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SAFETY FIRST

A column dedicated to GA safety education

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TECHNOLOGY, THE GOOD AND THE BAD

As I'm writing this, I'm looking over the top of my laptop at beautiful Lake Louise. It was another one of those offers that a tight Dutchman could not refuse, a deluxe, large, lake view room at about a fourth of what it will cost a month from

ready to go in a few hours. I understand my T201M uses Ford alternators, but I don't think Ford is to blame, but rather the fact that even though I bought a factory new engine in 2003, that particular engine technology is ancient compared



now (when it will cost almost a thousand a night). This was a trip that was designed to match perfectly with a self-employed, semi-retired, private plane owner who had the capability of launching on a few days' notice after the "email special" arrived. The Fairmont "President's Club" members get this email around the first of June each year, when the hotel is trying to fill rooms before things get busy. Anyone can sign up for the "Fairmont President's Club" and it is a free membership.

The trip from Boulder was not quite as smooth as expected, when I experienced my third alternator failure in Great Falls. Again it was "dig out the spare alternator" and the mechanic had it installed and

to the advances in automobile engines.

The trip from Great Falls, and across the border to a reliever airport in the Calgary area (Springbank) went smoothly and comfortably, thanks to all the latest gadgets on board including active noise cancelling headsets with XM radio classic "Pops" music plus a moving-map GPS with Nexrad weather to give those developing thunderstorms a wide berth. And, of course, we had geo-referenced ForeFlight on my iPad for which I had sprung for the Canadian subscription, which includes the low and high IFR enroute charts (which are geo-referenced), and the taxiway diagrams and approach and departure procedures (none of which are geo-referenced yet). Canadian VFR charts

are not included in the ForeFlight subscription (yet), since they are said not to be available digitally.

Vici and I were talking about advances in technology while we were hiking the trails near Lake Louise, and how grateful we are for the advances, but that it is not all good. Vici brought up how different it was when she was training for her license. She would carefully draw lines on sectional charts and mark off checkpoints, all of which were entered into a table and calculations made for each segment. Then it was time to listen to the briefer for 20 minutes (after first being on hold for 15 minutes when the FAA provided briefings) and hear a lot of irrelevant information such as "mountain obscuration, VFR not recommended" even though she was going to be flying in the sunshine over the plains of eastern Colorado. What a breeze to just touch the points of the route on the iPad, let it put all the calculations into a table, and hit "File." Then to brief at your own reading speed which likely approaches a thousand words a minute since you can skip all the obviously irrelevant stuff. Did you know that most briefers average less than a hundred words per minute?

And then there is the display while you are flying in which you can pop back and forth between various charts, airport diagrams, AFD, procedures and.....what was that? My gosh, I was so busy flipping between pages on the iPad that I didn't see that airplane. Whew! That was close.

Therein lies the problem. The new technology is so interesting and so engaging that it is a significant distraction. We have to wonder how iPads, GPSs, and glass cockpits are going to affect the mid-air collision rates. Hopefully technology will provide electronic means to minimize the adverse effects of all the new technology that distracts us. Another set of eyes in the cockpit can help, but not if you are showing them some interesting thing on your iPad.

There are other problems with the displays that lead me to believe that the designers have not consulted with an aviation oriented optometrist or an aviation oriented ophthalmologist. I'll just mention a few.

Some of the new colors used in certain electronic displays are not easy for a male with a red-green (deuteranomaly) color vision deficiency to differentiate. This color deficiency is mild enough that most male pilots who have it, were able to obtain unrestricted medical certificates (unrestricted as far as color vision), but now some of them are having difficulties with glass cockpit displays. More than one in 20 males is said to have a deuteranomaly defect.

In my opinion, there are also problems with some of the methods of displaying data. For example, the information on some of the "tape" and "numeric" displays is less easily processed (mentally) than when we flew with the old "steam gauges" (needles on circular numbered faces) On one plane I flew with "steam gauges," the usual approach speed was when the needle on the airspeed indicator was pointing horizontally to the right. Having made that observation on previous flights, I could see if I was on speed without even reading numbers since an instantaneous glance provided me with the position of the needle. With a "speed tape" display, there is a considerably higher cognitive toll to pay, since the numbers must be fixated upon, read, and then mentally processed by comparing the numbers to areas of memory and association in the brain. Thus we have another distraction that keeps the pilot's eyes in the cockpit and increases his workload.

And then there are legal issues. I don't wish to appear to be morbid, but in my consulting practice on air crashes, I've learned that it may be extremely difficult for your family to successfully sue the FAA if you have Nexrad in the cockpit when you fly IFR into a thunderstorm and crash. Far fetched? There have already been such cases. The lesson here is that if you are carrying technology that increases your capabilities, you need to be sure you know how to use it and use it wisely rather than to use it to take more chances than you otherwise would have. Because of the technology that you possess, you will now be held to a higher standard of care in operating your aircraft.

Then there is the possibility of failure of the electronics or of the display devices. If you are using an iPad, you can

always carry paper backups. But one of the features of the iPad is that I can carry all the available charts and data for the entire USA and Canada so that I am prepared to go anywhere, a volume of charts and data that would probably fill a few good-sized suitcases. I understand the required backup for the iPad can be another iPad. Do we have an excuse to buy the iPad3 now?

Suffice to say that when it comes to technology, we need to be prepared to deal with the good and the bad, or things can get ugly.

As Vici and I are looking at this lovely view out our hotel window, we wonder if the Lake Louise Chateau would be a good place for a regional meeting. It is such an easy flight from Great Falls up to the GA friendly airport of Springbank. They will bring your Hertz rental car up to the plane and since you are already on the far west side of Calgary, it is a short two-hour drive up to Lake Louise (or just about one hour to Banff if that is your choice). There is nothing complicated about the eapis thing, just a bit time-consuming, and now you can put in your expected trip data days ahead and save the manifest in the comfort of your home. Then it takes very little time to call it up and put in the final details on where and when you are going to cross the border on the day of your flight. When arriving at Springbank we taxi to below the tower and call Canpass again. They tell us a report number over the phone and we go on our way. The only time we were ever met by customs people was the time we were carrying our shotgun and had to purchase a firearms permit. Do remember that when flying in Canadian controlled airspace, you need a clearance above 12,500 feet, even on a VFR flight plan. And at many non-tower airports, you must give position and intentions reports by radio if you transit within an area around the airport that is about the size of a USA class D airspace. Let's load up our iPads and go to Canada again!