ADDING AN AUTOHELM AUTOPILOT

Bernie Tullington, *Wind Cheater,* #241, May 1998*

Even with the purchase of Ron Lyon's *Chanson*, I still had trouble getting my wife, Joan, out sailing. She still thinks it's work, and uncomfortable. So the search to make life simpler goes on. Repowering with a Yanmar 2GM20, getting Jack Wong to install a dodger, and a lot of elbow grease still hasn't convinced her. But, it *has* become easier to singlehand the boat. Her new name is *Wind Cheater*, by the way, and I'm really pleased with the T-30.

Probably the best addition that I have made to ease controlling the boat and sails is the installation of an Autohelm 2000 autopilot. This not only will tack the boat on command, but will hold her into the wind while I do things with the mainsail, or make a quick trip below. Speaking of that, the manual that came with the autopilot makes a big point about keeping a sharp lookout. It seems people get lax (with the tiller being taken care of) and forget about all the other boats out there.

This Autohelm autopilot is basically an actuated rod that pushes the tiller to maintain a course sensed by a built-in fluxgate compass. Installation sounded simple, but as usual Murphy's Law intervened several times.

Two measurements are critical. One is the distance from the rudder post to a pivot point on the tiller which will be driven by the autopilot — it must be exactly 18 inches. In the same plane and level is the dimension from the pivot point on the tiller to the pin that holds the base of the autopilot. This can be any of several dimensions, depending on the type of installation, by using extension rods.

As sold, this device assumes that it will be perfectly level when mounted to the boat, with the pushrod sitting on the pivot point on the tiller. We all know the tiller is curved, but that could be accounted for with an extension device. The real problem is the need to align the autopilot perpendicular to the tiller and 18 inches forward of the rudder post. This would result in the autopilot being mounted about 3 inches from the edge of the cockpit hatch cover — not a very sturdy mount. Incidentally, these autopilots generate quite a bit of force and require a firm mount.

Fortunately, another solution exists: buy a cantilever extension rod (another $35 or so), and mount the base of the autopilot against the vertical seat back in the cockpit. Now the seat back isn't exactly vertical; it also slopes outward from the stern; and it's about 3/4" too far from the center of the tiller to reach using the extension rod. So I cut a 2 inch circular block from a 3/4" thick piece of mahogany and, using a sander, shaped it to fit the seat back where it would present the autopilot rod at 90 degrees from the axis of the boat and level with the pin in the tiller. Well, *almost* 90 degrees, but close enough to work, after sailing around in a couple of circles to let the flux gate figure out the compass deviation.

After watching the start of the Whitbread race near Annapolis, I set the new autopilot on a course from Thomas Point Light to Number 1 at Herring Bay (near our marina). It brought me right home in a line a lot straighter than I have ever steered.

One other tip, the pushrod cannot be moved without power, but the instructions tell you to install the autopilot before you select where you will plug it in. But you need to extend the rod to check the alignment. I suggest doing it in reverse: get a general idea of the final autopilot location, and install the power outlet. Then you can run the pushrod in and out as needed to align the base support for the extension rod and the pin in the tiller.

AUTOHELM 4000 ON A T-30

John Zekas, *White Out*, #594, September 1998*

As discussed in the May '98 *Hook* (see above), the Autohelm 2000 does indeed work well on the T-30. On *White Out* I replaced my Autohelm 2000 with an Autohelm 4000 some time ago, and have been more than happy with its performance. For example, I'm pleased that it doesn't ask for a reef until about when *I'm* ready for one.

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* These items were originally published in *The Hook*, newsletter of the Chesapeake Tartan 30 Association

The installation instructions for the 4000 were insistent that the tiller ram be placed 18 inches forward of the center of the rudderpost, but the unit works well even though the ram was placed 22 inches forward of the rudderpost, so it would clear the lazarette hatch by an inch or two (see Figure 1 below). I presume this makes the autopilot tack the boat somewhat slower, but it *will* tack the boat with no problem. I employed a pedestal mount ($3\frac{3}{8}$" tall) for the outboard end of the ram to keep the ram level with its attachment on the tiller. The pin in the tiller is about $\frac{5}{8}$" higher than the tiller on my boat; tiller height determines the tiller arm mounting height. Extensions are available for the ram end where it attaches to the tiller, and I used two — 6" long plus $1\frac{1}{8}$" long, for a total of $7\frac{1}{8}$" — so the outboard end of the ram mounts very close to the intersection of the cockpit seat and seat back (i.e., the cockpit coaming).

Although I did *not* place the mount for the outboard end of the ram in the recommended fore-and-aft location so as not to interfere with opening the lazarette, I believe there is room to do so between the coaming and the outboard edge of the lazarette hatch. This would entail using the socket supplied by Autohelm without raising it above the cockpit seat at all. And it would require a tiller that would be about level with, or perhaps an inch higher than, the top of the lazarette hatch at the location of the tiller ram. Probably I will place an additional mount here eventually as a backup location, but I haven't experienced a failure of the mount in 15 years.

The deciding factor in choosing the Autohelm 4000 for *White Out* was the design of the unit, which permitted its mounting very close the outboard edge of the cockpit seat. I didn't want to make an uncomfortable spot on the seat when the unit was not in use.

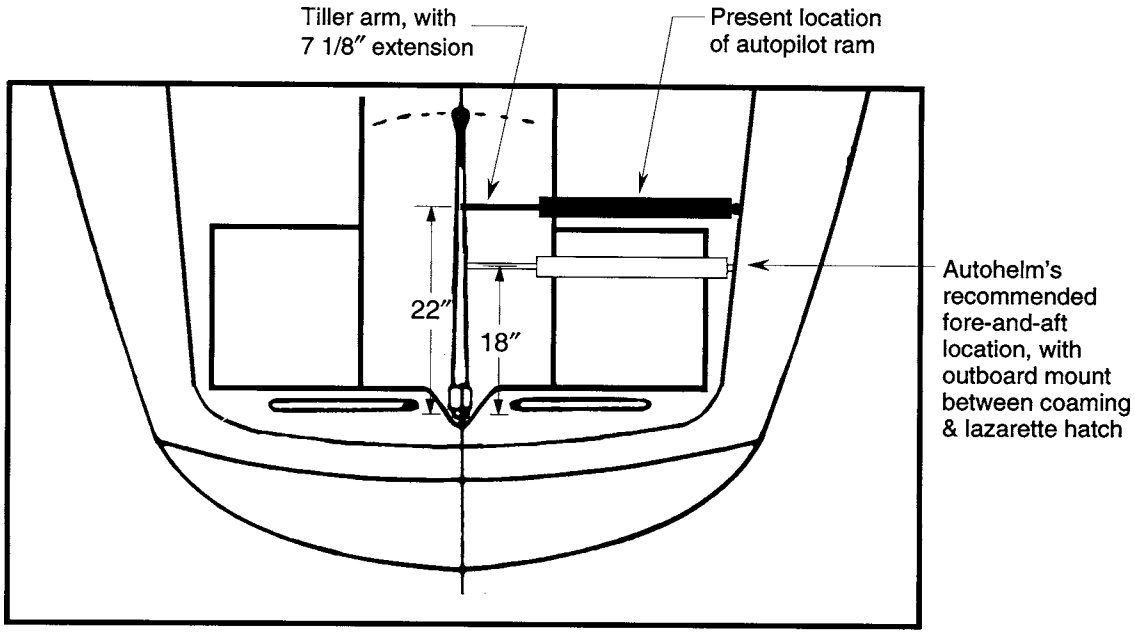

Figure 1. Schematic of Autohelm 4000 Mounting