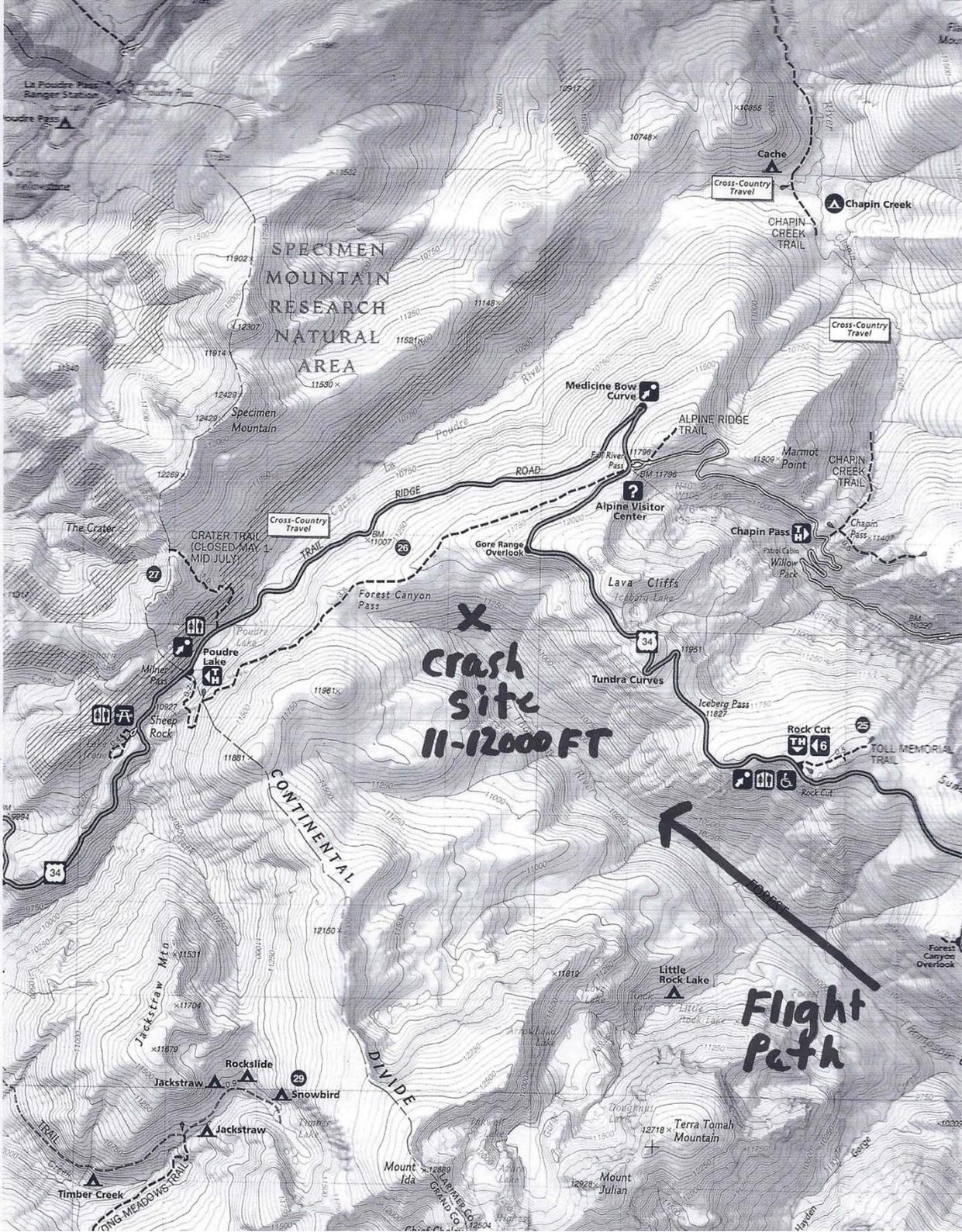


July 2010 Safety Corner: Colorado Rocky Mountain High, by Dave McClurkin

A few weeks ago my wife, daughter and I were hiking in Rocky Mountain National Park. This particular trail went up a forested valley to some cascades and a water fall. As usual the weather that morning was crystal clear. However, visitors are cautioned to do their hiking in the morning as the park usually experiences thunderstorm activity in the afternoon. On this day the weather moved in earlier than forecasted – not thunderstorms, but a widespread area of lowering stratus, obscuring the mountains. As we hiked we heard the sound of a light aircraft engine. We saw an airplane headed up the valley just a few hundred feet above us – it was a red and white high wing airplane with double struts typical of American Champion aircraft. My wife and I looked at each other and we both said “no way.” I wondered whether we were hiking to what would shortly be the scene of an aircraft accident. Fortunately, within just a few minutes we saw the same airplane flying back down the valley. “Good decision,” I thought, “No doubt he’ll land at an airport along the front range and try again tomorrow.”

The next day the local news announced that an aircraft had crashed in the park and that the occupants had survived and been rescued. My wife and I looked at each other and said, “You don’t think . . . ?” Sure enough, the aircraft was a red and white American Champion Super Decathlon. The FAA data base indicated it was less than one year old! The 54-year old pilot and 18-year old passenger had been attempting to fly to Aspen, Co. It appeared that after exiting “our” valley the pilot proceeded north and attempted to fly up Forrest Canyon with the intent to follow the Trail Ridge Road over the Continental Divide. They crashed in a heavily wooded area on the east side of the Divide (See Topo Map below). Given that they survived with only minor injuries it would appear that they achieved a controlled flight into the terrain. It is not known whether a VFR flight plan had been filed, but the ELT survived the crash and was detected by Civil Air Patrol (CAP) aircraft. CAP aircraft pinpointed the ELT that evening (after the weather had cleared) and also spotted signal fires. The next morning park rangers hiked down from the Gore Range Overlook and rescued the pilot and his passenger.



Until the NTSB issues an accident investigation report, some of the following is speculation based on newspaper articles. Let's use the PAVE and 5P checklists to conduct a "post-mortem" of this accident.

PILOT: Experienced – the 54 year old pilot had been flying since age 16. However, he was from Wisconsin. Had he had mountain flying training and recent mountain flying experience? Was he familiar with the route? Had he done proper flight planning? He made a point of saying he had been flying a long time with the implication nothing bad had happened to him in almost 40 years. Could we also be seeing the Hazardous Attitude of Invulnerability?

AIRCRAFT: The service ceiling on the Super Decathlon is listed as 15,800 feet. Rate of climb at sea level is listed as 1280 feet per minute. It was about as new as an aircraft can be so we can assume it could achieve these numbers. At density altitudes above 10,000 feet you're probably lucky to get 200 feet per minute climb rate. This assumes the pilot used proper mixture leaning techniques. The aircraft was very close to its performance limits. Was the pilot familiar with the performance of this make and model at high density altitudes?

ENVIRONMENT:

Weather – Started out clear with light winds aloft. A good day for mountain flying as long as the trip is made before the typical weather deterioration in the afternoon.

Terrain: Mountainous, extremely rugged, unforgiving. In most light single engine non-turbocharged aircraft without supplemental O2 you must fly through mountain passes. The terrain on either side rises above the altitude of the aircraft. If you know where you are, what you're doing and the weather is good, it's a blast!

Lighting: Day.

EXTERNAL PRESSURE: This appeared to be a sight-seeing jaunt. Did they have a deadline to be back in Wisconsin? Did they have reservations at an expensive hotel that evening with no refund option? Did the pilot not want to disappoint his passenger - a newly minted private pilot who was also his daughter? In hindsight no external pressure should be great enough to risk life and limb. However, few rational people set out on a trip with the intention of crashing the airplane.

The 5P's – Plan, Plane, Pilot, Passengers, Programming. From the PAVE checklist there may have been some concerns, but nothing that would warrant cancelling the flight. However, there is a lot more to risk management than the go/no-go decision. Flying is dynamic (duh). Things change and we must evaluate these changes – does the change represent a hazard which leads to an unacceptable risk? If so, what do we do about it? The following speculation revolves around the Plan and the Pilot.

Traversing the Continental Divide in this part of Colorado requires flying through one of several mountain passes. These passes range in altitude from 11,000 to 13,000 feet. Unless you really know the terrain like the back of your hand, mountain flyers are best advised to intensely study the route of flight, pick out the key landmarks and visualize them. Headings are marked and you chair-fly the route (at least that's what this flatlander does). Let's assume that this pilot's original plan was in fact to fly up Thunder Lake Trail, cross the Continental Divide at the Boulder-Grand pass – elevation 12,061 feet and that he did the proper flight planning for this route. This is where we first spotted the aircraft. He starts up the pass, but something has changed. Instead of crystal-clear blue skies he now encounters unforecast stratus clouds obscuring the higher elevations. He turns around. Great! Happy ending! Oops, not so fast. Now he flies northward up the front range. Low ceilings are still obscuring the higher elevations. He sees a wider valley to the west and decides to try his luck. Was there meticulous flight planning for this alternate route or was he just winging it at this point? It would be great to nurse the airplane up to 14,000 feet (for thirty minutes) to allow clearing the pass with a comfortable margin. But the ceilings won't allow that. So he's flying up a canyon, below the elevation of the pass he intends to fly through. Terrain rising, ceilings descending. Let's add a light westerly wind. As the air flows over the Continental Divide it descends – not much, maybe only 200 feet per minute. Too late – the airplane is descending into the trees. The pilot applies back pressure. Airspeed decreases but the airplane is still descending. If a turn is attempted that just increases the descent rate. Out of altitude, out of airspeed – the CAP and Rocky Mountain National Park Rangers get to make another save!

What caused the pilot to follow an acceptable course of action based on a set of circumstances and then less than an hour later follow an unacceptable course of action when presented with the same or worse set of circumstances? We see this on stage checks. On the first attempt the student opts not to fly based on

weather. On the next attempt the weather is the same, but the student opts to fly. Perhaps the External Pressure part of the equation overcomes the risk management/ADM process. In the final analysis the basic root lesson we can all take away from this accident is simply: **If a course of action in a given set of circumstances is unacceptable today, External Pressure may be greater, but the same course of action in the same set of circumstances is going to be just as unacceptable tomorrow!**

Finally, for a more in-depth view of mountain flying considerations take the AOPA on-line Mountain Flying course described below. It has a couple of dramatic videos.

What's your mountain flying attitude?

Find out and take the AOPA Air Safety Foundation's *Mountain Flying* online course, packed to the brim with tips and helpful video clips to navigate terrain safely.

As a flatlander pilot, don't think, "That's not for me."

You're dead wrong! Summer's high temperatures and humidity can turn a zero-foot elevation airport into a

3,000-foot high-density-altitude condition, robbing your aircraft of crucial climb and cruise performance.

Pilots venturing into the mountains in search of cooler temperatures, take heed! Now is a good time to revisit high-density-altitude operations, performance considerations, and mountain weather. This course qualifies for AOPA Accident Forgiveness and the FAA Wings Program. [Challenge yourself >>](#)

Note: Hit the Ctrl Key and simultaneously click on "Challenge yourself" to go to the course.

