



Dream Pillows

HOW FUEL BLADDERS LET YOU GO FARTHER

CRUISING TO REMOTE DESTINATIONS LIKE THE UNINHABITED ISLES OF THE BAHAMAS, the fjords of southeast Alaska or the rugged Pacific coast of Baja California remains a dream for many boaters, because their boats lack sufficient fuel capacity.

Yet lightweight, puncture-resistant marine fuel bladders (aka pillow tanks) from companies such

as Aero Tec Laboratories (ATL), Fuel Safe and Turtle-Pac let you safely carry enough gasoline or

diesel to make your dream cruise a reality. Marine bladder prices range from \$419 for 25-gallon cells to \$2,658 for 500-gallon models.

Extra Weight There are some caveats. For example, with gasoline and diesel weighing 6.1 and 7.1 pounds per gallon, respectively, a large bladder can add significant mass, shift a boat's center of gravity or (if off-center) induce a list — factors that adversely affect a boat's seakeeping ability.

Always place the bladder above deck; in case of a leak, the fuel is less likely to accumulate below deck. Additionally, it facilitates the transfer of fuel, which we discuss later.

SCAN ME!

For a video on fuel bladders, scan this tag or visit boatingmag.com/fuel-bladders.

Filling Up Fill-ups must take place inside the boat because the cells become too unwieldy to manhandle once full. There is a chance of static buildup while fueling, though ATL points out that collapsible bladders have no vapor space (aka ullage) as do rigid tanks, so there is nothing to ignite. Still, ATL suggests a braided ground strap from the brass shut-off valve to ground, which mitigates static buildup.

Securing the Cells Secure pillow tanks with straps to keep them from sliding around in rough seas. Some, like the Fuel Safe bladders, have attachment points for straps, which then hook to cleats or tie-downs on deck. ATL, on the other hand, offers a system with a ring to place over the central fill pipe with four cam-buckle straps connecting from the ring to attachment points on deck (pictured, left).



Transferring Fuel A fuel-outlet valve with a fuel hose lets you access the fuel. Some boaters tie into their main fuel line. This way you can burn the fuel bladders first to get them out of the way, but you have to redo your fuel lines. Also, this doesn't lend itself well to the complexity of marine diesel fuel systems, which have return lines.

Another way is to feed the

fuel-supply hose into the fill-fitting for the main tank, open the valve and then initiate fuel flow by applying foot pressure to the bladder. With the pillow tank above the main tank, siphoning action does the rest, even if the deck fill is above the bladder. Of course, you have to wait until you've run enough fuel out of the main tank. Also, with any fuel transfer, you

should do it in an anchorage or at least in calm seas. With no ullage, bladders need not be vented.

Once the cell is empty, roll up the bladder for stowage. ATL even offers a mesh storage bag with a shoulder strap for transporting the empty bladders. If anyone asks what you're carrying, say it's your dream pillow. — *Jim Hendricks*



Four Fuel-Savings Tips

Adding more fuel capacity to your boat, whether with a fuel bladder or by installing a built-in auxiliary fuel tank, is a common way to get the desired range and maintain enough fuel for a margin of safety. But it is possible to extend your range without spending a dime on extra equipment or time in installation of accessories. Check out these fuel-saving tips. — *Kevin Falvey*



1 PROPELLERS Having the right propeller can make a big difference in improving your boat's fuel economy. In general, you want a prop that allows the engine(s) to rev up as high as possible and still remain within its rpm range. Try a variety of props, including three- and four-blade models, to find out which one works best for your boat.



2 WEIGHT Another variable that can affect economy is weight. We realize that those extra cases of water and that spare pair of water skis are convenient to have stowed aboard. But you will burn more fuel for carrying them. In fact, *Boating* conducted a test and found that the test boat's fuel burn decreased by 1 percent for every 100 pounds we removed from the test boat. The horsepower-to-weight ratio is as important a tool for those designing boats as it is for those buying boats.



3 BOTTOM A boat with a clean, smooth bottom will reward its owner with enhanced efficiency. Remove old cratered layers of anti-fouling paint and recoat with an abrasive paint that will maintain a smooth surface. Drag increases as an exponent of speed, so even minor imperfections count.



4 ENGINE Make sure your engine is running in top condition if you want to get the best fuel efficiency. Adhere to the manufacturer's maintenance schedule. Replacing ill-performing spark plugs and cleaning or replacing air filters are just two items that can save you dollars on fuel.

Rule of Thirds

Prudent boaters carry enough fuel to get where they are going on one-third of a tank and to return on one-third of a tank, while having one-third of their fuel capacity in reserve. — *K.F.*



360° DOES IT ALL

Sta-Bil's 360° Marine gasoline treatment guards against ethanol-induced phase separation, cleans the fuel system, stabilizes gas for 12 months and prevents corrosion. Recommended for every fill-up, a 12-ounce bottle (\$21.24, iboats.com) treats up to 120 gallons. — *J.H.*