

A WARNING CONCERNING FUEL SIGHT GAUGES

On page 10 of the Oct/Nov issue of the Long EZ Squadron I Newsletter there appears from Squadron 2 an Unblessed Hint concerning Clayton Kaus' approach to improving fuel visibility. There is no question that fuel-visibility improvement for the pilot is needed. The per-plan approach results in marginal transparency which, over a period of time, degenerates to almost zero..however, the per-plan approach has one important attribute: INTEGRITY. Even though he may not know how much gas he has, the pilot need never worry about a fractured or cracked "window" which would permit gasoline to leak into the cockpit in a location totally inaccessible to him for corrective action.

There are different formulations of plexiglas both chemically and physically. (i.e. extruded & cast) Methodical testing of these acrylics for more than a year has shown that they react differently to various grades of fuel, especially after having been formed and/or cemented. Remember the cleaning instructions on your canopy? "Never use gasoline." There is chemical risk in its use. But even if no such risk existed the very real risk lies in the fact that the material is brittle by nature. When struck suddenly, as any loose hard object in the cockpit could do in turbulence, it shatters, displaying no plastic range of behaviour. Try it in your own shop or ask Mike Melvil what happened to his canopy during a photo flight!

If you have an acrylic (plexiglas) or glass sight gauge in your bird you are at risk with what could easily turn into catastrophic consequences. If fuel leaks into your cockpit and you cannot stop it, all that has to happen is for it to reach a combustible ratio with the air in your cockpit and find any source of ignition. You just bought the farm!

The material from which the Aircraft Component Technology (ACT) gauge is made has never shattered once under the most severe impact testing. This has been demonstrated repeatedly, even striking the material with the claws of a claw hammer. It sure rearranges the shape of the gauge, but the material stays intact.

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Fortunately the material is compatible with avgas. Unfortunately it has problems with mogas..not catastrophic in nature but not acceptable to ACT.

The intent of this response is not to "sell" anyone on an ACT gauge but to warn builders of a very real and present danger in using any brittle material as a window to your fuel tank. I like having you and your bird around--all in one piece!

Think it over.

Paul E. Prout