

The Checklist Conundrum

I'm saying it right here and now, and the OEMs might not like it: The standard OEM checklist in most light general aviation aircraft is a long-winded, action-dull-repetitive piece of detritus. It also often is the only FAA-approved checklist for the aircraft.

These unwieldy booklets and lists breed contempt among pilots, who are often found skipping repetitive items or generic procedures that no longer apply to their aircraft because of customization or equipment differences.

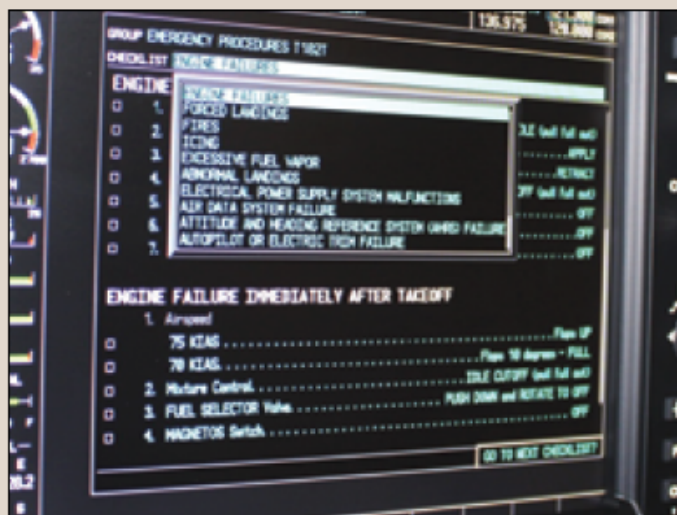
There was a time when aircraft didn't come with these elaborate booklets designed by the lawyers, engineers and test pilots to cover the manufacturers from any possible liability. Before World War II, aircraft checklists were simple enough to be a placard on the instrument panel or a mnemonic, like CIGARTIP or GUMPS.

The push to produce pilots that came with the ramp up and rapid entry into World War II, combined with the rapid increase in the complexity of the aircraft, demanded that visual checklists be generated to help the pilots get through the critical moments of flight. Designers understood that the checklists had to be visually verifiable, and created mechanical means for doing just that. Many classic airliners had scroll-type or flip-type checklists, where the co-pilot could flip a switch or scroll a knob as the captain completed each item he called out on the list.

Even for general aviation, the days of having a complete memorized normal operations checklist are long gone. Yes, you do still have to memorize "red box" items, such as securing an engine fire and emergency landing procedures. That said, if there is time to attempt an engine restart you'd better grab your checklist. And you won't pass even your private pilot checkride without brandishing the OEM checklist and demonstrating your slavish execution of its direction. It's in the Practical Test Standards, so examiners have to care.

Here's why they do: NASA did its research in the 1990s and uncovered that otherwise excellent professional pilots have been seen to regularly "chunk" whole sections of checklists, glancing at the list, performing a series of tasks, and then perhaps glancing back to look over what they just did. Except a lot of times they never look back. They just "chunk" onto the next set of items. It might work some of the time, but skipping and chunking eventually leads to skipping something important, such as controls free and correct, or autopilot tested, fuel selector to fullest tank or flaps in position. These are the items that have killed pilots and passengers on general aviation aircraft and airliners alike.

You can help yourself by doing what the airlines do: customize your checklist so that it perfectly matches



your cockpit, and is doable. (The mechanics of just how to do that safely are the subject of an upcoming article.) If that means digitizing it on your iPad with one of the many excellent apps out there that allow you to actually touch-to-check each item, well, do it. You'll be using technology akin to that used in a Boeing 777, which allows pilots at a glance to see if they have missed an item, but is smart enough to know if they completed an item earlier in the flight and will show it as checked.

If you have an integral MFD in the aircraft you fly, there may already be a digital checklist programmed in. Take the time to learn how to customize and use it. Even a good paper checklist that is set up with a logical flow for your aircraft is better than an OEM booklet that forces you to skip items that aren't applicable or jump around to accommodate the logistics of your aircraft.

Treat checklists as the safety tools that they are, and they can do their job. Just remember, they are proven to work when they make sense and they are used. So, make a sensible one for your aircraft, and use it.