Never Again Online

Stress changes everything

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Comments by Bob Nuckolls

I had just barely accumulated the minimum number of complex hours required to pilot the Piper Arrow without a CFI. I was on my way back to McClellan-Palomar Airport in Carlsbad, California, from a short cross-country flight to Banning, California, when I noticed that the ammeter registered zero. Toggling the alt switch a few times didn't produce any different results. All of the circuit breakers appeared to be in, and the rest of the gauges looked good.

This airplane has an alternator loadmeter and he doesn’t mention any form of low voltage warning. Distance between the airports is less than 75 miles.

At this point my stress level was just a little elevated. Only 25 minutes had elapsed since the engine runup at Banning when the alternator had worked fine. Palomar was not more than 10 minutes away, so I figured the battery power surely would be adequate to complete the flight.

I would have been more at ease had I been by myself. My wife was not yet fully comfortable in the air, and her sitting next to me seemed to raise my anxiety level slightly. However, I tried to appear calm, cool, and collected.

After turning off the landing light and strobes, I listened to the Palomar automatic terminal information service, and then switched to the Palomar Tower frequency. Almost instantaneously, the radio frequency display went blank.

One wonders what the battery’s capacity was. The author speaks to some load reduction of some exterior lights but doesn’t go any further.

Now my stress level began to pick up. I could still hear the radio traffic. In fact, I was hearing too much of it. The frequency was so busy that it took multiple attempts before I realized that the radio was able to receive but unable to transmit. Then the radio went silent. I was no longer able to conceal the situation from my wife because the intercom also had failed.

I asked my wife to grab the portable transceiver from my flight bag. After fumbling to get the Tower frequency dialed in, I had another disturbing revelation — the transceiver's low-battery light was illuminated.

I’ll bet a dollar to a donut that his radio has NiMh or NiCad cells that DO NOT store well. All of my hand-helds use alkaline cells that have an excellent shelf life. Further, my navigation hand-helds get fresh cells each flight. See

http://www.aeroelectric.com/articles/AA_Bat_Test.pdf

While I attempted to contact the extremely busy Tower and keep my wife calm, my most stressful moment occurred: I realized that the landing gear still had to be extended, but there was no electrical power.

If this flight scenario had been an academic discussion on the ground, I would have confidently rattled off the proper procedures to deal with an electrical failure and manual gear extension, which would include the use of the emergency checklist. I would have probably considered this to be a minor problem, and I might have said there would be no immediate urgency to land. But I can tell you that at the height of my stress, the situation seemed extremely serious. All I wanted to do was get on the ground as soon as I could.

Things began to improve when I grabbed the emergency checklist and performed the emergency gear-down procedure. The familiar sound and drag characteristics I had come to associate with down and locked landing gear during training provided me with some stress relief, even without the assurance of illuminated landing-gear down and locked indicators.

I began to feel a lot better after I finally made contact with Palomar Tower and explained the situation. I was about five miles from the airport and cleared to land. Now, with most of my stress gone, I was thinking more clearly and decided to do a low-altitude pass so the Tower could take a look at the landing gear. Just after the Tower informed me that the gear appeared to be down, my handheld radio died. After a short go-around and approach, I made my softest landing to date.

So what did I learn? Fortunately, I learned a lot.

First of all, a seemingly obvious but important lesson: Know what is on your emergency procedures checklist. Prior to this incident, I didn't even know that the procedure for dealing with an inoperative alternator was right there — on the checklist — in black and white.

Second, if you don't have a handheld transceiver, get one and don't neglect to charge the batteries.

. . . or pitch the rechargeable batteries and use alkalines.

Third, simulate emergencies with as much realism as possible. When things go wrong, and you find yourself under stress and outside of your comfort zone, your ability to get yourself out of trouble will have a lot to do with how well you were conditioned and how seriously you took your training.

To explain emergency procedures is not the same as being able to apply the procedures during an actual emergency. Stress changes everything.

> **The operative word in this article is “emergency”. When the system is understood, architectured, and maintained to promote failure tolerant operations . . . parts fail but emergencies do not happen. A type certificated aircraft puts a pilot at a disadvantage for**

architecture but it doesn't keep him/her from understanding and maintaining. When I rent an airplane, I know that my control over maintenance is close to zero . . . I launch prepared to fly the airplane in what I've often referred to as "The J-3 mode". As long as the engine runs and flight controls stay hooked up, it's my intention to not have a black panel escalate into an emergency.

This story ends with the predictable self deprecating "I'm going to do things different in the future" approach to sharing his experience. I'm still waiting for an author of one of a similar story to tell us that he wrote to the manufacturer of the airplane about architecture issues, contacted the owner of the rental about battery maintenance, and the FAA about how difficult it is to do very useful changes to an airplane . . . like an E-Bus mod and a low voltage warning light. Very simple changes to this airplane and it's maintenance protocols would not have changed probability of alternator failure. However, had the airplane been fitted with an E-bus, a well maintained battery, and a pilot familiar with their use, the alternator would still have failed but we'd never hear about it because no EMERGENCY was perceived.

Bob . . .
