Sterile Cockpit

Briefing – complete.
Ceiling ~ 20 feet. Visibility ~ 20 feet.
Preflight – satisfactory.
Instrument scan – OK.
Checklist – complete.
Here we go….

“Sharp object please” I ask. “Scalpel” comes the reply from the scrub tech as she hands it to me.

Flying and performing surgery are very much alike. As a relatively low time pilot still, but experienced Cardiovascular Surgeon, the similarities are evident daily.

First is the preparation for flight or “doing a case.” Book work and study are necessary before one is given the opportunity or certified in some manner not to be a danger to others. What is more subtle, however, is the necessary state of mind before one begins. I often think to myself, in a modest way, before a particularly difficult operation or emergency, “It’s show time.” Whether this is a trigger to marshal one’s intellect, concentration, or expertise gained from experience, regardless it indicates the need for a surgeon or pilot to perform as best he/she can. I find it easy to do in surgery, but am more consciously aware of it in flying. I know by a personal inventory that on some days I may not fly my best. I am still safe but not necessarily optimal. In surgery we function despite acute and chronic fatigue and distraction without much choice. For many of us, fortunately, the decision to fly on a given day or at a given time is much more under our control. The need to be optimal is as acute in flying as it is in surgery. While an adrenaline rush may allow us to perform adequately, where and when we have a choice, good judgment should prevail.

Are people born “good sticks” or brilliant surgeons? Perhaps. It is often said, usually by surgeons describing themselves, that surgery is 75% mental and 25% physical dexterity - though our non-surgical colleagues often respond that “You can teach a monkey to operate, but you can’t teach him Medicine.” My apologies to our oft superior primate cousins – but that’s another story. Most surgeons and pilots find that reasonable physical dexterity or coordination combined with intellectual preparation and experience yields good results. Naturally gifted individuals exist in both fields and may be exceptions.

In addition, practice makes recall of details easier. Remembering details and facts can be difficult for the medical student or resident physician. But after clinical experience, the relevance and context make this a non issue. Flying offers the...
same tool – what you use and need to know is easy to remember with an understanding and witness of its context and import. One studies the anatomic details or steps of operations when first learning them or about particular procedures not done very often. With experience, this becomes unnecessary to the same extent. Early in my instrument flying experience I similarly had a “cheat” sheet I reviewed before embarking, e.g., required criteria for an acceptable alternate, entry patterns for holds, calculation of distance to a VOR, or DME arcs. Again with experience this has no longer been necessary. Special preparation may be indicated or at least a good idea if you plan a flight that is unusual. For example, these may include mountain or high density altitude issues or over water flight.

This segues to what may be the most significant similarity. In surgery, e.g., a coronary bypass operation using the heart-lung machine to support the circulation, there are many steps that combine to allow safe performance and satisfactory outcome. In addition, a team of health professionals including a second surgeon, an anesthesiologist, a perfusionist to run the heart-lung machine, and assorted nurses and technicians are required to function smoothly as an integrated unit. A routine should be developed such that the basic steps are performed precisely and identically each time. This allows the operator and his/her team to concentrate on what’s different about a particular patient’s operation or complication without having to worry and be distracted by the ongoing flow of the basics of the procedure. Flying lends itself to a similar compulsive routine that allows concentration on emergency procedures or the unexpected, or on better situational awareness. Crew resource management as taught to pilots equally applies to the efficient use of a team in an emergent medical situation.

Currency/proficiency training is required for active commercial airline pilots and has been compared and contrasted with continuing medical education. However, even for an avocational pilot, the same religious attention to “keep up” is optimal. When learning to fly it is helpful to immerse one’s self in the whole concept; to live, breathe, and think about flying. This is an absolute and inescapable requirement for a surgeon. A pilot should insure the same and not allow complacency to creep in.

Surgeons and pilots have the distinct opportunity and pleasure of getting to play with “cool” toys. It may be a fiber optic video game tied to the latest, greatest, smallest endoscope or some innovative technique or instrument that allows performance of an established procedure in some new, less invasive or less harmful way. Flying also has cool toys – be it a J3 Cub, Breezy, or Extra 300L you get to fly after being brought up on tricycle gear Cessnas, or the latest Garmin GPS – Avidyne interface. Just when you might begin to get, perish the thought, bored,
you rediscover some aspect of flight from a new perspective or add some new instrument to make it relatively more interesting. For many, it may not mean moving to a more complex plane or to higher tech gadgets, but rather to planes which emphasize the simplicity and purity of flight.

The completion of an operation, particularly a difficult or high risk one, gives one a sense of satisfaction, professional pride, and accomplishment. A safe landing is similarly rewarding. A post-flight or post-operative debrief in the spirit of continuing improvement and growth, even if by yourself, is recommended. While it is said “Any landing you can walk away from is a good landing,” it is still sometimes true that after successful surgery or a safe landing, one feels as if one has dodged a bullet.

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