

Fooling Ourselves

*The air, our own ignorance, and the future
Are cloaked with invisibility*

December's column, about the fact that confabulation (lying smoothly) by any pilot, when it leads to damage, injury, or death, besmirches the reputation of the sport, inspired an eloquent phone call from a reader who objected to my having written that depression and antidepressants are disqualifying because they both impair performance. He argued correctly that some pilots are now permitted to fly with treated depression and that depressed pilots in general are safer on antidepressants than untreated.

This is an aside to the article's point, which was about character and reputation, but is important because it highlights the difference between "disqualifying" and "disabling." These are often confounded (or "conflated," as philosophers like to say) in discussions about airman medical privileges.

Before I get launched on the details, I should explain my worldview on rules.

Every rule reflects underlying values and principles. The principles and values are more important than the rule itself.

There are three sorts of rule-breaking:

- There is the rogue, who breaks rules for selfish, whimsical, vindictive, or damaging motives.

- There is the principled rule-breaker who violates a rule in order to observe an underlying principle or to maintain important priorities.

- (There is, of course *ignorant* rule-breaking, due to not knowing the rule; or more importantly, not understanding the current situation fully, to realize that the rule applies.)

For example, Jesus of Nazareth is portrayed in the gospels as repeatedly setting up the rule-bound Pharisees by finding

conflicts between their rules and values. One of his points was that it's more important to be kind ("mercy," a value) than "right" ("righteous").

In this tradition, I am in favor of wise rule-breaking; yet we all know that even justifiable transgression may entail rule-specified punishment, just as Jesus was killed (as Torah required) for claiming to be God. I am not in favor of rogue rule-breaking.

OK, you can stifle your yawn. I know you know this, and you know I know this. We're being explicit just to make sure we're standing together on the same manure pile.

My caller is in good company with many others who are annoyed by the *crevasse* between regulation and reality. Let me explain.

Disqualifying refers to the *rules of participation*. This is relevant to all regulated activities, from high school sports to the practice of medicine. The Federal Aviation Regulations specify who is and who is not qualified to fly. The rules address training, experience, competence, and medical conditions.

We all realize, if we stop to think about it, that there's a whole diverse class of pilots who are competent but not qualified. That is, they aren't permitted to fly by one rule or another. Sometimes qualification is easily regained, sometimes it is not.

The *rationale* for medical disqualification is the presence or *risk* of psychological or physical incapacitation. The fact that actual risk is different from hypothetical risk is the basis for FAA *special issuance*, which requires that a pilot present facts proving acceptably low risk.

Disabling refers to a condition, usually physical (which includes the psychological), that actually makes a pilot *unable to perform* pilot duties, in any anticipated circumstance, with necessary skill, or

carry a genuine *risk* of unpredictable sudden incapacitation.

A good example is a friend who flies an aerobatic airplane. Some time ago, he had hip replacement surgery; a couple of weeks afterward, feeling pretty comfortable (but before being cleared by his surgeon), he became unable to resist the need to be upside down pulling Gs.

First, he was not *qualified* because he hadn't been cleared by his surgeon. Second, he was *disabled*, as he discovered during the flight, when he experienced massive cramping in his leg muscles – the severe pain was distracting, he could not move in the narrow cockpit to relieve the cramp, and he could not operate the rudder pedals.

I hope the point is clear: he was disabled and *could not know this*. If his surgeon, or physical therapist, had known the physical tasks required to get up and back safely, they might have been able to warn him of this possibility. But there is no reason to think he knew.

My friend is a tough guy, and skilled and adaptable and smart. He was able to put up with the agony and land his airplane safely, and to extricate himself from the cockpit. And he understood very clearly that he'd put himself in danger.

There are many *disqualifying* medical conditions that are only *potentially* disabling. The FAA medical certificate is a *legal* document which verifies that the pilot has been professionally questioned and examined, and no medical condition was found by the examiner that might *incapacitate* the pilot *for the duration of the certificate*.

The requirement for all pilots, for all operations not requiring a medical certificate, per FAR 61.53, is not to act as PIC when the pilot "knows or has reason to know of any medical condition that would make the person unable to operate the aircraft in a safe manner."

In this paragraph, we see the *crevasse* that's between disqualification and disability narrowed marvelously. We are grateful to have this liberty, in soaring, to have this institutional trust placed in our wisdom and prudence. We will preserve this by acting with good judgment.

However, we will fail sometimes, despite our wisdom, for we cannot see the future; and like my friend who cramped,



we can only guess at the risk of sudden incapacitation when we have a "condition." His inability to know that this would happen brings to mind the other things that are invisible to us as we fly, and the limits of our ability to perceive correctly.

Last month's column was devoted to the distressing fact that the air is, with rare exceptions, either invisible or opaque, and it has hidden wrinkles and gulfs that may embarrass us.

We can be confused or fooled in other ways, as well. As I've said before, the theme of this series of monthly essays is that many accidents are due to human limits and the operating characteristics of our perception. *Nobody* plans to have an accident! That's why we call them "accidents!"

The main concern of accident analysis is to ask whether there is something we can learn: was there a deficiency of training, skill, knowledge, awareness, or analysis of the situation? And can this teach the rest of us to fly more safely. (OK, there's a side effect: legal liability costs

and regulatory punishments. Which we don't like to talk about, eh? The fear of which is the main hindrance to pilots' willingness to participate in the "learning" process.)

Failure of perception

For example; back in the days when pilots actually looked out the canopy at ground features while soaring, a pilot at the end of a nice cross-country flight was heading toward an airport away from home.

He knew that the destination airport was less than two miles west of a N-S freeway, toward which he was flying. He was hindered slightly by being too high to read the road signs, but then, aren't we always?

He came to a four-lane road in the proper place, turned left, and flew along the road for about the right distance. But he couldn't locate the airport.

We all know how very hard it actually can be to see a runway even when we know exactly where it should be. Especially a private grass field.

So, when he was clearly past where it should be, he simply did a 180 and went back along the highway. He still couldn't find it. He did another 180.

Back and forth, he went, not contacting lift, feeling very stupid and rather blind, and finally landed out.

As another example, in another state and at another time, a man was taking his son back to college in an airplane, using a VFR chart and pilotage. It was fun, and portable aviation GPS hadn't been invented. He crossed the Mississippi River westbound and flew up a tributary.

Every so often, he looked down and to his right to check his position on the chart.

After about 15 minutes, he felt confused. There was the river, down and to the left, just where it had been. However, its bends no longer conformed to the cartoon on the map, and no other ground features matched, either.

He located a nearby VOR on the chart, turned on the radio, and tracked toward it until he began seeing things on the map that matched features on the ground.



What happened to these two guys?

The glider pilot did not know that there were two four-lane roads, running at about 15 degrees to each other. He took the first he came to, believing it was the only one. Then, being humble about his feature-identification skills, he felt stupid and frustrated. A skilled pilot, he made a safe outlanding and endured the shame and humiliation with good grace.

Sitting comfortably in our armchairs, we can fault him for not studying the sectional more observantly, for not pulling it out when he felt confused, for not buying and using a GPS-nav.

But anyone who's flown by pilotage has been more or less in his position at some time. My point is that we cannot know everything; we can't know what the next surprise will be, so we can't prep for it.

It makes no difference whether the next surprise is a failure of our own perception or something from outside ourselves. Its nature is unknown at first; it does not announce itself. When it intrudes, there is at first only confusion. All we can do is to explore the confusion systematically, as quickly as we are able, until we discover the cause – meanwhile flying the aircraft safely and competently is our first priority.

We do not always get it figured out. The situation may unfold explosively. We may be distracted from key information, or it may be beyond our perception. Sometimes, there are no adverse consequences; sometimes we embarrass ourselves; sometimes there's an incident. When there is, we take the blame because, like the ship's captain, we are accountable for whatever we do, whether by will or by ignorance.

The airplane pilot got lost because he happened, by pure chance, to look down and to the right at his sectional, to confirm his position, just as he got to the joining of two tributaries. This turning of the head activated his semicircular canals, causing a sensation of movement. He automatically moved the controls somewhat to maintain the sensation of straight and level. He looked up, saw the airplane banked slightly and quickly corrected the bank.

He did know that two rivers had merged beneath him; he did not know he'd turned the airplane. He kept the river on his left as planned. After about 15 minutes, the river no longer resembled the cartoonish squiggle on the map, and the other terrain features that should have been along it were absent. He felt humiliated, and very much wanted to reorient himself without exposing his shame to either his son or to ATC. It all worked out, and became after a while a funny story.

Reprise:

The underlying motif of this column is that good pilots have accidents: we are prone to misperceiving our position and location; we are prone to misunderstanding what we perceive. This is due to the invisibility of both the air and the future, to the limits and nature of our perception, to the vastness of our ignorance, and to the unknowable-ness of the future.

In consequence, we need to be continually alert for hints that we might be wrong. Being ready to be wrong is the secret to safety and skill. (...and to social **grace**.)

Acknowledgments: Thanks to David Nelson and Lewis Shaw for insightful conversations that contributed to this essay. ✕