A mooring that mimics a corkscrew

By Bob Stepno
Staff Writer

A New Hampshire construction company and a Massachusetts boatyard have begun introducing New England harbors to a different kind of mooring technology called a helical pier or helical anchor mooring.

A land construction tool's impressive holding power is being put to marine use in New England harbors.

Unlike conventional mushroom or concrete block anchors, the helical pier is a long, squared steel shaft piercing one or more 10-inch to 14-inch split disks, or helixes.

Installation equipment twists the shaft into the harbor bottom, with the welded-on helixes acting like screw threads.

"It's the same principal as the corkscrew; you don't really disturb the cork. You don't kick any of the bottom up, unlike driving in a piling," says David Kaiser, general manager of Mattapoisett Boatyard, Mattapoisett, Mass., the first company on Buzzards Bay to begin offering the moorings.

First used in the 1800s for lighthouse foundations in England, multi-helix screw anchors and installation equipment have been manufactured for decades by the A.B. Chance Co. of Centralia, Mo. On land, they are used by construction and utility companies to anchor retaining walls, streetlights and house foundations.

David Merrill, a sales representative handling the Chance equipment for the Jager Construction Corp. of Amherst, N.H., became interested in moorings while making sales calls to Cape Cod contractors repairing storm-damaged waterfront property.

Merrill made the rounds of harbormaster associations and boatyards this fall, and enlisted the Mattapoisett Boatyard as an installer.

In an early test of the system, a barge that normally lifts 6,000-pound block moorings was unable to move a single seven-foot shaft planted in the bottom, he says.

Merrill hoped to be able to give more specific data on the holding power of the moorings after a later demonstration in Marion, Mass. He had invited mooring experts, including a Massachusetts Institute of Technology researcher, to bring instruments to measure the force exerted on the mooring.

To install the helical piers, Mattapoisett Boatyard adapted a 34-foot workboat at a cost of about $5,000.

The boat was already equipped with a hydraulic crane, which was modified to add the hydraulic torque drive head capable of putting out 2,500 or 3,000 pounds of torque. Removable spuds, long pipes that reach to the harbor floor, were added to the sides of the boat to hold it in place when it is driving a pier.

Mattapoisett prices its service at $777 to install a single helix mooring and adapter. The price includes removal of an existing mooring and transfer of its chain and tackle to the helical pier mooring.

The helical piers can be driven through sand or mud to anchor in hard clay, rocky soil or other bottom types. Kaiser says the system should be able to install as many as 15 to 20 moorings in a day.

Inspections of such systems normally would be confined to a diver's underwater check of the mooring chain and tackle without pulling the mooring anchor itself.

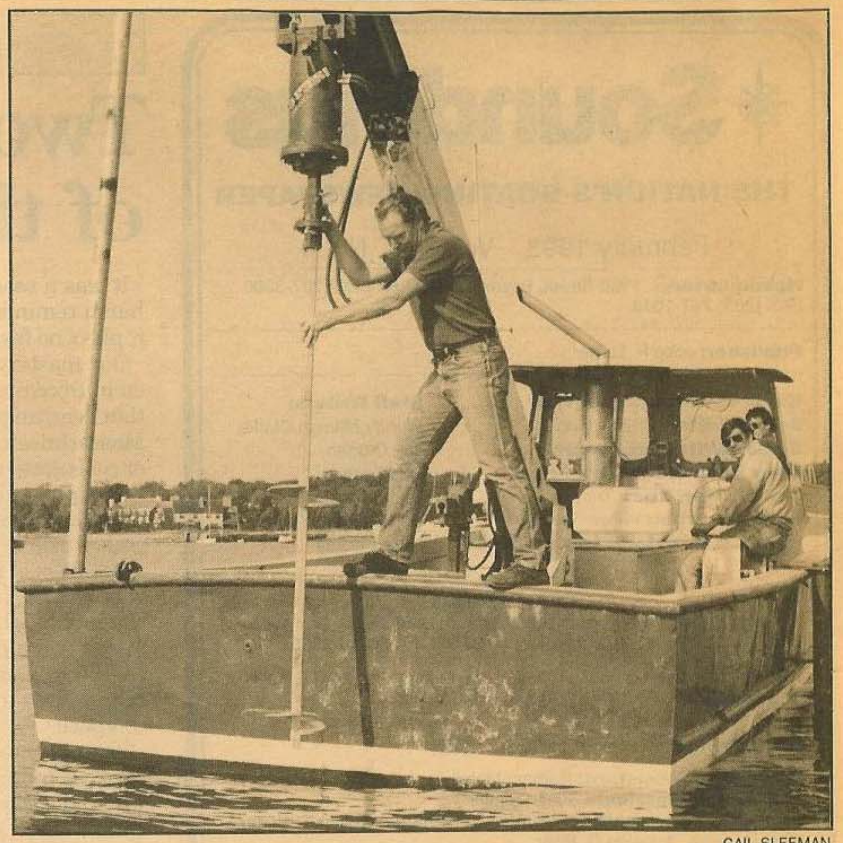
If necessary, the anchor can be unscrewed from the bottom, but a diver's assistance is necessary to align the drive equipment.

The buried pier has only a shackle above the harbor floor, working like a U-joint to keep chain from wrapping.

The system is priced to be competitive with conventional moorings, but should prove most economical for large boats, since increasing the holding capacity is just a matter of adding helixes or driving the shaft deeper, Merrill says.

His company plans to sell the systems to dealers who will become certified installers and will establish a system of marking holding capacity.

Additional information is available from Merrill at P.O. Box 325, Amherst, N.H., 03031; telephone (800) 722-0768, (603) 673-2095, or (603) 673-0096; or from Mattapoisett Boatyard, Inc., 32 Ned's Point Road, Mattapoisett, Mass. 02739; telephone, (508) 758-3812. ■



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David Merrill of A.B. Chance Co. aims a helical pier mooring toward the bottom, as Carl Collyer of the Mattapoisett Boatyard looks on.