FAASTeam
Safer Skies Through Education

FAA Aviation Safety

Aeronautical Decision Making (ADM)

The General Aviation Joint Steering Committee (GAJSC) contends that many general aviation (GA) accidents stem from inadequate Aeronautical Decision Making (ADM) and resource management skills. This fact sheet will discuss what ADM is and how the 3-P Model can help you integrate ADM principles into your flying. We also review the many benefits of Flight Risk Assessment Tools (FRATs).

What is ADM?

A common thread among many GA accidents is the inability for pilots to execute sound decisions. It could be a dismissal of a known risk, a willingness to press on in conditions beyond a pilot's capabilities, or the absence of information to make a good decision about that flight (e.g., inadequate weather briefing). ADM provides a systematic approach to the mental processes used by pilots to consistently determine the best course of action in response to a given set of circumstances. In other words, ADM is what pilots intend to do based on the latest information they have.

ADM is a continuous process from preflight to tie-down. The three major categories of ADM are pre-flight, in-flight, and post-flight. Each has its unique set of concerns. Understand that effective risk management takes a great deal of introspection, patience, and practice.

3-P Model

To help pilots better apply the principles of ADM, the FAA adopted the 3-P Model (Perceive — Process — Perform). This three-step process offers a simple, systematic approach to accomplishing each ADM task during all phases of flight. To use it, you need to:

- **Perceive** the given set of circumstances for your flight. That means gathering all relevant information pertaining to your flight. This allows you to perceive the mission and the environment in which it will be flown. This step begins during preflight but continues throughout the flight.
- **Process** the information you gather, evaluate its impact on flight safety, and determine your best course of action. This analysis continues during the flight as you receive new information.
- **Perform** by implementing the best course of action. Performance results become information to be perceived and analyzed. Based on those results, pilots will decide whether to continue with the action or make a change.

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Flight Risk Assessment Tools (FRAT)

Because every flight has some level of risk, it is critical that pilots are able to differentiate, in advance, between a low-risk flight and a high-risk flight, and then establish a review process and develop risk mitigation strategies. A FRAT enables proactive hazard identification, is easy to use, and can visually depict risk. It is an invaluable tool in helping pilots enhance their ADM skills and should be a part of every flight.

Although designs can vary, FRATs generally ask a series of questions that help identify and quantify risk for a flight. The FAA Safety Team (FAASTeam) currently offers a FRAT tool that follows the PAVE checklist, covering questions on the **P**ilot, **A**ircraft, en**V**iroment, and **E**xternal Pressures.

For example, you may be asked how much rest you've had, how much time you've had in the aircraft, and what the weather conditions are for your destination. Based on the answers you supply, a total risk score is calculated.

No FRAT can anticipate all the hazards that may impact a particular flight, but there are some common hazards that GA pilots encounter regularly.

The FAASTeam's easy-to-use and GA-focused FRAT can get you started in effective safety risk management. The FRAT is currently available as an automated spreadsheet available at bit.ly/FAASTeamFRAT.

The ADM Process

A few key factors to identify while working through the ADM process are the ability to:

- note that a change has (or hasn't) occurred;
- identify your own biases;
- be honest with yourself and your ability;
- set (and adhere to) personal minimums;
- resist external pressures (perceived saving time/money/face);
- prepare (and use) a plan B;
- and continuously evaluate the outcome.

Resources

FAA Safety Team Course — The Art of ADM
bit.ly/ADM-3P

FAA Pilots Handbook of Aeronautical Knowledge, Chapter 2, ADM (PDF download)
bit.ly/PHAKchapter2

FAA Risk Management Handbook
bit.ly/2ZlgqFQ

Jan/Feb 2017 *FAA Safety Briefing* — Risk Management:

⇒ "Risky Business: The What, How, and Why of Risk Management"
https://adobe.ly/2iBEi3h

⇒ "Say Ahh ... A Pilot's Guide to Self-Assessing Risk"
https://adobe.ly/2ibKIH0

⇒ "Is My Aircraft Right for Flight? The Importance of Preflight Prep"
https://adobe.ly/2iePJ4p