Shop Talk

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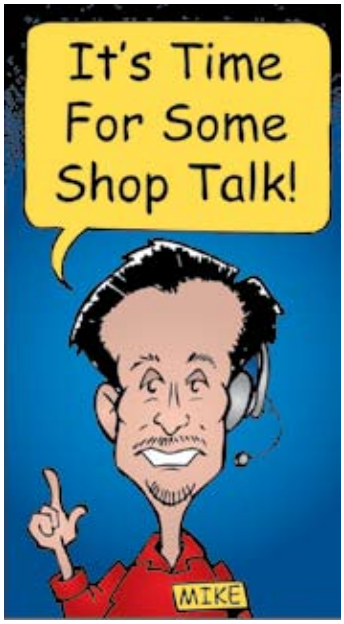

I don't need to keep a cycle count. Do I?

I have been looking at aircraft log books now for many years and it amazes me how many pilots and more pointedly, owner/pilots do not keep a cycle count record on their aircraft. There are surely many reasons for this oversight, mostly due to the fact that it's not required by regulation. But none of these excuses could justify the added expense this omission could create.

First of all let's make sure everyone knows exactly what defines a cycle. Not to be confused with a landing count, a cycle is an engine start followed by the aircraft leaving the ground (a flight) and an engine shut down. This means that you could start your engines, take-off, land, take-off again, land, take-off again, land, then shut down your engines and count only one cycle and three landings. If, however, you start up, take-off, land, shut off the left engine to deplane passengers, start that engine, then take-off again, land, and shut down both engines, you now have split cycles. The right engine has accumulated one cycle for the trip while the left engine should have been charged two cycles.

So what is the controlling factor that makes this an issue? In reality, what you are counting is the heating cycles of the critical rotating parts of the engine. As long as the engine is running, the operating temperature stays within an operating range, whether it is at full power or idle. At engine shut down the temperature falls below this range and the re-heating of the metal to the operating range is what imposes the molecular stress on the base metals of the rotating parts. Add to that the stresses imposed in opposition to the rotating plane of the parts caused by the turbulences of flight. Scientists and engineers that are far smarter than me have done studies and tests to figure out exactly what the safe heating and cooling cycle limits are for each of the rotating parts of your engine, and these limits are set in stone by the limitations and life limits set by Pratt & Whitney and are certified by the FAA.

So how does this affect the value of your aircraft or the overhaul cost of your engine?

According to Pratt & Whitney, there is no longer a formula for converting operating hours to cycles (as shown by example two above), even though some shops or overhaulers will count one cycle for one operating hour. Most likely, you are short changing yourself with this formula. If you send your engine to a Pratt & Whitney authorized overhaul facility for an overhaul and there are no cycle records, they will scrap all the time/cycles limited parts of your engine, which will add huge costs to the overhaul because they cannot confirm the actual cycle count on the parts. Now think about aircraft value. If you decide to sell your aircraft with no cycle record, how much will a prospective buyer pay knowing they will have to replace the rotating parts of the engine at overhaul? I'm sure it will be significantly less than the true value of your aircraft. After all, you just put factory new engines on it. So the long and short of it is, in order to ensure you keep the value increase those factory new engines added to your aircraft, it is imperative you keep an accurate cycle record. Blackhawk has even supplied you with a new cycle book. We recommend you keep it handy. It only takes an extra minute to properly fill it in before you leave the pilot's seat. If you calculate the time spent vs. the cost savings, it could be the biggest hourly rate you've ever made.

Nearly two-thirds of all the hours flown by general aviation aircraft are for business use.

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Announcements

We are pleased to welcome our new Director of Marketing & Sales, ***Edwin Black***. Welcome aboard!

Blackhawk offers three new performance options.

- *Bleed Air Pressurization (King Air A90-B90)*
- *Fuel Capacity Upgrade (King Air A90-C90B)*
- *Digital Engine Instrument Package (King Air 90 series with XP™ upgrade)*

Blackhawk organizes Brazilian demonstration tour.

*Blackhawk Modifications, along with Raisbeck Engineering, Commuter Air Technology, Quick Aviação, Japi Aeronaves and Pratt & Whitney Canada will make serveral stops in Brazil to demonstrate the performance and value of the Blackhawk XP™ upgrade with the Raisbeck and Commuter Air Technology enhancements. The **'Better Than New'** tour is currently scheduled for April 22, 2007 to May 3, 2007.*