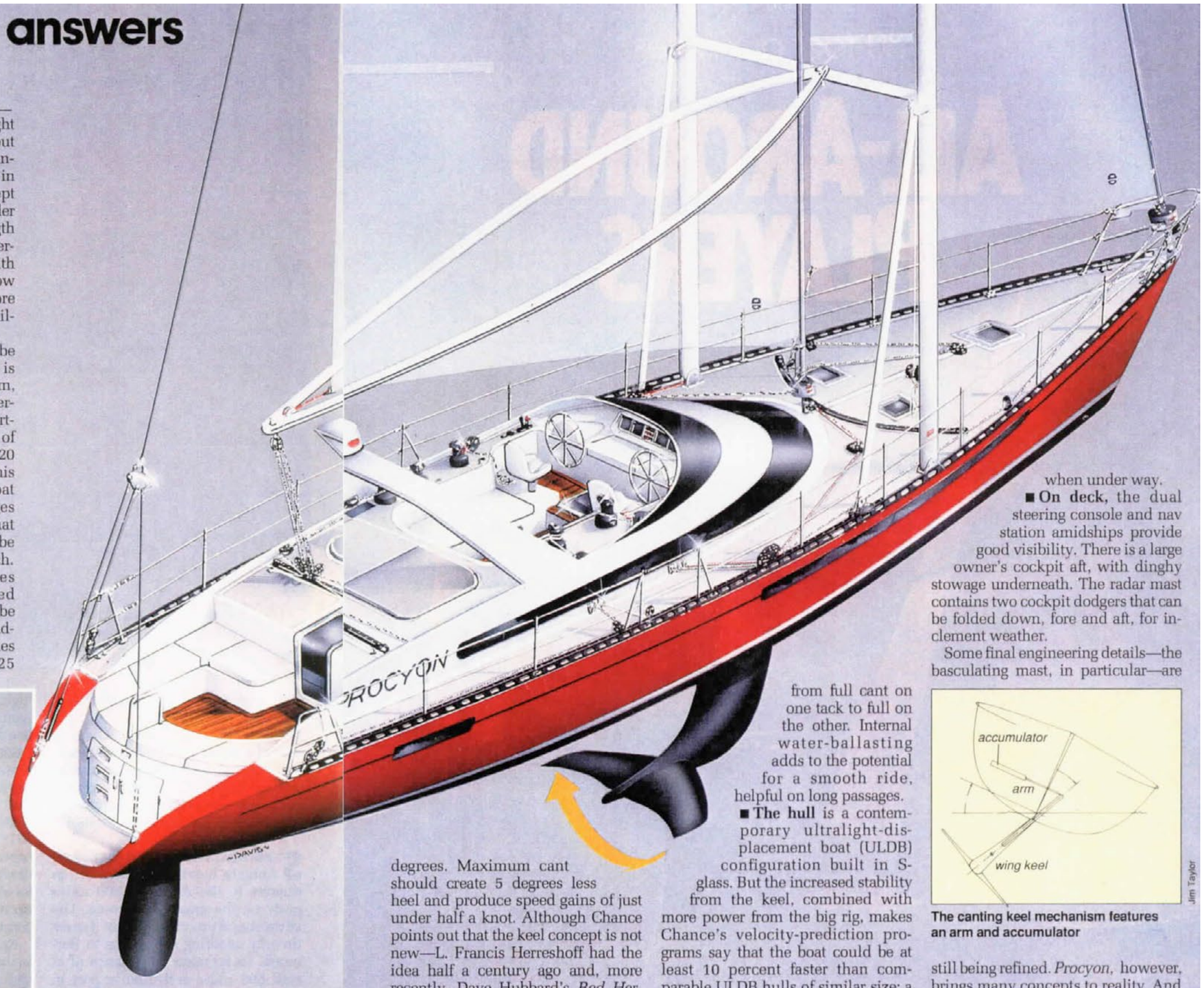
■ **The hull** is a contemporary ultralight-displacement boat (ULDB) configuration built in S-glass. But the increased stability from the keel, combined with more power from the big rig, makes Chance's velocity-prediction programs say that the boat could be at least 10 percent faster than comparable ULDB hulls of similar size; a similar speed differential over conventional designs could apply to boats of any size.

■ **Interior space** has been configured by Chicago architect Diane Atwood, who has blended the accommodations—three staterooms and two heads—in with the open living spaces, which are designed to be functional when under way.

■ **On deck,** the dual steering console and nav station amidships provide good visibility. There is a large owner's cockpit aft, with dinghy stowage underneath. The radar mast contains two cockpit dodgers that can be folded down, fore and aft, for inclement weather.

Some final engineering details—the basculating mast, in particular—are still being refined. *Procyon,* however, brings many concepts to reality. And if the reality works, there is no reason these solutions can't be used by others—on large boats and small.

As the traditional triad of speed, stability, and comfort continues to challenge sailors who are striving to improve the sport, *Procyon* may offer new answers.



Jim Taylor

The canting keel mechanism features an arm and accumulator

SPECIFICATIONS

LOA: 66'; LWL: 55'; beam: 15'8"; draft: 9'; displacement: 28,000 lbs ; sail area: 1,925 sq ft; power: 140-hp Yanmar diesel; tankage: 250 gal water, 150 gal diesel fuel