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SAFETYWIRE

AINsight: Don't Swim with Sharks

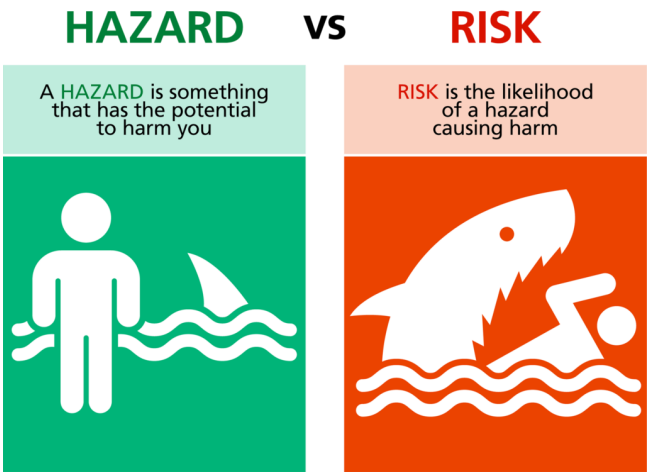
by Stuart "Kipp" Lau - March 25, 2022

Smaller Part 91 business aircraft operators have shown a reluctance to embrace safety management systems (SMS). A key component of SMS is safety risk management, which aviation safety professionals define as "a decision-making process designed to methodically identify hazards, assess the degree of risk, and determine the best course of action." Or, as the FAA says: "a formalized way of dealing with hazards."

It is easy to understand some resistance by smaller operators to adopt a voluntary safety system when it sounds so complicated. Perhaps a better option to explain risk management is to break it down into "bite-size" chunks and demonstrate that SMS is scalable for smaller operators.

A more simplistic way to look at risk management in action is to sit back, relax, pop some popcorn, and watch an old blockbuster movie, "Jaws." In fact, there may be no better way to explain the fundamentals of safety risk management than to unleash a man-eating shark on a coastal vacation destination only days before the summer tourist season opens.

In this movie, the concepts of hazards versus risk, production versus protection, and risk assessments and risk mitigation all play out—albeit a bit bloody—right in front of you on the big screen.



Before we get started, let's level-set the conversation by explaining the differences between a hazard and a risk. A hazard is something that can potentially cause harm, such as a shark near a beach. Risk is a situation that involves exposure to a hazard, such as swimming with a shark.

Often these two terms are incorrectly interchanged with each other. Here's the easiest way to remember the difference: to be considered a risk, an action word or verb is required. In aviation, a thunderstorm is a hazard, whereas flying in a thunderstorm is a risk. To eliminate the risk, you simply get rid of the verb.

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Back to “Jaws,” the story begins with Chrissie Watkins, a young college-aged female, skinny-dipping off a Long Island beach and promptly getting devoured by a monstrous great white shark. As a local, she understood that there was a slight risk of a shark attack while swimming in the water; unfortunately, Watkins had no awareness that a crazed great white was lurking near the shoreline.

After her death, a battle then erupted between Amity’s (a fictitious Long Island town) mayor Vaughn and police chief Brody on what to do next. In risk management terms, this became the classic example of striking a balance between production and protection. In Amity, too much production (people swimming with a giant shark) could be catastrophic, while too much protection (no tourists) could lead many local businesses into bankruptcy.

Severity					
Probability	A Catastrophic = Equipment destroyed or Fatal injury or Property loss greater than $1 million	B Critical = Serious injury / disability or Major equipment damage or Property loss greater	C Major = Serious incident or injury resulting in lost work time or Property loss greater than $10k	D Minor = Nuisance or Injury resulting in no lost work time or Use of emergency procedures ? Minor inc	E Negligible = Little consequences
1 Frequent - Likely to occur many times (has occurred frequently)	A1	B1	C1	D1	E1
2 Occasional - Likely to occur sometimes (has occurred infrequently)	A2	B2	C2	D2	E2
3 Remote - Unlikely to occur, but possible (has occurred rarely)	A3	B3	C3	D3	E3
4 Improbable - Very unlikely to occur (not known to have occurred)	A4	B4	C4	D4	E4
5 Extremely Improbable - Almost inconceivable that the event will occur	A5	B5	C5	D5	E5

Next came an informal risk assessment. Brody, sworn to serve and protect, was convinced that Watkins’s death was a shark attack. Considering the likelihood and severity of another shark attack, Brody deemed the situation as an intolerable risk.

His solution was to close the beach to the public and eliminate the hazard by hunting down the giant shark. Eliminating a hazard is the most effective control in the risk-mitigation process while isolating or separating the hazard from the people ranks third on a list of six control methods.

Risk assessments can be subjective. Vaughn had a bias towards the citizens—and voters—of Amity making money. He found an opportunity to softball the situation by convincing himself and others that Watkins’s death was an accident, caused by a fishing boat striking her. Thus, in his assessment, there was no hazard or risk to mitigate.

As it turned out, Vaughn did have doubts and implemented one of the weakest methods of controlling risk by installing warning signs along the beach. When mitigating risk, operators (or in this case the mayor) are cautioned not to choose a control method because it is easy and fast to implement. Installing signs is an administrative control that ranks fifth out of six control methods for effectiveness.

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Risk mitigation involves implementing controls based on a hierarchy of effectiveness. Ranked from the most effective control to the least:

- eliminate or remove the danger completely,
- substitute the activity with an alternative,
- isolate by separating the hazard from the people,
- engineered controls,
- administrative controls such as signs, and
- personal protective equipment.

In the end, Brody was right. Shortly after the signs were posted an eight-year-old boy, Alex was attacked and killed by the shark in view of hundreds of beachgoers. Vaughn's hazard identification, risk assessment, and risk mitigation strategy all failed. Brody then went on to finish his epic hunt to eliminate the great white shark (a hazard) and the rest of the story is history.

For the small operator of business aircraft, implementing an effective SMS does not have to be overly complicated. A great start is to begin using a flight risk assessment tool (FRAT) to identify hazards and assess and mitigate risks. The central theme for "Jaws" was "man versus nature;" for the pilot that same theme is common when identifying hazards and managing risk associated with weather and the environment. In addition, this aviation safety nerd found an underlying theme of risk management in "Jaws" and a stronger message of "don't swim with sharks."

The opinions expressed in this column are those of the author and not necessarily endorsed by AIN Media Group.

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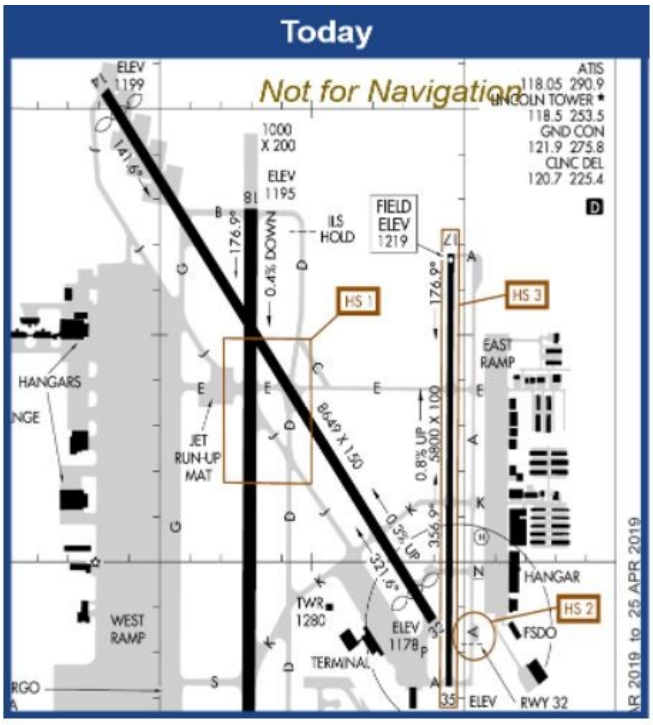
Hot Spot Standardized Symbology

Wednesday, March 16, 2022
(Source: FAA.gov)

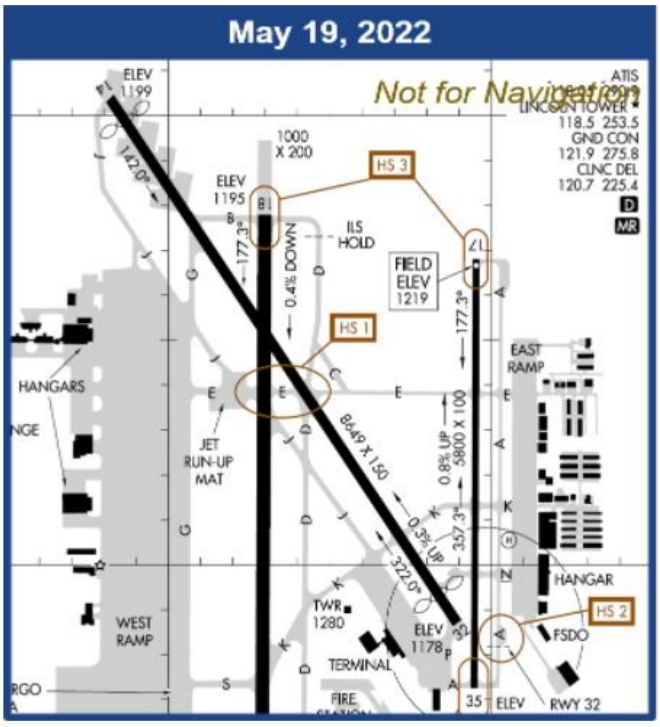
What is happening?

The FAA is standardizing hot spot symbology and verbiage. Hot spots are generally a complex or confusing taxiway or taxiway and runway intersection. Hot spots have a history or potential risk of collision or runway incursion, and require heightened attention by pilots and drivers.

Currently, there is no standard shape to designate a hot spot on airport diagrams within chart supplements and the Terminal Procedures Publication; they are charted with a variety of squares, rectangles, circles, ovals, and ellipses with no pattern or consistency. Beginning May 19, 2022, the FAA will standardize these symbols to three shapes with two distinct meanings: a circle or ellipse for ground movement hot spots and a cylinder for wrong surface hot spots.



Today, as depicted in the Lincoln, NE (LNK) FAA Airport Diagram, you can see a myriad of shapes for Hot Spots.



May 19, 2022 Hot Spots with three shapes and two meanings.

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What are the different types of hot spots?
Ground movement hot spots are defined as airport movement areas with a history or potential risk of collision or runway incursion, and where heightened attention by pilots, drivers and controllers is necessary.

A circle or ellipse will depict these hot spots, which include issues such as:

- hold short line infractions
- approach hold issues
- complex taxiway configurations
- movement-non movement boundary area issues
- tower line of sight problems
- marking and signage issues.

Wrong surface hot spots depict locations where an aircraft has inadvertently attempted to or actually departed or landed on the wrong surface. A cylinder will depict these hot spots.
The FAA is also introducing Arrival Alert Notices (AAN) at several airports with a history of misalignment risk. AANs provide a graphic visually depicting the approach to a particular airport with a history of misalignment risk. AANs will incorporate the new standardized hot spot symbology.

Why is this happening?
Wrong surface events continue to be a focus area for the FAA as they can present a significant safety risk. The FAA has taken a number of steps to address wrong surface events but there is still a need to provide a more permanent awareness of these events, especially to general aviation pilots, who comprise 83 percent of wrong surface events. The remaining percentage is pilots operating commercially. The FAA is standardizing hot spot symbology to prevent pilot confusion regarding the meaning of or depiction of hot spots.

When will airport diagrams include the new hot spot symbology?
You will begin to see airport diagrams with this new concept of standardized hot spot symbology in the May 19, 2022 charting cycle. Search the FAA Database using our search tool to access PDF versions of airport diagrams.

For inquiries or feedback and comments contact 9-awa-RunwaySafety@faa.gov

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Timing is Everything

By Susan K. Parson, FAA Safety Briefing Magazine
Originally published March 1st 2022

Life events impeded my longstanding habit of reading. But I am trying to get back in the groove with a tome on time: specifically, David Rooney's "About Time: A History of Civilization in Twelve Clocks." I can confirm that Rooney's book lives up to its marketing as "a captivating, surprising history of timekeeping and how it has shaped our world."
Like most aviation aficionados, I can channel just about any subject into something related to flying. So too with a book on time. There are plenty of examples of how the measurement of time organizes, regulates, and even tyrannizes our lives. We probably don't even notice most of them.

If, however, you are an aircraft owner, operator, or maintainer, timing really is everything when it comes to safe (and legal) operations. We have explored some of these topics in this issue of *FAA Safety Briefing* magazine, but let me close with just a few of the timing topics of special importance.

Aging Aircraft

New aircraft are everywhere, but a substantial portion of the legacy general aviation (GA) fleet continues to age. That leads to obvious questions about whether a geriatric airplane can safely continue to operate. Aging can also affect more modern construction materials and methods. Key questions include:
Where has the aircraft been geographically?
Has it been hangared?
Was it flown in any special or severe usage capacity?

Working with industry, the FAA has devoted considerable time and resources to evaluating age-related issues, as well as key factors for miti-

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gating the effects of aging in GA aircraft. Check out the resources listed in the Learn More section. In addition, an FAA-sponsored website (aginggeneralaviation.org) provides access to type-specific aging aircraft maintenance information.

Maintenance and Inspections

Whether you own, rent, or participate in a joint ownership arrangement, you are obligated to verify that the aircraft you are about to fly is legally airworthy (it conforms to its type design and is safe to fly). Since most of these events are driven by cumulative operations or calendar dates, awareness of the appropriate timing is also important when it comes to aircraft maintenance and inspection requirements.

An oil change is a good example of maintenance required (or at least recommended) on the basis of cumulative operations. Except for new engine break-in periods, which carry their own manufacturer-recommended intervals, my former flying club generally planned oil changes for every 50 hours of flying time.

Inspections tend to be required by regulation and thus tied more closely to the calendar than to operating intervals. The Required Maintenance and Inspections chart uses the "AV1ATE" acronym to summarize the more common calendar-driven inspection intervals.

Learn More

- Advisory Circular (AC) 20–106, *Aircraft Inspection for the GA Aircraft Owner*
- Best Practices Guide for Maintaining Aging General Aviation Airplanes
- FAA-H-8083–19A — Plane Sense Handbook for General Aviation

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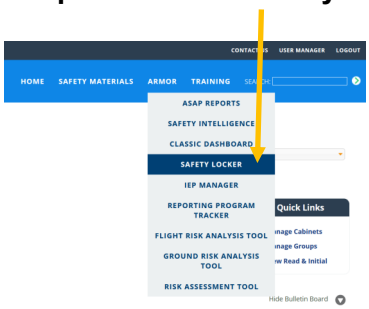
SAFETY MANAGER'S CORNER

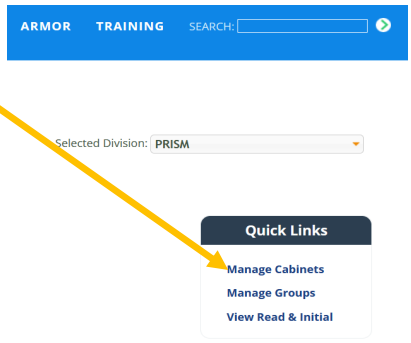
Read and Initial

The Read and initial function is a staple of the ARMOR arsenal. This simple function allows you to separate items from the pile that you would like to highlight, and for whatever reason track who has seen it. For example, lets say that your organization has had a safety finding that affects specifically one fleet, or one division. You need to make sure that all the people have seen this finding. Anyone can answer yes, but should a higher authority request proof now you have it.

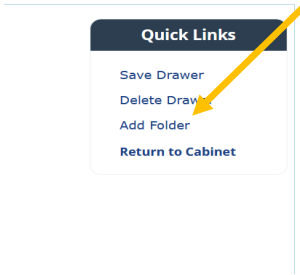
Step 1. Go to the safety locker



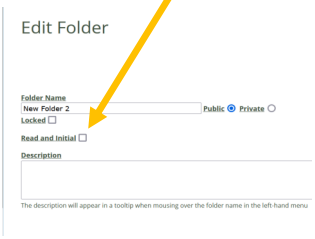
Step 2. Go to manage cabinets

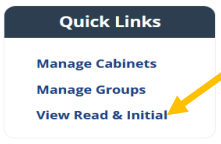


Step 3. You're going to want to add a new folder to a drawer

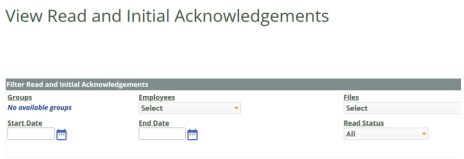


Step 4. Select read and initial

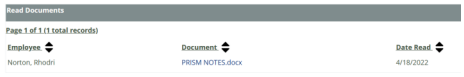




To view who has read the folder click "View read and initial" from the Safety Locker Home.



It will take you to a search function. From here just run the search to see who has read your document.



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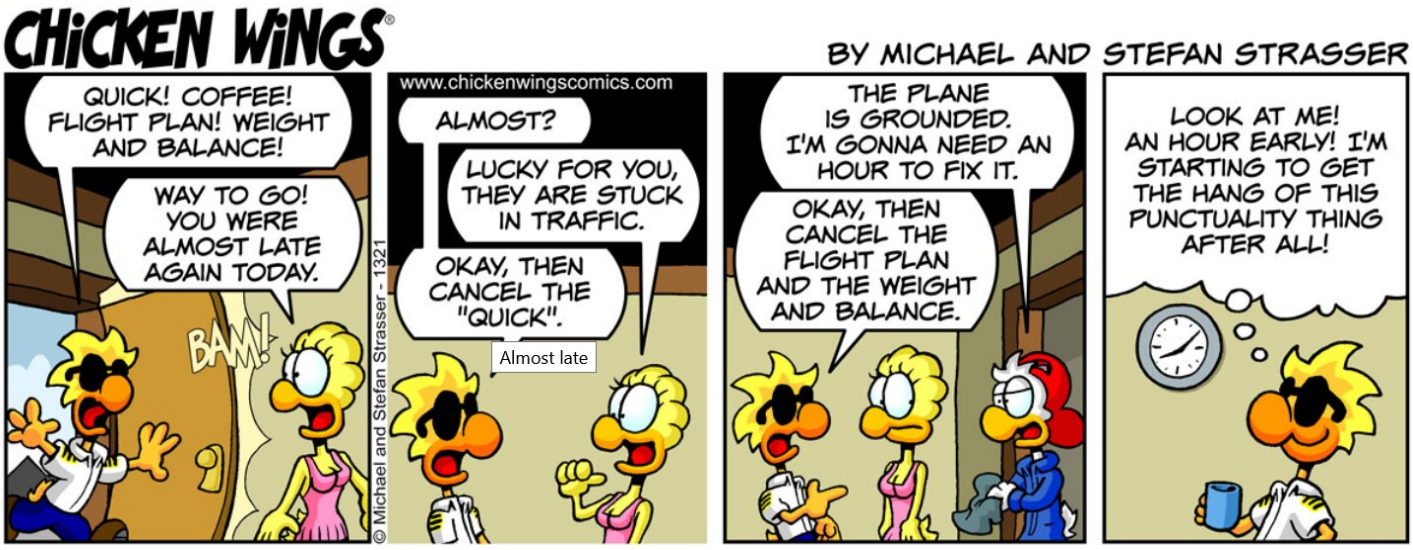
Quote of the Month

"Sometimes, flying feels too God-like to be attained by man. Sometimes, the world from above seems too beautiful, too wonderful, too distant for human eyes to see."

– Charles A. Lindbergh

We may feel God like, but the reality is we are flawed. The way we mitigate this is through a robust and functioning SMS. If you want to see the world from above, you must first put in the work on the ground.



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Aviation Lead Auditor Training (ALAT)
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Sept 27 to Sept 29, 2022—PRISM Course
Safety Management System (SMS)
Denver, CO

Oct 3 to Oct 7, 2022—PROS Course
IOSA Auditor Training
Denver, CO

Nov 28 to Dec 2, 2022—PROS Course
Aviation Lead Auditor Training (ALAT)
Denver, CO

Dec 12 to Dec 16, 2022—PROS Course
IOSA Auditor Training
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Go to Upcoming Training Classes to register.