AASF Safety Spot – August 2022

Wind is Weather Too
by Rocky Capozzi

Not long ago, I was flying a practice instrument approach in gusty conditions. I was in a holding pattern turn and just as I was rolling out, I was hit by a gust of wind from the high wing side. It increased my bank angle by 10 – 15 degrees. I was around 90 mph and 2000 feet, so it was no big deal. The outcome may have been different if I had just taken off or been on short final. There have been a couple of nasty accidents in the last few months where it appears wind played a major role.
In May, a student pilot flying a C172N crashed on final to RWY 12L at Rocky Mountain Metro (KBJC). The NTSB preliminary reports states, "…after being established on final to 12L, the airplane abruptly turned to the north and rapidly descended." That reads like a classic stall spin. The airplane crashed about ½ nm from the runway threshold. Winds at the time of the accident were 220 13G23 – essentially a direct cross wind. Quite possibly the right wing (upwind wing) was lifted by a wind gust. The NTSB preliminary report can be found here https://data.ntsb.gov/carol-repgen/api/Aviation/ReportMain/GenerateNewestReport/105067/pdf .

Closer to home, on July 26th, a Regal Air Beaver crashed in Lake Hood shortly after takeoff. Fortunately, there were no fatalities. Here's a link to a video of the accident anchorage plane crash july 29, 2022 - YouTube . As reported by ADN, *"The plane's pilot told authorities that strong wind caused the aircraft's right wing to rise after it had taken off, …"* METAR winds from the hours before and after the crash were 200 12G20 and 200 10G17.

Years ago, Bruce Landsberg the former President of the Air Safety Institute and an NTSB member authored an article titled, **Too Windy**. Too Windy? - AOPA The article pointed out that a review of 11 years of NTSB data showed wind to be a primary cause in 2800 accidents and that 80% of those involved crosswinds and gusts. Chapter 9 of the Airplane Flying Handbook, page 9-20, has a section on Turbulent Air Approach and Landing. Crosswind Takeoff discussion begins on page 6-6 of Chapter 6. Links to chapters 6 and 9 follow:
https://www.faa.gov/sites/faa.gov/files/regulations_policies/handbooks_manuals/aviation/airplane_handbook/10_afh_ch9.pdf
https://www.faa.gov/sites/faa.gov/files/regulations_policies/handbooks_manuals/aviation/airplane_handbook/07_afh_ch6.pdf

Much has been written about approach and landing in gusty and wind conditions. In primary training, we all learned to add one half the gust factor, up to some maximum value, to our approach speeds to deal with gusting winds. Likely we were also taught to use the minimum flap setting necessary consistent with runway length and surface conditions. This maximizes our control authority through touchdown and rollout. Many of our airplanes have a demonstrated maximum crosswind limit published in the POH, it may even be posted on a cockpit placard. Even if it's not addressed in your POH, according to the Airplane Flying Handbook, "Before an airplane is type certificated by the Federal Aviation Administration (FAA), it is flight tested to ensure it meets certain requirements. Among these is the demonstration of being satisfactorily controllable with no exceptional degree of skill or alertness on the part of the pilot in 90° crosswinds up to a velocity equal to 0.2 V_{SO}." I figure that I fit neatly into the category of pilots with no exceptional skill or alertness, so I should be able to handle .2V_{SO}.

Takeoffs with crosswinds call for aileron into the wind and a delayed rotation to make a definite break with the ground to avoid skipping across the runway sideways. We are trying to keep the crosswind from lifting the upwind wing as we roll down the runway and lift off. I don't remember any specific instruction on takeoffs with gusty winds. Gusts present two dangers. Even with gusts straight down the runway, it stands to reason the sudden loss of the gust factor could result in a rapid sink. Similarly, it stands to reason that a turn away from gusting crosswind could result in a rapid increase in bank angle, loss of lift, and possible stall. If there are no departure restrictions, it's safest to accelerate straight ahead to a comfortable height and airspeed before making any turns.

None of this discussion answers the question of how much wind is too much. That's dependent on your airplane, your skill level, and your risk tolerance. I keep thinking about the Landsberg article—2800 wind related accidents over 11 years and 80% involved crosswind or gusty winds. When you find the winds tickling your risk tolerance meter, challenging your airplane limits or skill level, it may be time to answer the fundamental question, "Do I need to fly?"

Exhausted and Starving - Fuel Trifecta
by Marshall Severson

I recently found three different avgas pumps out of service, a trifecta of fuel unavailability at two airports. Luckily, I found another vendor and refueled. There should be more than luck involved, and I reminded myself not to take fuel availability for granted even locally, let alone at distant locations. The experience caused me to think about fuel availability and its relationship to air safety. There are many links in the safety chain and breaking any of the links can be disastrous.

AOPA Safety Advisory Operations & Proficiency No. 5 provides some common sense regarding fueling: "...The first thing is to make sure there will be fuel and some way of dispensing it when you arrive....be sure to call ahead if you don't want to take a chance on spending a night in the airplane." Or, it could be added, if you don't want to take a chance on running out of fuel inflight due to biased decision making (poor or wishful).

Accident report narratives don't generally point to a pilot unable to refuel due to lack of fuel availability at commonly served locations. When in doubt you may wish to consider carrying extra fuel in approved containers. What the narratives do point out is that probable accident causes include improper fuel planning.

Here is an extract from an NTSB accident report from about 21/2 years ago near Fairbanks, and yes, everyone lived!

The pilot reported that, during a night flight, in his tailwheel ski-equipped airplane, weather conditions began to deteriorate, and he elected to navigate to a nearby airport, with an estimated 20-minute fuel reserve upon his arrival. Once at the intended airport, he was unable to activate the runway lights via the pilot-controlled lighting and diverted to an alternate airport approximately 35 miles away. About 10 nautical miles from the alternate airport, the engine lost all power due to fuel exhaustion. Subsequently, he made an emergency landing to an off-airport field. During the emergency landing the ski-equipped airplane nosed over and sustained substantial damage to the empennage.

14 Code of Federal Regulation 91.151 Fuel requirements for flight in VFR conditions, states in part:
(a) No person may begin a flight in an airplane under VFR conditions unless (considering wind and forecast weather conditions) there is enough fuel to fly to the first point of intended landing and, assuming normal cruising speed-
(1) During the day, to fly after that for at least 30 minutes; or
(2) At night, to fly after that for at least 45 minutes.

The pilot reported that there were no preaccident mechanical failures or malfunctions with the airplane that would have precluded normal operation.

Probable Cause and Findings
The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's improper fuel planning, which resulted in a total loss of engine power due to fuel exhaustion, an emergency off-airport landing, and a nose over.

What the NOTAMs indicated at the time of the accident are unknown, but at the time of this writing, the airport's runway lights are published in the Alaska Supplement as out of service indefinitely and would consequently not show up as NOTAM/D information in an online briefing.

Some other links in the safety chain appear broken. No flight plan was filed, not a good idea in hostile dark sub-zero winter conditions (and the ELT did not activate). The pilot indicated icing conditions were encountered. Perusing the accident docket, it appears that the pilot had not had a medical certificate since 1997 and that the pilot's flight review status was listed as "N/A". There are reasons for a periodic flight review: mainly to ensure that the pilot has the necessary knowledge and skills for safe operation. As for the medical, well, fitness to fly determinations are a shared responsibility and the medical exam is part of the equation.

Although the aircraft flipped on landing, the occupants were not injured. The pilot was able to call for help and they were subsequently rescued by military helicopter. It could have been a lot worse. Bad things multiply fast when not adhering to regs and commonly recommended procedures.