Pressure Testing A Model Fuel System

Most glow engines use an outlet from the engines exhaust to provide positive pressure in the fluel tank to improve fuel supply to the carburettor. Any pressure leaks in this system can cause unreliable engine running … and can occur from new. This article describes a simple method of pressure testing that I use whenever I put together a new aircraft or I am investigating poor running problems.

Generally leaks occur in the fuel pipe ('pinholes') or in the bung assembly at the neck of the fuel tank that both holds the inlet/outlet pipes in place and provides an air tight fit.

In good old 'Blue Peter' style ….You will need the following:

- A Bicycle or foot pump
- A universal conical type adapter as supplied with most foot pumps (or improvise your own). These taper to a point and allow the pump to be connected to different sizes of tubing.
- 2 plugs that fit the fuel tubing. I always keep a small number of spare fuel line plugs in my flight box but a suitable bolt will do.
- A bowl of water
- And of course the fuel tank (removed from the aircraft) and it's associated tubing that was or will be used in the plane.

Method:

- Connect the pump to one of the fuel lines using the adaptor.
- Plug the remaining fuel lines.
- Apply sufficient air pressure so that the tank is just seen to distort (it doesn't need to turn into a balloon!)
- Put the whole assembly into the bowl of water and hey presto ... either you get a stream of bubbles from the offending leak(s) or nothing at all indicating that the system is airtight.
- Replace or refit tubing/bung/etc in order to cure the leak(s) and then blow out all traces of water from the system using the pump (not your mouth as the fuel is poisonous!)

Sorry if this is preaching to the converted but if this article stops at least one person having a wasted trip to the field then it has been worth it ... I know that I have puzzled for weeks before resorting to this method only to find both pinholes in the fuel tubing and a leaking tank bung.

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