

AASF Safety Spot, December 2021

Greetings fellow foundation members. In this month's Safety Spot we review a carburetor icing accident in the local area, a new FAA video and 2 recent fatal accidents that occurred in the lower 48.

**Carburetor Heat:** Does carburetor icing immediately come to mind when considering the adverse effects of icing? How about carb ice associated with aircraft accidents? This winter has been a rough one so far, but early in 2021 the NTSB provided their final report on a carburetor icing accident near Big Lake, Alaska that thankfully did not result in lives lost and which provides food for thought on applying carb heat: <https://data.nts.gov/carol-reppen/api/Aviation/ReportMain/GenerateNewestReport/100804/pdf>

Some accident reports may provoke righteous outrage in a concerned reader due to an accident pilot's lack of due regard for safe operations. This isn't one of them. In this case, the pilot applied carb heat on final approach, but only "partial" heat. A weather station 9 miles away reported temperature was 12F and the relative humidity was 87%. Many "before landing" checklists require application of full carb heat before closing the throttle. The NTSB determined the probable cause of the accident to be: "The pilot's failure to apply **full** [emphasis added] carburetor heat while operating in conditions conducive to carburetor icing, which resulted in a total loss of engine power, a forced landing, and impact with a tree."

There are numerous carb icing probability charts out there as well as other informative materials available online that may increase your knowledge of carb icing hazards. Beware of probability advice that limits the hazard to certain temperature/humidity ranges. The free online FAA Pilot's Handbook of Aeronautical Knowledge, Chapter 7 provides best practices worth reviewing. The discussion of carburetor icing begins on page 7-9. [PHAK Chapter 7 \(faa.gov\)](#)

Stay safe and ice free! Marshall

**Safety Video:** The National FAA Safety Team chose aircraft performance and monitoring as the December 2021 topic of the month. [Aircraft Performance Monitoring. #FlySafe GA Safety Enhancement Topic | by FAA Safety Briefing | Cleared for Takeoff | Medium](#) For the average GA pilot, the video starts a little slow but the segment between 3 and 13 minutes is well worth viewing. The piece offers practical suggestions on establishing pilot-airplane baseline performance. The underlying concept is not to be seduced by the POH performance numbers that were developed by proficient test pilots flying new airplanes. Find out what you and your airplane can do on a typical day at typical mission weights. The video uses the Alaska Off Airport Operations Guide [Off Airport Ops Guide \(faasafety.gov\)](#) while discussing this topic. Additionally, it presents some useful rules of thumb for determining airplane performance degradation due to density altitude. The video wraps with a mini review of aircraft limitations and a practical interpretation of their meaning.

**Rolling the Dice:** While reviewing recent accidents I came across two particularly egregious fatal accidents that occurred within the last month. The NTSB preliminary reports (links below) contain enough information to tell us the pilots involved had ample warning and time to reverse the course of events but chose to gamble on continuing despite extremely degraded circumstances.

November 24, 2021; 2 Fatal; Cessna T210R; N6209; Accident Number ERA22FA076.

<https://data.nts.gov/carol-reppen/api/Aviation/ReportMain/GenerateNewestReport/104318/pdf>

December 3, 2021; 1 Fatal; Cessna 182L; N182NS; Accident Number CEN22FA058.

<https://data.nts.gov/carol-reppen/api/Aviation/ReportMain/GenerateNewestReport/104344/pdf>

The Pilot's Handbook of Aeronautical Knowledge Chapter 2 covers Aeronautical Decision Making (ADM).

[https://www.faa.gov/regulations\\_policies/handbooks\\_manuals/aviation/phak/media/04\\_phak\\_ch2.pdf](https://www.faa.gov/regulations_policies/handbooks_manuals/aviation/phak/media/04_phak_ch2.pdf)

There are many snappy acronyms designed to help a pilot take a disciplined approach to ADM. I like the 3P model – Perceive, Process, Perform. In my mind, this tells me to constantly evaluate my situation and adjust as necessary to complete the mission or safely recover. It's worked for 45 years so far. The important thing is to put ADM into practice and not let our desire to complete our mission override our common sense.

Perceive, Process, Perform and Stay Safe! Rocky