



The Safety Beacon is for informational purposes. Unit safety officers are encouraged to use the articles in the Beacon as topics for their monthly safety briefings and discussions. Members may also go to LMS, read the Beacon, and take a quiz to receive credit for monthly safety education.

November/December 2017

A Day About Risk Management

Every year, CAP units are required to devote a day to the discussion of Safety and Risk Management. That day is to be scheduled anytime in the first three months of the year. The January, February, March timeframe is right around the corner and this year we are providing some resources to help all unit safety officers and commanders lead a fruitful discussion on risk management. On the next page, check out info on the dedicated webpage, briefings, and other suggested topics.



What Else is in the Beacon?

- There's an in-depth article about an aircraft mishap that followed a familiar scenario; it is easy to prevent but can also have a very serious outcome if the pilot isn't actively using risk management
- A short article about getting in the habit of asking "why" when you review those minor vehicle mishaps
- There's another short article on how the right questions won't just uncover the cause of a mishap, but may uncover some other areas for improvement; what it means when the damage was "found on pre-flight?"
- There are some short topics to update you on on-going safety projects and provide some safety program tips

Annual Safety Risk Management Day

Includes A Video from the Commander

George Vogt, CAP/SE

Each year, units are required to devote one day (or one full meeting) to Safety. CAPR 60-1 also requires units to dedicate one full meeting to the discussion of Risk Management. The fact is, you can't talk about safety without talking about risk management. The new safety regulation that is now in coordination combines these two requirements into the "Annual Safety Risk Management Day."

It is still one full day, or one regularly scheduled meeting, devoted solely to risk management and safety. The requirement will still be to have this Safety/RM day during the months of January through March. It is still a requirement that the entire meeting be devoted to safety and no other training may be accomplished.

This year, we are providing some materials that every unit is expected to use on their Safety/RM Day ... it is important that everyone get the same message about our CAP approach to Risk Management. Maj Gen Smith has joined in this emphasis and has provided a video introduction to the Safety/RM meeting.

Next will be a review of Risk Management. Hopefully this will be a change from the (somewhat) boring Risk Management training of the past and put Risk Management into more conversational and easy to understand language that will become common place. There is a narrated video of the briefing, or you can download the briefing slides, and the script, and present it yourselves.

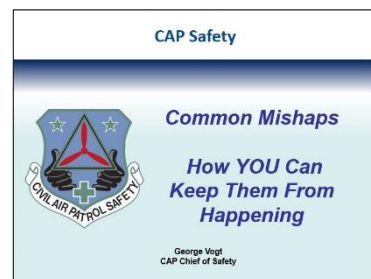


Maj Gen Smith from his
Safety/RM Day video



We have also provided briefing slides that will cover some of the more common, and easily preventable, mishaps that we see throughout CAP. These slides should help guide a discussion on what YOU and YOUR unit can do to prevent these mishaps from happening to you. As a hint, it involves Risk Management.

You can find all these resources on the Safety pages of the gocivilairpatrol.com website. Click here to view the [Annual Safety Risk Management Day – 2019](#) webpage. There are also a couple other suggested topics, and we hope that Region and Wing Commanders and Directors of Safety are passing along topics that they feel need to be emphasized to their units.



Please let us know if you have any questions, and PLEASE provide us with feedback on the materials and tell us about your unit's Annual Safety Risk Management Day!

safety@capnhq.gov

Mishap Study:

A Focus on Decision Making and Risk Management

By Collin Kightlinger, CAP/SEA

In a recent CAP flying mishap, we had an aircraft go off the end of the runway and cause minor damage to the aircraft; a blown tire and minor dents. However, it was a scenario that could have ended up been much worse than it did. Like most mishaps, it was entirely preventable. Let's look at the facts and the decision making that turned an otherwise benign flight into a mishap.

The mishap airfield has three runways available: a 7200'x150' runway, a 4500'x75' runway, and a 1904'x60' runway. The field elevation is 611 FT MSL.

It was about midday, and the weather at the field was CAVU. The temperature was 93 F, dew point 66 and the altimeter setting was 30.04. To the uninitiated into the world of aviation, all the above information adds up to mean more than the sum of the individual parts. Though it would appear that the field elevation is 611 FT above sea level, given the environmental conditions of the day the air density is actually like the field being at 3055 FT above sea level. This is significant in that there is less air to create lift or slow down a landing aircraft. The conditions of the day dictated that the landing distance for this particular aircraft would be 1445 FT *assuming* the aircraft is flying at 60 knots at 50 ft.

The first decision making error the mishap pilot made was choosing the shortest runway available to land on that day. That means a pilot would have to land in the first 459 feet of the 1904 FT runway in order to barely keep the aircraft on the prepared surface. That's less than the first quarter of the runway length. That's certainly not an impossible task, but with two other much longer runways, why risk it?

The mishap pilot crossed the runway threshold at 80 knots and was "high." No other quantified heights could be ascertained, but the aircraft did not touch down until beyond midfield. Read that sentence again with the runway length of 1904 FT and the landing distance of 1445 FT in mind.

At this point, the mishap could still be prevented. The mishap pilot could have added full power and gone around at any time during the approach, even after initially touching down. Unfortunately, the mishap pilot committed to a course of action that would result in the mishap occurring. He jumped on the brakes, almost immediately blew one tire, flat-spotted the other, and ultimately departed the prepared surface of the runway.



The causal factors in the mishap are 1) The mishap pilot failed to fly a stabilized approach to the chosen runway, and 2) The mishap pilot failed to execute a go around.

Contributing to both causal factors was the decision to use the shortest runway available. I don't know if the mishap pilot looked at the aircraft's information manual and calculated the distance to land based on the atmospheric conditions. I'm guessing he didn't, which would also be a contributing factor in this mishap. Based on the events above, it's clear that sound Risk Management was not applied on this day. What would that have looked like? I'm glad you asked.

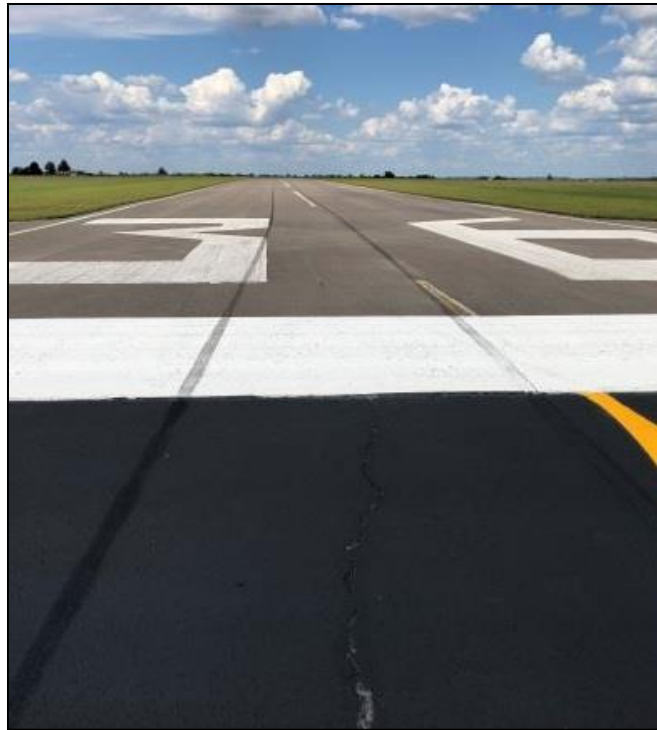
The first step of Risk Management is to identify Hazards. During this phase of flight, the landing, there are a number of hazards. Bird strike, loss of power on approach, departing the prepared surface to name a few. We'll just look at departing the prepared surface. Step two is Assess the Risks. Using the handy risk assessment matrix, we look at the probability and severity of each hazard.

Risk Assessment Matrix			PROBABILITY					
			Frequency of Occurrence Over Time					
			A	B	C	D	E	
			Frequent (Continuously experienced)	Likely (Will occur frequently)	Occasional (Will occur several times)	Seldom (Unlikely; can be expected to occur)	Unlikely (Improbable; but possible to occur)	
SEVERITY	Effect of Hazard	Catastrophic (Death, Loss of Asset, Mission Capability or Unit Readiness)	I	EH	EH	H	H	M
		Critical (Severe Injury or Damage, Significantly Degraded Mission Capability or Unit Readiness)	II	EH	H	H	M	L
		Moderate (Minor Injury or Damage, Degraded Mission Capability or Unit Readiness)	III	H	M	M	L	L
		Negligible (Minimal Injury or Damage, Little or No Impact to Mission Readiness or Unit Readiness)	IV	M	L	L	L	L
			Risk Assessment Levels					
			EH=Extremely High H=High M=Medium L=Low					

The severity of departing the prepared surface could be catastrophic, so we'll use that level of severity. The probability of departing the prepared surface is Occasional. I arrived at that using the formula developed by the Chief of Standardization, where Occasional equals 1/100,000 flight hours. Seeing as CAP flies about 100,000 flight hours per year and we seem to incur a couple of runway departures per year, Occasional seemed like the correct frequency. So, we end up with a "High" risk assessment level. Step three of the process is to Develop Controls and Make Decisions. All other things being equal on this low wind day, choosing the longest runway is the simplest way to control the risk. The next step is to Implement Controls. In this case, setting up for a landing on the longest runway. The final step is to Supervise and Evaluate. In this scenario, the pilot would evaluate his approach as on or off parameters, and once on the runway note aircraft speed and runway remaining. If at any time

during the approach or landing rollout things didn't look good, he could simply go around. The longer runway gives him more time to evaluate those decisions.

Of course, this was a formal approach that would have been slightly less involved in flight. The mishap pilot should have known the landing distance of his aircraft on that day at that airfield. Armed with that information, he should have been able to arrive at a risk mitigating decision on which runway to choose for landing. We make risk decisions all the time in flight that don't involve the full formal Risk Management process, but instead rely on a few simple questions: What could go wrong? How badly could it go wrong? How do I control that risk? Ask yourself these three questions before you start any activity and see if they help you take a less risky approach to life.



The Go-Around

George Vogt, CAP/SE

The "long landing," whether it is due to poor planning, a tailwind, or inadequate risk management, is a somewhat common occurrence in general aviation. CAP pilots are no different. In recent years, CAP has experienced several mishaps resulting from aircraft landing long and going off the departure end of the runway. Two of those cases resulted in accidents investigated by the NTSB. In each of those cases, when the pilot realized they were long and hot, and would touch down beyond their intended landing zone, the simple decision to go-around would have prevented the mishap. I'd like every pilot flying down final approach to make a conscious decision as they prepare to land ... "Do I land, or do I go around?" If you are *thinking* about the go-around, you'll be *ready* when the need arises.

Learning to ask “why”

Even on those “minor” mishaps

George Vogt, CAP/SE

In previous Beacon’s we’ve talked about the need to ask “why” during a mishap review. The desire to know “why” something went wrong is an integral part of Risk Management. Remember the risk management loop? The final step is to “Supervise and Evaluate.” The “evaluate” part ties directly to the need (and desire) to know “why” something went wrong so you can adjust your risk controls to keep that from happening again.

Not long ago I got an e-mail from one of our dedicated safety officers out in the field, and it led to a nice conversation about “why” we want to know what went wrong. In this situation some members completed a mission and were properly inspecting their van before parking it for the night. They found the broken antenna on the roof. One of them asked if something that minor needed to be reported, and of course the answer was yes. And that “yes” comes from a desire to find out “why.” Did they go under a low ceiling in a parking lot, or a fast-food drive through? Well we can make sure our drivers know the height of the van plus the antenna before they begin to drive. Perhaps the antenna wasn’t properly installed. Perhaps the plastic mount had weathered and cracked. Whatever the cause turns out to be, we can deal with it, and reduce the risk of “broken antennas.” Thanks to those members for taking the time to check the van after driving it, and thanks for asking “why.”



“Found on Pre-flight”

Some of the aircraft mishaps we see in SIRS are not entered by the person involved in the mishap, or someone who was there when the damage occurred. The damage may be discovered by the pilot who shows up to fly that airplane the next day. The most “common” of those is the tail tie-down loop that is broken or bent or missing because the tail of the aircraft scraped the runway on a previous landing.

Usually the pilot who last flew the airplane is interviewed by the mishap review officer and a common response is, “I didn’t have any landings that would have caused that damage.” At that point many review officers give up and say the cause “can’t be determined.” There are a couple more questions that need to be asked...

1) Was the damage there when you checked it on your post-flight? Sometimes their answer is that they didn’t do a post flight and/or did a poor one and can’t say if the damage was there or not.

2) Was the damage there when you checked it on your pre-flight? If they can say the damage *was* there, ask them why they didn’t report it? If they are sure the damage *wasn’t* there before the flight, then they probably caused it on their flight and you can continue trying to find out “why.”

Sometimes the pilot just doesn’t know if the damage was there before their flight because they didn’t do a thorough enough pre-flight to definitively say if the damage was there or not.

This line of questioning may not tell the review officer what caused the tail strike, or even when it occurred. But we can learn from this that our pre-flight and post-flight inspections are not as good as they should be.

A good mishap review can provide a *lot* of lessons.



Safety Shorts

George Vogt, CAP/SE

Now You Can “Friend” the FAA: For those of you who find yourself on Facebook a little more than you should, you now have an opportunity to spend some of that time discussing General Aviation Safety with an extended family of Facebook friends! Created (and moderated) by the FAA and FFAST, the General Aviation Safety Facebook Group states, “Our goal is to reduce the nation’s general aviation (GA) accident rate by building a community on Facebook where safety principles and practices can be shared through positive public engagement between the FAA Safety Team (FAASteam) and GA community.” The Admins have also posted the Group Rules, which begins with rule #1: “Compliance Philosophy. This is an educational forum to improve the safety of the National Airspace System (NAS). The FAA will not use safety discussions here for any enforcement action. We want an open and transparent exchange of information with mutual cooperation and trust between the FAA and GA community.” Log into Facebook, search for “General Aviation Safety” then answer a couple quick questions to get screened and join. We applaud their efforts. Let us know what you think of it!

Safety Program Progress: We want to keep you all updated on our progress developing the new regulations and all the tools and training that will go along with the new safety program. There are a lot of irons in the fire, but we’re making steady progress. We are still hoping for the release of the new Safety regulation (CAPR 160-1) in the first half of 2019, followed by the release of the Safety Reporting and Review regulations (CAPR 160-2) in the second half of 2019. Along with those regulations will come a lot of tools, training, websites, and guides, so it is a time-consuming process, but it will be worth it.

Mishap Entry Practice?: Learning how to enter a mishap into SIRS is a requirement for members pursuing the Technician rating in the Safety Specialty Track. There is a link called “Mishap Entry Practice” on the SIRS homepage that is normally used for this “practice” entry. It looks like the normal mishap entry page but doesn’t send e-mail notifications to leadership when the “mishap” is entered. That link is temporarily out of commission and a helpdesk request has been put in. In the meantime, if you have a valid training need to enter a “practice” mishap, you can still do it using the regular “File New Mishap” link. Please use the words TEST TEST TEST at the beginning of the Mishap Description so leadership is not alarmed when they get the e-mail (they’ll see your name and see what you wrote). We will be able to delete them from the system.

“First Aid” Mishaps: If you are a member reporting a bodily injury mishap, please DO NOT check the block that says “First Aid Only” on the mishap entry page. Clicking this in SIRS has specific meaning, and as SIRS is currently programmed, it changes the way mishaps are handled in the system. We ask that no members or safety officers below the Wing Director of Safety level use the “First Aid Only” button. This ensures the mishap is looked at by the right people and each mishap gets the attention it deserves as we look at every mishap to see “what caused it” and what we can do to prevent similar mishaps. If we see mishaps entered that have “First Aid Only” entered by someone below the wing level, we will “unclick” it to make sure all mishaps are seen by the wings. Let us know if you have any questions on that ... safety@capnhq.gov.

Mishap “Trends”: Down the road, we will have the opportunity to rebuild SIRS to make mishap entry easier, while also making the system more capable of storing, sorting, and helping us analyze mishap causes and trends. Right now, any “trend” data we have is gleaned by hand sorting mishaps to look for common types, common causes, and the potential to identify common risk controls that may be effective in reducing these mishaps. At a national level, most of our efforts (including the efforts of the Operations and Cadet Programs staffs) are geared toward addressing mishaps that have national implications. When it comes to wing or region level “trends,” the Directors of Safety and the Command teams at those levels have the same access to mishaps within their span of control as we do. We encourage all Directors of Safety to actively look at all the mishaps within their wings and regions, and regularly brief their commanders, Operations leaders, and Cadet leaders on the mishaps and causes that seem to be repeating themselves. The new regulation will have more guidance on the need to monitor and address mishap trends, as well as monitoring the emphasis that is placed on those trends.

NSOC Updates: We’ve received a few questions asking, “when is NSOC?” The short answer is that we haven’t nailed that down yet, but we can tell you that it won’t be a weeklong in-residence course in 2019. Mostly conducted on-line through webinars, readings, discussions, and “homework,” you can expect a course that includes weekly on-line “meetings” with readings and coursework just like you might see in an on-line college course. The plans are still a bit tenuous, but we envision a course that lasts about two months, with weekly on-line attendance, followed by a 2-day in-residence weekend session for a “top off” exercise and group interaction. We hope to offer two of the two-month courses in the first half of 2019 and will be offering several of the 2-day in-residence sessions across the country, so they will be convenient to all. Keep checking back here. If you are a Wing or Region Director of Safety, the new regulation will require you to take the course. This course will focus on the new Safety Program so even if you’ve attended NSOC in the past, you will want to take part.

TIPS ON ENTERING MISHAPS IN SIRS!!!! We figured we’d give a couple pointers regarding things we commonly see in SIRS entries. PLEASE DON’T USE ALL CAPITAL LETTERS WHEN YOU’RE MAKING ENTRIES. The resulting reports are very hard to read. Some of the entry fields in SIRS don’t have spell check when you use all CAPS, so your spelling errors are left for posterity. Also, when entering the brief description of the mishap, read the instructions that tell you NOT to put the member name, unit name, tail number, vehicle number, etc. These mishap descriptions go out to CAP and CAP-USAF leadership via e-mail as soon as they are filed, and we do NOT want to have member names and other sensitive information out in an e-mail.

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