WATER IN YOUR FUEL?

In addition to the unlikelihood of it burning in your engine, water in your fuel—whether avgas or kerosene—is bad news. In cold temperatures, especially at altitude, it can freeze and block fuel lines. It also can promote corrosion in metal tanks and system components, plus microbial growth in jet fuel.

Water can enter a fuel tank through various means: Poor-condition gaskets on the filler caps can allow rainwater to seep in when an airplane is parked outside, or even when it's washed. Moisture in ambient air, especially in humid climates, can condense in partially filled tanks. Jet fuel is naturally disposed to absorbing water.

Finding water isn't difficult: Use a sampling container like the GATS jar pictured here. According to the FAA, "Suspended water droplets in the fuel can be identified by a cloudy appearance of the fuel, or by the clear separation of water from the colored fuel, which occurs after the water has settled to the bottom of the tank."

In any event, the water must be drained before flying. If water is suspected, drain the sumps until only clean fuel—of the proper color—is present.

When ambient temperatures are below freezing, water may appear in the sample as crystals but may not appear at all. In any event, fuel sampling will be more effective at discovering water or other contaminants if the tanks have been undisturbed for at least 20-30 minutes, allowing liquid water to precipitate out of suspension and collect at the bottom of the tank.