

# TRAILER BOATS

AMERICA'S ONLY TRAILER BOATING MAGAZINE

trailerboats.com



# Tab, Please

**Can a \$120 set of trim tabs make a difference in boat performance?**

**We install a pair on a 19-foot Maxum bowrider to find out**

**Story and Photos by Jim Hendricks**

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■ Installed on a Maxum 1900 SR, the tabs dramatically decrease bow rise during acceleration, improving forward visibility and cutting  $\frac{7}{10}$ ths of a second from the 0-to-30-mph time without tabs.



Nearly any planing hull can benefit from a set of trim tabs such as those offered by Bennett or Trim Master. When properly sized and correctly installed, tabs can improve acceleration, eliminate porpoising, level unbalanced loads, smooth out a headsea and generally allow you to fine-tune the ride.

Trouble is, a good set of adjustable hydraulic, electric or mechanical trim tabs costs \$350 to \$450, excluding installa-

tion. The most common today are hydraulic tabs, and the installation involves routing wires and hydraulic lines, mounting switches and motorized pumps, as well as the tabs and actuators.

Simpler, less costly alternatives, such as fixed tabs and hydrofoils (which mount to the cavitation plate of a stern-drive or outboard), may help to plane a small boat quickly, but offer none of the fine-tuning aspects of adjustable trim tabs.

Recently, however, a new trim tab has hit the market. Called Smart Tabs, the product is made by Nauticus of Huntington Harbour, California. Smart Tabs are self-adjusting, so they fall between fixed and driver-adjustable tabs.

Like driver-adjustable tabs, Smart Tabs are sold in pairs, so that you install one on each side at the bottom of the transom. A gas-spring actuator creates the down force, while water rushing across the face of the tab when the boat is moving generates the up force. Thus, the tab angle is regulated by the speed of the boat.

Although it sounds simple, the dynamics get more complex. For example, like an archer's compound bow, the actuator exerts greater down

## MAXUM 1900 SR

Base Price (w/ trailer): .....\$22,997  
 Price as Tested (w/ trailer): .....\$23,687  
 Length:.....19' 0"  
 Beam:.....7' 11"  
 Weight:.....2760  
 Fuel Capacity:.....35 gals.  
 Max. Horsepower:.....250  
 Engine as Tested:.....MerCruiser 5.0L/Alpha 1  
 Horsepower:.....220  
 Propeller: .14" x 19" Mercury 3-blade aluminum

### Maxum Marine

Dept. TBM  
 P.O. Box 6050  
 Arlington, WA 98223-6050  
 800/824-2422  
 maxumboats.com

### TEST RESULTS

■ WITHOUT TABS ■ WITH TABS

Engine (rpm)	SPEED (mph)		FUEL (mpg)	
1000	5.2	5.3	2.7	2.8
1500	7.1	8.2	2.2	2.7
2000	8.4	10.3	1.3	1.7
2500	23.2	24.5	2.7	2.8
3000	30.1	31.0	2.8	2.8
3500*	36.0	36.0	2.9	2.9
4000	42.0	43.0	2.3	2.5
4500	47.0**	47.0	2.2	2.2
4600		49.0**		2.0

\* Optimum cruising speed — with and without tabs

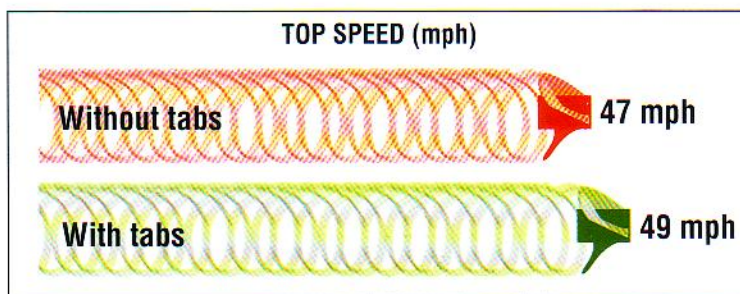
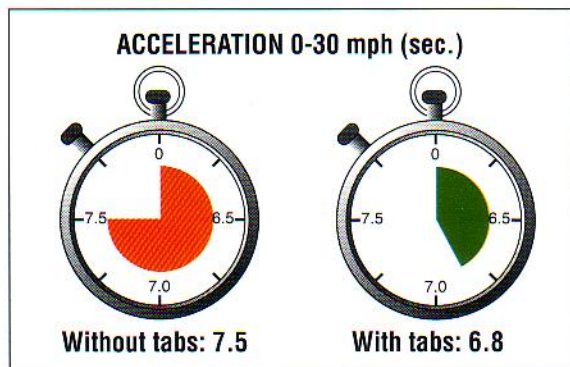
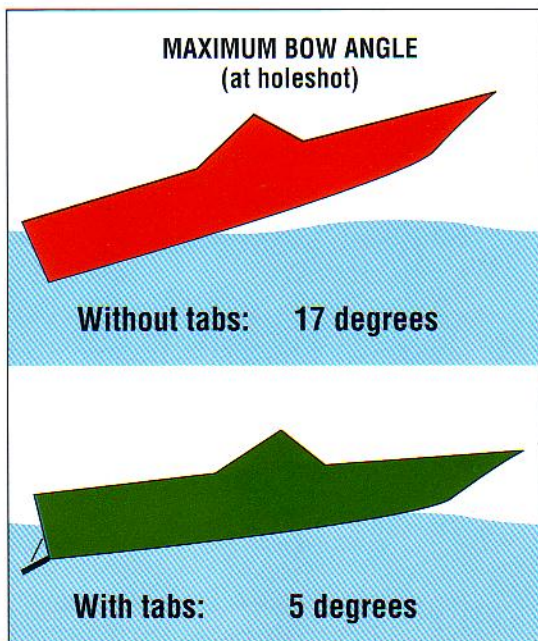
\*\* Wide-open throttle

force in its extended state than it does in its compressed state. This helps prevent excess drag, which can hurt speed and fuel efficiency.

To accommodate a range of trailerable boats, Nauticus offers three trim-tab-plate sizes and five actuators ranging from 20 to 80 psi. What's more, the effective down force of an actuator can be varied by adjusting the lower mounting point on the plate bracket. Each tab can be set independently of the other to compensate for prop torque or an unbalanced load. Suggested retail for kits ranges from \$119 to \$199.

### TEST PARAMETERS

We wondered how well these new tabs ►



would work. We were also curious as to how they would affect a boat's top speed and fuel efficiency. So we commandeered a 2001 Maxum 1900 SR 19-foot bowrider with a 7-foot, 11-inch beam, 19 degrees of deadrise at the transom and a dry weight of 2760 pounds.

Our boat was powered by a 220 hp MerCruiser 5.0L V-8 with an Alpha drive, and to begin both tests, we filled the fuel tank (35 gallons). The 1900 SR carried two adult males (with a combined weight of 440 pounds) seated behind the windshield, safety equipment and test gear. Before and after testing took place in the outer harbor of the Port of Los Angeles, California, with the wind blowing 10 knots, generating a mild chop.

We first tested without tabs, then installed Smart Tab Kit No. ST1290-80, which includes two 12x9-inch stainless steel plates and 80-pound actuators — Nauticus' largest plates and most powerful actuators. (See sidebar on the installation process.) We bolted each actuator to the middle of the plate bracket, and tested again.

### ACCELERATION

Given that the 220 hp stern-drive offers strong acceleration with the 1900 SR Max-Trac hull, the Smart Tabs offered only minimal improvement in the 0-to-30 mph times. Without tabs, the average time was 7.5 seconds; with tabs, the average time dropped to 6.8 seconds — a 10 percent improvement.

More impressive is the change in bow angle during holeshoot, as measured with an inclinometer. Without tabs, the maximum bow angle was 17 degrees; with tabs,

## TAB INSTALL

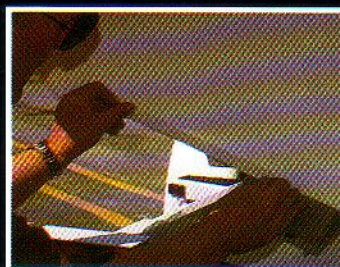
### Here is how to install the Smart Tab self-adjusting trim tab system in 10 steps



The Smart Tab system comes with all of the parts needed for installation. Here, the stainless steel tab plates, hinges and plate brackets have been pre-assembled according to the owner's manual, and optional zinc anodes have been added for saltwater use. Tools required include an electric drill,  $\frac{3}{16}$ -inch bit, countersink, Phillips screwdriver, two  $\frac{1}{2}$ -inch box-end wrenches, masking tape and marine sealant.



■ **STEP 1:** *The Smart Tabs should be installed as far outboard as possible. In this case, line up the outer edge of the tab with the notch in the transom where the reverse chine begins to slope downward.*



■ **STEP 2:** *Position a strip of masking tape  $\frac{1}{2}$ -inch from the bottom of the transom along the entire mounting surface.*



■ **STEP 3:** *Line up the bottom of the tab hinge with the bottom of the masking tape, making sure that the outer edge of the tab is in the correct position; then use the holes in the upper hinge as a template, marking each with a pencil.*



■ **STEP 4:** *Check inside the transom to be sure that you can drill without damaging anything. Using a  $\frac{3}{16}$ -inch bit, drill each hole you have marked. To keep the gelcoat from chipping or cracking, slightly countersink each hole.*



■ **STEP 5:** *Apply the strip of adhesive sealant tape (supplied with the kit) across the mounting surface.*



■ **STEP 6:** *Mount the tab with the stainless steel sheet-metal screws supplied with the kit. Dab each screw with a sealant such as 3M's 4200 or BoatLife's polysulfide bedding compound prior to installation.*

the maximum bow angle decreased to 5 degrees — a 70 percent improvement. This significantly improves forward vision during holeshoot, particularly if you're seated behind the wheel.

We also tested for minimal planing speed, and found that the tabs reduce the rpm required to plane the 19-footer. Without tabs, the minimum speed at which the boat would plane was 19 mph at 2200 rpm; with tabs, the minimum planing speed was 15 mph at 2100 rpm. With or without tabs, however, the 1900 SR planes nicely at 2500 rpm.

#### TOP SPEED

We sensed that the increased drag from the tabs might reduce top speed. Yet, the opposite occurred, according to our Stalker radar recordings. Without tabs, we recorded a top speed of 47 mph at 4500 rpm; with tabs, we recorded a top speed of 49 mph at 4600 rpm.

Here's the reason: Without the tabs, the boat has a tendency to porpoise when the drive is trimmed out, particularly in a chop. However, the Smart Tabs help provide additional stern lift and reduce porpoising, allowing us to make more effective use of the drive trim to boost rpm and speed — and that results is a 2 mph



■ **The stainless steel Smart Tabs are mounted much like hydraulic trim tabs, but the actuators are self-adjusting gas-spring struts that provide down force. Water rushing across the faces of the tabs creates lift.**

improvement at wide-open throttle.

#### FUEL EFFICIENCY

The Smart Tabs do not appear to affect fuel efficiency in any significant way. Optimum cruising speed is the same with and without the tabs — 36 mph at 3500 rpm, where the 5.0L-equipped 1900 SR achieves 2.9 mpg for a range of 91.3 miles (based on 90 percent fuel capacity), turning a 14x19-inch three-blade Mercury aluminum propeller.

#### RIDE AND HANDLING

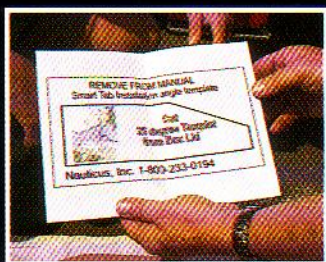
This is subjective, since we cannot put a

measuring stick to ride and handling. Yet, there is little question that the Smart Tabs make the ride more comfortable in a 1-foot wind chop. A good gauge is our ability to hold the radar gun steady. Without tabs, we had to hold the gun with two hands, and even then, reading the display was difficult. With tabs, we could hold the radar gun with one hand and read the display with little trouble.

Cornering also feels more precise and consistent with tabs, although the boat has a tendency to skip when trimmed out and brought about hard at high speed, with or without tabs. At no-wake speeds, however, the Smart Tabs largely eliminate low-speed wander — an annoying, yet common characteristic of deep-V hulls with single sterndrives. This may not work on all boats, but it is effective on the Maxum 1900 SR.

Smart Tabs are not a good fit for every boat. Even Nauticus owner John DeAgro admits this. "If you have a heavy boat that is 25 feet or longer, Smart Tabs are probably not right for you," he explains. "You would be better off with driver-adjustable tabs.

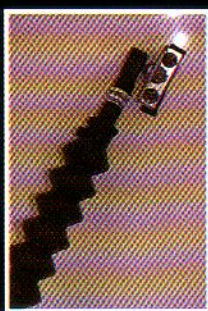
"However, if you have a smaller boat and want to improve the holeshoot, ride and handling, these self-adjusting tabs may be all that you need."



■ **STEP 7: To set the angle of the tab, use the template in the owner's manual to create a cardboard jig, reflecting a 25-degree down angle.**



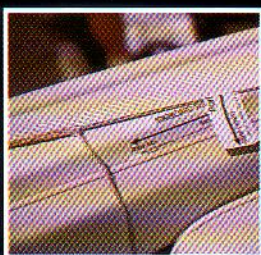
■ **STEP 8: Attach the bottom of the actuator to the mid-point of the plate bracket, and snap the top of the actuator to the transom bracket. Next, line up the top of the cardboard jig with the bottom of the boat, and allow the bottom of the plate to rest squarely on the angled portion. Find the mounting point for the transom bracket by laying it directly against the transom. Mark the holes.**



■ **STEP 9: Drill the two holes, countersink each to prevent chipping, apply the adhesive sealant tape, dab the sheet-metal screws with sealant and mount the transom bracket.**



■ **You're done with one tab. Now do the same thing on the other side.**



■ **STEP 10: To fine-tune the tabs, adjust the actuator mounting position on the plate bracket. Moving the bottom of the actuator inward creates less lift pressure, while moving it out results in greater lift pressure. To determine the speed at which the tab rises, the kit comes with a rudimentary gauge consisting of a string, rubberband and two labels.**

To learn more, contact Nauticus, Dept. TBM, 4196 Racquet Club Drive, Huntington Harbour, CA 92649; 800/233-0194. 