How I Fitted Oak Hydrofoils to My 14-Foot Runabout

By Herbert R. Pfister

The most exciting water sport today is hydrofoiling. It’s boating, but different. Underwater wings lift your boat out of the water and you take to the air—or so it seems. Freed from the water, the boat rides smoother and faster on less power.

If your boat is 16 feet or less in length, there’s a good chance that you can equip it with foils. Aluminum foils are on the market now to fit most runabouts. They’re fine. But you can get by with a lot less money by making your own—out of good sturdy oak.

If you can work with wood, you can make foils. You shape them on a table saw. You’ll find the details illustrated in last month’s Popular Science. There’s also a big blueprint to help with the job. These foils were designed for the Popular Science Flying Platform Boat—a special fun boat built on a four-by-eight-foot sheet of 3/4” plywood—but they’re...
Level the boat before installing the foil supports

JACK UP THE TONGUE of the trailer until the keel is level, then prop it with a box and pieces of wood. Raise one trailer wheel, if necessary, to level the hull across the gunwales.

able to fly a conventional small boat, too.

Photos and drawings on the following pages show how I fitted foil supports to the sides of my 14-foot plywood hull. Broad braces on the supports distribute strain over a wide area, making the installation equally suitable for thin-skinned aluminum and fiber-glass boats. Slots in the supports permit on-the-water adjustment of the foil angle to suit the boat's trim and payload.

No modifications should be necessary to fit the oak foils to your boat. The tandem arrangement supports the hull at four points, so balance and foil location aren't critical. Regardless of your boat's length, mount the front foils a bit forward of the front seat, the rear ones just ahead of the transom.

Two bolts hold each foil in place. These can be removed quickly when you want to beach or dock the boat. A hinged arrangement can be added to swing the foils up out of the water when not in

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boat, too. Following supports to wood hull, distribute along the inner face for thin-water suit the necessary boat. The hull at location of boat’s a bit for ones just in place. When you hinge, swing the en not in

**Foil supports must be plumb and parallel to boat’s centerline**

**LARGE HOMEMADE SQUARES** align the foil supports. Use L-shaped square at left to set the supports at 90 degrees to gunwales, T-square in center of photo to aim them straight ahead.

**DRILL FRONT FOIL SUPPORT AND HULL** for long carriage bolts needed because of hull curve toward bow. Fit wide lower brace and cut % grooves in underside to house the bolts.

**USE WEDGE-SHAPED WASHERS** of oak inside the hull to provide a flat surface for tightening lock nuts. If foil supports are removed, holes in hull can be sealed with short carriage bolts.

**MAKE INITIAL SETTING OF FOILS** while keel is level. Mark plumb position, then measure off three ¼ graduations on each side (below) to aid in making adjustments on trial runs. You get most speed when foils are set for least angle of attack. Increasing “up” angle adds lift, slows boat. Tether to a foam block, which will float in case you should drop it overboard.