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SAFETYWIRE

The Danger Zone

(By Larry Fields, (Acting) FAA Flight Standards Service Executive Director; Orig. Published in “Cleared for Takeoff”)

It’s likely that everyone who loves aviation has by now seen “Top Gun: Maverick,” one of the hottest summer 2022 movies, along with the original “Top Gun” film. You’re also likely familiar with the opening music, “The Danger Zone” by Kenny Loggins. As the first stanza goes:

Revvin’ up your engine/Listen to her howlin’ roar
Metal under tension/Beggin’ you to touch and go
Highway to the Danger Zone/Ride into the Danger Zone

While riding into the Danger Zone is an inherent occupational hazard for military aviators, that’s not the case for either commercial or general aviation. On the contrary, the FAA expects — in fact requires — those who fly in the civilian world for commercial purposes or personal pleasure and convenience to actively avoid the danger zone where accidents can occur.

Shovin’ into (System Safety) Overdrive

In that connection, social media is full of lively debate about the “real” cause of GA accidents. Some threads focus on deficiencies in so-called stick-and-rudder skills and suggest — incorrectly — that the addition of risk management to training curricula diverts attention from airplane handling skills. In fact, most accidents have multiple causes. That is why the FAA has focused so much on the concepts of system safety and the discipline of risk management. These terms and their formal definitions may sound abstract. But, as characters repeatedly assert in the slapstick “Airplane!” movie, “that’s not important right now.”

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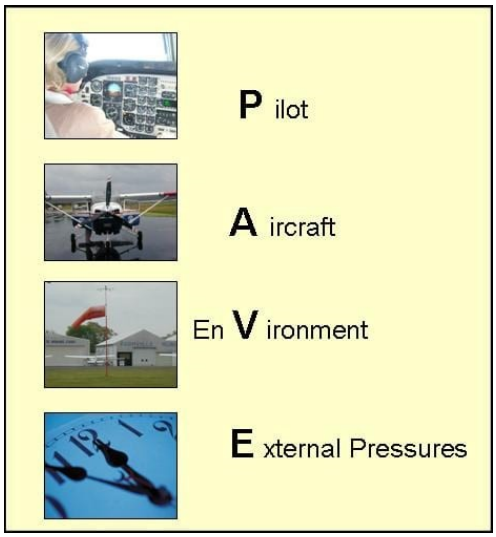
What is important is a practical understanding of how to use system safety to keep yourself out of the aerial Danger Zone. Think of it as the mortar needed to bind individual regulatory bricks together and build a sturdy barrier to accidents. GA flight operations clearly constitute a complex system with many variables:

- Pilots have different levels of knowledge, skill, experience, ability, and discipline.
- Procedures, such as instrument approaches, can be very complex.
- Equipment, including airframes and avionics, changes rapidly.
- Services, such as those provided by airports and air traffic control, can vary and are already changing as NextGen technologies are deployed in the National Airspace System.
- The flight environment, including weather, is a critical factor in the safety of every flight.
- External factors can have a substantial impact, especially if the pilot doesn't consciously recognize them.

Revvin' Up Risk Management

A key part of system safety approach is risk management, a decision-making process designed to methodically identify hazards, assess the degree of risk, and determine the best course of action.



To make system safety and risk management practical for real-world GA operations, the FAA Safety Team (FAASTeam) advocates a simple three-step process:

1. Perceive, or identify, the possible hazards associated with each category in the well-known PAVE checklist: Pilot, Aircraft, enVironment, and External Pressures.
2. Process, or analyze, by evaluating the severity, probability, and/or exposure of the risk posed by the hazard(s) you identified in step one.
3. Perform by finding ways to eliminate or mitigate the severity, probability, and/or exposure of each of the identified hazards.

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In this issue, the magazine team explores system safety and risk management in the context of persistent accident factors in various phases of flight: preflight; taxi; takeoff and departure; maneuvering flight; and approach and landing. Accidents in these areas all imply some degree of deficiency in the pilot's knowledge, skill, and risk management abilities. Even the world's best stick-and-rudder pilot is at risk if deficiencies in weather knowledge or risk management ability lead to inadvertent flight into IMC.

So, join us as this issue explores ways to "fly 'way from the Danger Zone!"

Cleared for Take Off is the FAAST teams Digital Magazine, Here is a link to their home page where you can find this article, as well as the rest of their archive.
https://medium.com/faa

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Going Long— The Physiological Risks of Fatigue

(By Dr. Susan Northrup, FAA Federal Air Surgeon)

Dr. Susan Northrup, FAA Federal Air Surgeon

As I write this article, I am catching up from AirVenture. This wonderful experience tends to be very busy so fatigue is very much on my mind and I suspect that it is for many of you. In general, we think of fatigue as acute (recent sleep deficit), chronic (multiple days of inadequate sleep), or circadian (related to time of day and normal physiological lows). In commercial aviation, there are specific safeguards to limit the duty day depending on reporting time and number of legs. These regulatory restrictions do not apply to operations under 14 CFR part 91, but our physiological limitations do. The number of mishaps attributed to fatigue, some fatal, clearly demonstrates this.

Fatigue impairs the brain's executive functions including attention, multitasking, and decision-making, sometimes dramatically. This can result in confusion, task fixation, increased errors and, of course, drowsiness. Unfortunately, your ability to recognize this is also impaired.

Early in training, we are more likely to dedicate time specifically to flying, whether local or cross-country. Both tend to focus on meeting explicit regulatory requirements (hours and distance). This makes sense in flight training; the goal is to learn essential aviation skills as efficiently as possible. But this approach might not prepare you for your first actual long-range solo or sole pilot flight without someone reviewing your planning. Tack on fatigue and you increase the risk of an adverse outcome.

Here are a few potential pitfalls. The risk of fatigue should be obvious when you experience inadequate sleep, trans-meridian travel (jet-lag), recent illness, hectic work week, etc., but it's unwise to underestimate human ability at self-deception. Even if you had enough time for sleep, it might not have been restorative. Stress, alcohol (even within legal minimums), some medications, or a poor sleeping environment, can lead to unexpected (and unrecognized) fatigue. Even the flight can contribute: preparations, duration of flight at altitude, weather, or unfamiliarity with the course are all aggravating factors. Also dehydration can mimic and magnify the effects of fatigue.

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What Can You Do?

A pre-flight and ongoing self-assessment of your fitness is critical. IMSAFE is a good tool. Pressing ahead if you feel tired is high risk, especially at night. Take a nap, reschedule the flight, or break up your trip with an overnight stay. Stay hydrated even if it requires an en route stop. For longer flights, plan shorter legs. It helps keep a safe fuel reserve, a comfortable bladder, and reduces the risk of a blood clot. (By the way, coffee is not the solution: it does not replace adequate rest). It is better to arrive safely at your destination late than not at all.

What Are We Doing?

Aerospace medicine conducts ongoing research into fatigue management and countermeasures. My staff are working with counterparts at NASA and NTSB to continue steady improvements in flight safety. Robust programs for commercial aviation can be applicable to general aviation, even for single pilot operations (see below). For over a decade, general aviation has enjoyed a steady decrease in the mishap rate. Please help keep this trend going downward.
(Click on the picture to go to the video)

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Flight Crews: Expect Flow Control to Florida This Winter

(Source: NBAA Insider Nov/Dec 2022)

As winter comes to the Northeast, the number of flights heading south increases substantially starting around Thanksgiving, said Dean Snell, manager of NBAA Air Traffic Services.

“Historically, this traffic peaks during the Christmas and New Year’s holiday and continues through spring break in March. Operators can expect the FAA to institute airspace flow programs (AFPs), especially between Thursday evening to Saturday morning for southbound flights and Sunday afternoon to Monday morning for those returning north.”

Operators have several ways of mitigating potential delays. If possible, they should plan their flights outside of the hours when peak demand is expected. Leaving earlier on Thursday or later in the day on Friday can help southbound flights, and leaving early on Sunday will likely beat the historical afternoon traffic out of Florida to the north.

> “Pilots may request or file the WATRS routes southbound into Florida to avoid an airspace flow program through Jacksonville Center.”
>
> **DEAN SNELL** *Manager, NBAA Air Traffic Services*

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Ground delay programs are more likely to occur at Florida airports such as West Palm Beach (PBI) and Naples (APF) on the weekends, and at the popular metropolitan New York-area airports of Teterboro (TEB), Morristown (MMU) and Westchester County (HPN) on Sundays and Mondays.

Traffic volume is not the only factor in flow control programs, Snell noted. Staffing at the air route traffic control centers along the East Coast is a factor as we are still emerging from the pandemic. To ensure that the traffic does not exceed the capacity of the airspace sectors involved and the controllers who work them, the FAA may initiate required reroutes that segregate the flight paths into Florida.

Airspace flow programs may also be implemented which "will capture flights transiting specific airspace, using a specified floor and ceiling altitude resulting in an expected departure clearance time."

Regardless of direction, air traffic passing through can test the capacity of Jacksonville Center's airspace, especially if a staffing issue results in combined sectors, where a controller is working an additional block of airspace. These circumstances depend on the day, traffic demand and staffing availability, Snell said.

"Typically, airspace flow programs only affect southbound flights destined for Florida. For northbound departures, Miami Center will frequently use mile-in-trail restrictions to provide larger gaps between the flights," Snell explained. "And if 50 flights want to depart Palm Beach on Sunday afternoon, they all cannot depart in an hour, so that's when departure delays are likely to occur."

Like Jacksonville Center, Washington Center is a common choke point for northbound flights, especially those bound for Philadelphia and New York. Operators with appropriately equipped aircraft can avoid delays by filing the deepwater offshore WATRS routes that bypass potential delays in Washington Center airspace.

"It is not a route the FAA will assign," Snell said. "Pilots may also request or file the WATRS routes southbound into Florida to avoid an airspace flow program through Jacksonville Center."

Operators can mitigate AFP delays by filing early through their flight plan service provider, which has the ability to send the information to the FAA 24 hours in advance of departure, said Snell.

"The FAA bases its metering programs on known airspace demand based on flight plans in the system for a given time. Filing 24 hours early protects them from being a pop-up flight, which usually results in increased delays."

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SAFETY MANAGER'S CORNER

ATTACHMENT 24 - SAFETY MANAGEMENT SYSTEM (SMS) COMPONENTS QUESTIONAIRE AND ACCIDENT HISTORY

The USFS aviation program views Safety Management Systems (SMS) as a critical element for contract evaluation. This attachment seeks to identify effective and safe aviation operations of an Offeror that include implemented policies and practices that support the Offeror's SMS. These components should be fully integrated into the daily activities of an Offeror. A complete response is required to accurately assess the Offeror's level of implementation and effectiveness and Contractor's will be held to these standards during contract performance.

This is a copy of the new Attachment 24 SRM section from a US Forest Service contract. It is marked up in red font with references to which PRISM SMS Tool you might use to provide evidence for that question. Note that some questions can only be answered by your Operations Manual, which is outside the scope of PRISM ARMOR. There may be some USFS regions using the old format so please use the version requested by the USFS in your area. Feel free to contact PRISM customer support for some further guidance if needed. For the full document with every section notated, please see the training section of the ARMOR website. *CLICK HERE TO GO STRAIGHT THERE*

Safety Risk Management			
11	2	3.2.1.1 3.2.2.1	3.2.1.1 - Provide evidence that the Offeror developed and maintains a formal process to identify and track hazards including risk Analysis (Exposure), Risk Assessment (Severity and likelihood), Decision Making (Mitigations). ARMOR RPT, RAT, IEP, Assurance Checks, Risk Matrix Tool 3.2.2.1 - Has the Offer developed and maintained a formal process that ensures analysis, assessment and control of the safety risks associated with identified records.
12	2	3.2.1.1	Provide evidence that the Offeror has a hazard/threat reporting program. ARMOR RPT, RAT
13	2	3.2.2	Provide evidence that the Offeror has a policy to daily conduct operational risk assessment and or use a flight risk assessment tool, customized and appropriate for their operation. PRISM SMS Manual, ARMOR FRAT, GRAT
14	2	3.1.2.1	Provide evidence that there is a process to mitigate high scoring risk assessments or obtain and record approval of the Offeror's management when it exceeds a predetermined level. ARMOR FRAT, GRAT

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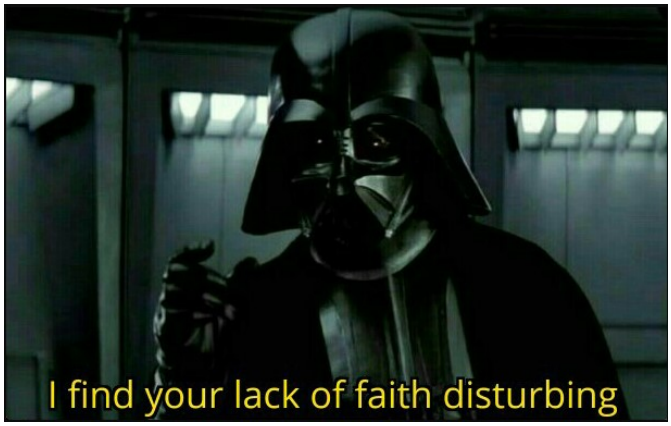
Quote of the Month

"A true professional is always looking for continued growth and knowledge "
– Kodey Bogart

The aviation industry is never stagnant, we are always looking to enhance safety, our aircraft, and our equipment. We should strive for the same mentality in ourselves. If we don't push ourselves to grow as professionals, we will not only be left behind, we are bound to repeat the same mistakes.

When someone says: "There's no way you'll make it home for the holidays"



Happy Holidays!

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UPCOMING COURSES

March 28 to March 30, 2023—PRISM Course
Safety Management System (SMS)
Denver, CO

Sept 26 to Sept 28, 2023—PRISM Course
Safety Management System (SMS)
Denver, CO

Go to Upcoming Training Classes to register.