

## Souped-up sailers

**Hottest hulls on the Seven Seas today are the fast and unpredictable planing sailboats**

PRACTICALLY every sailor who has ever been left slatting around in the monoxide backwash of a powerboat has on occasion wished violently for just enough speed to sizzle up to the fellow and say a few words. Short of attaching rockets, his best bet today is to invest in a planing sailboat. The planers are light, tough little craft that can make anywhere from 12 to 25 mph, more than enough for an owner to occasionally enjoy the altogether lovely sensation of leaving a gas-burner behind.

Almost as surprising, a good planer will take a cruising yacht three times its length with no trouble at all. Until recently one of the unshakable axioms of sailboat design had been that the bigger the boat, the faster she goes. This natural law of sailing was first turned topsy-turvy by an English naval architect named Uffa Fox. Fox, a man noted for his unorthodoxies, claims to get most of his ideas while ruminating in the bath. (Once, in answer to a request for Fox's portrait from a highly respectable publication, the architect sent along a photograph which showed him reclining, Archimedeslike, in his tub.)

Whether Fox got his idea for the planing hull in the tub or not, he first tried it back in 1928 on a class of small 14-foot dinghies known as the International 14. The 14s were a clubby little bunch who had just gotten around to standardizing their hull design somewhat when Fox decided to crack the class.

Fox took the basic design, refined it, sharpened the bow and flattened the lines aft. He named the result *Avenger*. It was an apt name. *Avenger* was nothing less than a new and somewhat fearsome concept in sailing.

The big-boats-beat-small-boats

rule was based on the fact that every boat underway creates a bow wave and a stern wave. As a law of physics, it is impossible for such a two-wave system to travel much faster than 1.6 times the square root of the distance between the two crests (which is the same distance as the boat's waterline length). So every conventional sailboat was caught in a trap of its own making as far as top speed was concerned. Any attempt to pile on canvas and increase the speed beyond the natural maximum resulted in bigger and higher bow and stern waves whose drag nullified the added power.

The *Avenger*, on the other hand, was so light and fast that she jumped right up on her own bow wave until it was underneath her mast, then planed along on her bottom like a surfboard. The stern wave was practically eliminated and along with it the limitation on speed. Fox was delighted to find that *Avenger* kept right on gaining with a freshening wind as long

as her crew could keep the boat on its feet.

*Avenger* was promptly entered in the top International 14 race, the Prince of Wales Cup. In that race, Fox lapped 14 of his competitors on the two-mile course and won the race by five minutes. As an encore, he sailed the 14-foot *Avenger* across the Channel (a feat in itself) to Le Havre where he won three races in two days. His race score for the year was 52 firsts, two seconds and three thirds. With a good wind broadside, *Avenger* would come up and plane, accelerating from six to 12 knots so fast that she left her fellow International 14s behind lonely and obsolete.

Historically, *Avenger* did more for sailing than provide a superior International 14. She was the progenitor of thousands of planing boats that changed the complexion of racing for those who joined the new classes. For instance, the heretofore dull and spiritless business of inching in on the leaders on the downwind legs was done away with. Given a good breeze, the downwind leg of a planing race is marked by a quick scramble of crews trying to jockey their hulls into planing position the instant the mark is rounded. The first man to plane his boat can make three or four boat lengths on the slower fellows. And sustaining the plane has become an art in itself. A hull planes best when

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**WINGING DOWNWIND.** International 505 scoots across white-capped seas off England in full planing position, making 15 knots despite carrying small Firefly-class sails.



almost flat on the water and the crews have to be willing to hang outside of their craft like trapeze artists to keep them flat. In fact some classes developed "trapezes" strung from the mast to facilitate just this.

In the beginning not everybody approved, of course. The early Fox design was tricky, prone to swerve like a rodeo bronc. The acrobatics required put a premium on belly and leg muscle. But winning is winning. Not long after *Avenger's* debut, the whole International 14 class was going to Fox for their boats. The 14s became hot rods. "A floating bundle of nerves," snapped one sailor who remained among the unconvinced.

"A disease," agrees George O'Day, the leading U.S. planing sailboat man. "The International 14 keeps you scared. You never know what it's going to do to you. I love it."

O'Day was infected in Bermuda in 1949, a time when the planing boat was just becoming known in the U.S. A transportation insurance expert, he was a top Marblehead small-boat sailor, and in the natural course of things would probably have become one of our best men in the big ocean-racing yachts if he hadn't stepped into an International 14. He hasn't been really happy in anything bigger since.

Ask O'Day about International 14s

and he will probably tell you about the regatta he sailed up in Canada last year.

"This race," said O'Day, in a recent telling, "was held at the tail end of a hurricane. Thirty-two of us started out on a flat plane for the mark, but as the first five of us turned it, all hell broke loose. A hard puff hit, the first boat was dismasted, the second lost her sails, the third—me—was blown clear out of the water and capsized, the fourth's rudder snapped and they capsized. The fifth tried to avoid the chaos and capsized too. The rest of the fleet planed into this mess at 12 to 15 knots. Not only were we trying to survive in water cold enough to freeze, but we had to fend off boats that ran right over us, completely out of control."

It's easy to see that had planing been confined to the 14 class, it would not have had a big following. Not everyone needs quite that much excitement. Shortly after the war, however, designers in England and on the Continent began to tame the planing hull. They produced a dozen new planing classes (*see box*), most of them of gentler temperament than the 14. Boat makers turned out well over 3,000 hulls to these designs. In the U.S. the leading makers were Douglass & McLeod, who produced the popular Thistle. In England, Fairey Marine Ltd., manufacturer of

the famous Mosquito bomber during the war, found that the hot-molding process that produced the Mosquito was also a fine way to make a sailboat. Soon Fairey Marine's quarter-inch-thick plywood planing hulls were coming out at the rate of several hundred a year. To start, Fairey got Uffa Fox to draw them up a 12-foot planer called the Firefly. Fairey now makes a Firefly a day (in sailboating, this is mass production). At 600 planing hulls a year, the company is currently the largest manufacturer of sailboat hulls in the world. In the U.S. the distributor for Fairey Marine is George O'Day.

"I've sold almost 700 planing boats," said O'Day, "mostly from Fairey. I started five planing classes over here. In some cases I practically gave away the first hulls in the class to get it going."

However, after O'Day introduced the swift Jolly Boat Class to Marblehead Race Week the result was so spectacular that O'Day was able to discontinue his giveaway program shortly thereafter.

"They started us out among the small boats," said O'Day. "This was on a six-mile course. About 45 minutes later we came planing into sight around the point, headed right for the finish line at 14 knots. They were still starting off the last classes there, and we scattered them like chickens.

**FIRST** small planing hull, the International 14 was prototype for more recent planing classes. For racers who prefer rugged sailing, like North American Sailing Champion George O'Day (*at helm below*), this is still a favorite type.



**FASTEST** of the large planing classes, 24-foot Raven, needs more wind to plane than smaller hulls, has more speed than conventional boats of similar size. Only comparable boats as fast are the wide, flat-bottom scows, popular for lake sailing in midwestern U.S.



The race committee couldn't believe we had made it around so fast. They thought we'd missed a marker and kept yelling at us through their megaphones."

"Planing uses a new theory of sailing," said O'Day. "Now you carry sail enough to give you speed in the lulls, and you get through the hard puffs on guts and good sailing."

Capsizing does not excuse anyone from the rest of the race. The correct thing is to sail right out of the capsize and continue. The capsized crew, O'Day explains, swims in over the side, gets the sails lined up properly and submarines the boat along until the water starts to slosh out. Then they "bail like hell." In the last world championship for the 505 planing class, one boat went over three times and still managed a respectable eighth.

As grandfather to this new athletic breed, O'Day once tried to describe what planing meant to him. "I have a father-in-law," he said. "He once told me: 'George, you spend one-third of your time on an insurance business which pays you a handsome living. The other two-thirds you spend on sailing and selling boats which pays you practically nothing.'"

"There's no answer to that, I guess," said O'Day, "except that I wanted to bring planing to this country."

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## LEADING PLANING CLASSES

Figures refer to length, weight, sail area, number of hulls in the U.S., price and makers.

**Category I.** The hot hulls. Weigh less than 400 lbs., carry one or two men.

**INTERNATIONAL 14**—14 ft., 325 lbs., 160 sq. ft., 620 hulls, \$1,375 to \$1,475, Fairey Marine, others. Designs continually changing, but this class provides top international competition. The most challenging of the two-man hulls. **505**—16½ ft., 280 lbs., 150 sq. ft., 35 hulls, \$1,500, Fairey, others. Almost as hot as the 14, but more stable. Hull is standard but sails allowed to vary. Goes like a bomb in light air. **JOLLY BOAT**—18 ft., 310 lbs., 160 sq. ft., 120 hulls, \$1,445, Fairey. Completely standardized, fast in heavy weather. Capable of 22 knots. Fine for club racing.

**FLYING DUTCHMAN**—19 ft. 10 in., 374 lbs., 161 to 200 sq. ft., 300 hulls, \$1,550 to \$1,795 (\$1,750 fiber glass), Fairey, Stokvis, Siddons & Sindle, others. Variations allowed in hull and sail. Fastest of category in medium winds, loses to 505 and Jolly in light wind or heavy weather. Capable of 22 knots. Excellent lake sailer. Picked for 1960 Olympics.

**FINN MONOTYPE**—14 ft. 9 in., 330 lbs., 114 sq. ft., 25 hulls, \$1,090, Fairey, others. One-man, single sail. A brute in wind. The ultimate test of racing stamina. Planes quickly, standardized. Picked for the 1960 Olympics.

**Category II.** Hulls weigh 450 lbs. or less but have generally lower speeds and more stability than category I boats.

**FIREFLY**—12 ft., 250 lbs., 90 sq. ft., 275 hulls, \$785, Fairey. Completely standardized. Inexpensive interclub racers. **ALBACORE**—15 ft., 300 lbs., 125 sq. ft., 50 hulls, \$985, Fairey. Designed as a roomier family planing boat. Completely standardized. **JET 14**—14 ft., 225 to 235 lbs., 116 sq. ft., 315 hulls,

\$795, Siddons & Sindle. A stable version of the International 14. Standardized. **GANNET**—14 ft., 250 lbs., 125 sq. ft., 45 hulls, \$1,045, Marscot Plastics. Fox design in fiber glass. Rugged, no upkeep. **RHODES BANTAM**—14 ft., 300 lbs., 120 sq. ft., 675 hulls, \$575, Gibbs Boat Co., others. Faster than Firefly with the wind. **CADET**—10 ft. 6¾ in., 150 lbs., 55½ sq. ft., 200 hulls, \$445, Fairey, Medina Yard. Smallest planing boat. Not very fast. Good trainer. **THISTLE**—17 ft., 450 lbs., 175 sq. ft., 1,150 hulls, \$1,650, Douglass & McLeod, Inc. Heaviest in category I or II, needs good wind to plane. Most popular hull in the U.S.

**Category III.** Three-man boats. Weigh over 600 lbs. Slower to plane than category I and II hulls.

**RAVEN**—24 ft. 2 in., 800 lbs., 380 sq. ft., 257 hulls, \$2,850 to \$2,950, Medina Yard, Cape Cod Shipbuilding Co., others. Fastest in category III. Will beat a Star in medium and heavy wind. **HIGHLANDER**—20 ft., 675 lbs., 225 sq. ft., 215 hulls, \$2,275, Douglass & McLeod, Inc. Roomy, comfortable design. **FLYING FIFTEEN**—20 ft., 715 lbs., 150 sq. ft., 6 hulls, \$1,414, Tormenter Yacht Station. Only successful keel planing type. Needs stiff wind to plane.

**Category IV.** The scows. The original planing hulls. Developed independently of categories I-III. Highly specialized craft with blunt bows, flat bottoms. Suitable only for sheltered waters, but very fast off the wind.

**A SCOW**—38 ft., 2,000 lbs., 550 sq. ft., 50 hulls, \$5,500, Melges Boat Works, Johnson Boat Works. The fastest sailboat class in the world. Top speed 28 knots. **C SCOW**—20 ft., 650 lbs., 216 sq. ft., 500 hulls, \$1,695, Melges, Johnson, Stamm Boat Works. **D SCOW**—20 ft., 650 lbs., 252 sq. ft., 75 hulls, \$1,895, Johnson, Melges. **E SCOW**—28 ft., 875 lbs., 319 sq. ft., 300 hulls, \$2,350, Johnson, Melges. Top speed 25 knots.

**FAVORITE** of Naval Architect Uffa Fox, who designed first planers—and of Prince Philip, Duke of Edinburgh—is 20-foot Flying Fifteen, only successful planing keel boat. Here Philip, at helm, and Fox fly along in Philip's own *Coweslip*.

**FARTHEST** limit of rough-water planing was reached in Uffa Fox's Flying 25 design which weighs 1,750 pounds and planes only in a hard wind. No seaworthy hull larger than this 37-foot craft has ever been made to plane properly no matter how strong the wind.

