

## STATIC ELECTRICITY

### A shocking Tale With An Earthly Ending

All of us who own and operate gasoline (or diesel) equipment, you know, airplanes, boats, cars, lawn mowers, weed whackers, etc., need to gain an awareness of the hazards created by the refueling process. Most of us know that adding flammable fuel to a hot engine area can cause a flash fire. But what about other hazards?

Let's take a Risk Management approach here and evaluate static electricity. Risk Management uses scales like "1 is unlikely or causes little or no damage", while "5 means likely to occur or causes catastrophic damage." Okay, we have that concept down, let's put it to use.

How likely are you to immolate yourself (big word, meaning "fry") because a spark from static electricity completes the combustion triad (fuel, oxygen, ignition source)? Since we've all fueled up in less-than-safe manner for years, we believe it is an unlikely occurrence and rate it a "1" for likelihood. Fine, but what if we DO manage to create a spark in a bad place? Now we're talking catastrophic and rate it a "5." So, using the standard risk matrix of likelihood X catastrophic we get a "5." 5 is bad, even if it is unlikely to happen. What would make it more likely to happen? Low humidity and ungrounded friction (think scuff you feet on the carpet on a cool, dry day and then grabbing the well grounded door knob).

So what can we do to reduce the odds of an early cremation?

- Obviously, let the affected vehicle cool down and don't use transfer equipment that leaks or can spill.
- To reduce the chances of static electricity generating a spark:
  - If using a fuel bowser, make sure the bowser itself has a complete grounding bond path from the tank (to the chassis) and from the hose (bonded hoses DO exist).
    - Attach a grounding (bonding) wire from the bowser to the vehicle. This action does NOT ground anything – what it does do is equalize the static current between the bowser and the vehicle (why do you think you MUST attach the grounding cable at a commercial pump?), thereby reducing the spark path.
  - It is always a good idea to ground your airplane as well. That way you have a protected path for any static current that may accumulate. This is especially important if you refuel from plastic gas cans.
  - Another thought – did you know that the FAA specifically prohibits the use of plastic funnels for refueling ANY airplane? Why? A static electric spark can be generated by the friction between the fuel source and the ungrounded funnel that COULD cause you to have a brief – though eventful – day.

Most of us are complacent when it comes to refueling operations. We tend to feel that what we do at home or in the hangar is somehow different than what we are required to do at an FBO. Static electricity flat do not care where you are or how often you've gotten away with something. Give some thought to what you can easily do to make things just a little safer both on the road and at home.