

**HARKEN '92**

*Yacht Equipment*

*25th Year*



# MILLENNIUM FACTOR QUATRO

One of the reasons Harken is located in Pewaukee, Wisconsin is that Pewaukee Lake forms the northeastern corner of the "golden triangle" of iceboating, which is Peter Harken's first love. For the 1990 - 1991 season, Peter built a new boat. Here he describes iceboating and the building of his fourth E-Skeeter, Millennium Factor <sup>Quattro</sup> :

**M**y sport is iceboating. It pumps your adrenaline like nothing else, and we sail the most efficient and beautiful machines on earth. That's a bold statement, but what other boat sails at 120 mph (190 km/h) — or more — with only 75 ft<sup>2</sup> (7 m<sup>2</sup>) of measured sail area and looks like a Ferrari?



"The E-Skeeter is an A-Class iceboat, one of the "unlimiteds" of our sport. We say 'it's not easy, it's not fair, and it's not cheap.' There are about 40 first class racing boats, mostly in Wisconsin, Michigan, New Jersey, and a few in Europe. 90% of the boats are home-built and cost upwards of \$10,000 in raw materials alone.....and countless hours of labor.

"In fact, you never stop working on them. A normal good weekend of racing will be five to eight races, an average of 10 miles (16 km) each and races last only 6 to 10 minutes. We spend a lot of money and time for not much sailing — it's nuts, but it's a real gas!

"During the summer of 1990 Bill Mattison and Paul Krueger, two of the longest reigning champions and most innovative sailors in the class, convinced me to join them in building new boats — really it didn't take much convincing. We each built an identical Skeeter with a



Peter Harken, Paul Krueger and Bill Mattison. — Billy Black Photo

carbon fiber and epoxy, vacuum-formed fuselage and mast. The ring ribs are 2 mm maple veneer vacuum bonded to 6 mm Klegecell. The 31' (9.5 m) Skeeter weighs 530 lbs (240 kg) complete with all gear. The main plank and springboard are hollow sitka spruce laminates with veil glass cloth sheathing.



"All bolts and rigging components are aircraft grade. Stainless fasteners break under the shock loads we encounter at high speed. The runners are 1/4" (6 mm) thick 1095 steel, treated and ground and mated to 6061-T6 aluminum stiffeners. The steering assembly, including the pedals and sprockets, is of 6AL-4V titanium. The 'Oshkosh' front steering assembly is chrome plated mild steel which we use for it's resistance to vibration, shock, and fatigue. To make it even more fun, you have to make everything, including the

fittings, from scratch.

"The new boat worked out pretty well. In February, Bill Dale and I won the Ice Yacht Challenge Pennant of America for Pewaukee Yacht Club. This trophy, first sailed for in 1881, is the oldest continually contested trophy in iceboating. The boat



is very fast in light air, but I had big control problems in heavy air. The boats have just outrun the size of the course and we're going to shorten the fuselage and springboard a little for next season. Oh, and we'll need to build new spars, too....and ...and....."



Billy Black Photo