THE ART AND COST OF AIRPLANE MAINTENANCE

News / Maintenance / Trainings

Zen and the Art of Motorcycle Maintenance was a popular book in the ’70s, and though I’ve tried several times, I’ve never been able to penetrate more than a few dozen pages. That said, I’ve always been a proponent of keeping my rolling stock (on the ground and in the air) in good working order. Maybe it is the Zen part I had trouble with.

Maintenance has been uppermost on my mind recently. My wife, Cathy, and I own a 36-year-old Piper Cheyenne I that has been remarkably parsimonious of late when it comes to big-ticket maintenance. The thing about a turboprop, though, is this: You can fly along for hours with minor maintenance needs only to come a cropper with a huge bill. This can be a “timed item” like a hot section (the last one pushed $40,000) or even a major overhaul (hard to know, but can be $250,000 per side). Or it could be a surprise development, like a gyro gone bad. Back before we got glass and AHRS, I felt like I bought a rebuilt gyro on a semiannual basis at $2,000 to $4,000 a pop. Hard to be Zen-like with those numbers.

On the Cessna CJ3s that I fly at work, I've seen and heard of all sorts of maintenance issues, mostly minor but sometimes not so much. None of these events has caused an accident or even an incident, but I'm guessing they caused consternation. Engine shutdown in flight and cabin decompression are among the most dramatic, though these instances were handled quite easily. The engine shutdown occurred near multiple suitable airports at a comfortable altitude, and the decompression was "caught" by the emergency pressurization system so that the cabin leveled off at 14,500 feet.

Right now, I'm shipwrecked in Austin, Texas, missing out on a flight to Midway that I had been looking forward to. Seems there was some oil under the left engine and some spattered oil on the baggage door. When I journeyed out to the airplane this morning, I found a maintenance crew signing the airplane off. "You had a leak, all right," they said. When I queried our maintenance guru, Wayne, in Palm Beach, Florida, he told me that a seal on the oil pump had leaked. My first reaction was, "Good call by the incoming crew. Thanks, Paul."

"You can pay me now, or you can pay me later" went the Fram automobile oil-filter ad of yesteryear. The point was that an ounce of prevention, in this case a new oil filter for your car, was worth a pound of cure, in that case a new engine. I've come to agree with this practical, if non-Zen, approach to airplane maintenance. When it comes to my airplane, I really hate to have anything less than perfect, even if it seems like I'm being obsessive compulsive.

This perfection obsession is usually quite conveniently satisfied because our airplane spends so much time close to home base in Tampa, Florida, near our longtime mechanic, Bill Turley, of Aircraft Engineering in Bartow, Florida. I've written about Bill and his shop before, but suffice it to say that I've entrusted him with my airplanes for 33 years in a row, and if that doesn't say it all, I don't know what will. Sure, I've called Bill from Chicago, Duluth and Monterey with questions, but almost always what I've been looking for and have received is reassurance. I ask and he tells me if I've interpreted the dials and indications correctly. Very infrequently, he will walk a local mechanic with little Cheyenne experience through a repair job by phone. I've never gotten a bill from Bill for this service.

In the Part 135 world, where our company's jets can be in Austin or Akron or Sun Valley or Martha's Vineyard or San Jose (as some are today, I see), there is no predictable maintenance base. Our fabulous mechanics in Palm Beach (Wayne and Rory) and Teterboro, New Jersey, (Luigi and Julio) are invaluable to us out there on the line. Maintenance in this environment has a much more formal structure and requires appropriate logbook entries, calls to maintenance controllers and good communication during crew swaps.

Each airplane has a maintenance logbook and a special maintenance page in our computer system. Given how much we fly these Cessna jets, I am amazed at how well they perform. Once a captain writes up a discrepancy, there must be a maintenance response before the airplane can be flown. This may just be using our minimum equipment list (MEL) or an actual repair. If the item is MEL'd, a placard is almost always required to alert all crew to the fact that this noncritical item is not available. Our MEL list has been (and had to be) approved by the FAA.

With our airplanes strung out all over the country, it is easy to understand why a way to get them safely to our maintenance people is an important tool. Part of the nuance of my new job as captain is to figure out what to write up and what to discuss with maintenance before I get out my pen.

Have you bought a new car sometime in the last decade? If so, you know that when you bring the car in for service you do not meet with an actual mechanic, you meet with a service advisor. The

service advisor has a neat shirt, often white, and sometimes a necktie. No oil is detectable on his fingernails. I've often been suspicious of this arrangement because I'd much rather talk to the actual fix-it man. It seems that a lot of information is lost in the transfer.

The good thing about the 135 world I live in now is that I have both maintenance technicians and controllers as resources. I do understand that in order to run the company, maintenance functions need to be centralized and that you can't have 120 pilots running around making deals with our maintenance technicians without some sort of systematic oversight. Still, I like to talk directly to the guy fixing the airplane about what seems to be broken.

As I mentioned, this isn't a problem with my own airplane. Bill Turley and I have been on the phone already about our upcoming prop overhauls — a glitch in the left prop anti-ice system and a small leak from the right nacelle fuel tank. I can't wait to get all this fixed, even though I may be less interested in the invoice for the work.

When I recently flew our Cheyenne to Morristown, New Jersey, (KMMU) for recurrent CJ3 training, I took a picture of the primary flight display (PFD). When I landed, I looked up the expected fuel burn, torque setting and true airspeed for that altitude (16,000 feet) and that temperature (minus 3 degrees C). What I found was an exact match for all three numbers in a performance page that had been written 37 years ago. She's still making book. As am I, with a few minor maintenance adjustments.

Speaking of still making book, the maintenance of that exquisite machine called the human body was a job of mine for some 40 years as a cancer surgeon. I was continually astounded at the intricate machinery that whirs along inside each of us every day. The complexity and elegance makes the jet engine and GPS navigation seem primitive. Even when part of the human body develops a maintenance issue, the rest of the machine just keeps on keeping on.

Performing maintenance on humans is in one very dramatic way different from maintenance of an airplane. The body heals. When the mechanic is finished with the airplane, it is as good as it's going to get. When I operated on patients, we were both dependent on the body's ability to heal. Without that restorative fact, no surgeon could cut.

When a fellow Cheyenne owner and friend had an open-heart operation, I calculated that by the time that operation was necessary, his heart had pumped blood more than 3 trillion times without stopping. No maintenance controller, no annual, no TBO, no oil change. Now, that's some piece of equipment. Very Zen.

Today I wanted to share that simple but astounding fact with him, but he's not available. He's somewhere in the Adirondacks on his motorcycle right now.

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