

## **1/2A Tuning Tip #27: Fuel Leaks.**

By Bob Angel

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Part of a loss in run time can be attributed to fuel leaks. Whenever you've had the tank off it's always a good idea to check for leaks after replacement. The most frequent leaks occur around the 4 tank screw heads. Fill the tank, blot the area dry and look for seepage around those screw heads. Leaks will show up even better if you close the needle and pressurize the tank. If there's a leak, don't just overtighten the screws. Find the cause rather than cave in the backplate with too much torque. The designed sealing area is between the bottom of the screw heads and the countersunk backplate holes. There can be a burr in the hole, or I've seen cheap replacement screws made with ridges under the heads, possibly made by a thread rolling process, rather than die cutting. If replacements, the screws can be a touch too long, or the threaded holes in the case too short. I usually countersink those holes a little with a hand held drill bit and "chase" the threads with a 2-56 tap. Just don't punch through into the case.

Oddly enough, I'd never seen a leak in that "Y" groove between the tank and backplate/ needle assembly, unless that's what occurred just last week. I'd checked the screw head area before mounting an engine in my plywood quick mount. But when clamped in the mount, fuel was seen running down the face of the plywood. No leak visible when un-clamped. I just removed the tank and replaced it, maybe to be checked out later if I ever get a "round tuit". The tiny O ring is another possible leak source, although in my experience it doesn't happen very often, even when the ring is re-used after takedown.

And finally fuel siphoning occurs frequently from the prop wash over the fill and/ or vent tubes. I cap off the right hand tube after filling, and if there's a second tube rather than a tiny vent hole, use a short extension of fuel tubing cut on a slant at the top.