



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.

January 2017

Safety Survey Coordination

The annual safety survey is being handled differently this year. Squadrons have until January 31st to complete their surveys, so time is running out. Once the surveys are completed groups, wings, regions, and the national safety staff will review the surveys. Leadership's goal is to learn how well safety programs are working at the squadron level, learn about squadron safety successes, and learn how we can help squadrons with their safety challenges.

Groups and wings will review the squadron surveys, summarize the results and send them to the regions. The regions will analyze their wings' inputs, summarize them and send the summaries up to the National Safety Office. We'll take a look at all the region and wing inputs and provide feedback to the National Commander, the National Vice Commander, and our Chief Operating Officer.

Our goal with this new approach is to provide the commanders with a meaningful way to assess the "safety health" of their units, while ensuring units are getting the help they need to be successful. This new method is a work in progress, as we determine the best way to use surveys in the future, so we want your feedback! safety@capnhq.gov

For more information on how the survey coordination will work, check out the [Safety Survey Webpage](#).

What's New in the Beacon?

We've got a wide variety of features in this month's edition of the Safety Beacon Newsletter. As always, the main focus is Risk Management and how to properly apply it in all we do.

- George Perry, a member of the CAP Board of Governors, offers some tips to help you become a better pilot and we put a CAP-specific spin on those ideas.
- There are some short topics about NSOC, Risk Safety Briefings, mishap reviews, aircraft tires, and communication throughout the safety program.
- You'll find an example of how proper training programs need to address what causes mishaps while emphasizing the "right" way to do things.
- We take a look at the lessons from one minor mishap, learning most of all that the mishap might have been avoided by analyzing the hazards *before* the mishap rather than *after*.
- Finally we have our usual summary of recently closed mishaps, with a special eye towards the lessons learned, along with a risk management success story.

FIVE TIPS TO BECOME A SAFER PILOT

By George Perry

About the Author: George Perry is a member of the Civil Air Patrol Board of Governors, and a long time friend of CAP Safety. This article was originally written for AOPA use, and he has graciously allowed us to use it.

One question pilots regularly ask is, “What can I do to be a safer pilot?” Every pilot’s situation is different, but I believe there are five things that apply universally across all of general aviation. So, if you want to be a safer pilot, I strongly recommend the following. The first one costs money, but thankfully the remaining four suggestions are free.

Equip your aircraft with Automatic Dependent Surveillance-Broadcast Out and In. This is a hot-button issue because the cost associated with installing this equipment is high. When I talk to pilots who have and don't have ADS-B equipment installed, I get two completely different viewpoints. Pilots who haven't installed ADS-B say, “It's too expensive and not required for three more years. I wouldn't pay my taxes three years in advance so why should I equip now?” Pilots who have installed the equipment say, “Wow, how did I get by without this for so long. It's like I've been flying in the dark for years and with ADS-B the lights have been turned on. Being able to see all the traffic and weather around me [subscription free] is simply amazing.” The equipage question is a pay-now-or-pay-later issue. My take: Who cares if the FAA says we should equip; Big Brother telling us what to do isn't a very compelling reason. Safety is compelling for pilots and their passengers. ADS-B gives us some valuable safety tools that we should take advantage of now. Equipping allows pilots to worry a lot less about midair collisions and unforecasted weather.

Think like a pro and fly like a pro. You're probably saying wait a minute! How on earth can I do that without years of training and thousands of hours? Simple. By filling out and flying with a personal minimums contract. Tough decisions shouldn't be made in the air. If you can, make them on the ground before you ever go flying. Use the personal minimums contract as your one-page standard operating procedures (SOP) just like the pros do. Far too often, I see good pilots overcome by the inertia of a situation and blinded by a variety of factors that make good decision making tough to do in the heat of battle. No pilot should have to pay the price for being pressured into a bad decision, but it happens. So, to avoid this, use the personal minimums contract to inform decisions and stick to the limits you've established. Do this and you'll be much more inclined to do the right thing when push comes to shove.

Plan, brief, fly, evaluate, and learn. Each flight is an opportunity to get better, but far too often pilots don't take advantage of this opportunity. We typically do a good job of planning and flying, but the briefing and post-flight evaluation parts of the cycle often get forgotten. For the briefing portion, take the time to jot down the phases of flight and the mission objectives. During the flight when time permits, jot down any mistakes or learning points. After the flight when a quiet moment presents itself, take a look at your notes and see if you accomplished your objectives and if there's anything you'd like to improve for your next flight. This process doesn't take much time, and it's amazing how much better we get when we continually evaluate our performance and strive to improve.

Share your experiences with others. We all make mistakes. Pilots who make a mistake while flying almost always recognize the mistake, take corrective action, and move on smartly. But mistakes only become lessons learned when shared. Tell the stories about the things you've messed up, learned, or discovered while flying. If you share, then others will benefit and can learn without having to experience the situation themselves.

Join a type club and participate in discussions and training. If you're already an active member of a type club, good for you! For those who aren't, consider this statistic: Pilots who participate in type club activities are up to eight times safer than a pilot who flies the same aircraft, with similar flight time and experience, but doesn't participate in one. If there was one thing I could do to be eight times safer, I'd make it a priority!

Safety starts with a desire to learn and get better. Hopefully doing some or all of these things will become your New Year's flying resolutions! Happy New Year!

Editor's Notes

George Vogt, CAP/SE

Thanks again to George Perry for allowing us to use this article. I want to provide our readers with a couple thoughts on the article; a CAP-specific look at his thoughts from my own perspective:

ADS-B. Civil Air Patrol has an active plan to equip all CAP aircraft with ADS-B. We're well on our way. A portion of the fleet is being equipped each year, with the plan to have all CAP aircraft outfitted with ADS-B well in advance of the FAA's January 1, 2020 deadline.

Personal Minimums are part of a sound Risk Management approach to aviation. Every pilot should take the time to honestly assess their own skills and their own proficiency, and determine in advance what their own limits are when it comes to ceilings, visibility, winds, and any other weather factors. Making the decision to cancel a mission because the weather is below your personal minimums is a decision that won't be questioned.

Plan, brief, fly, evaluate, and learn. I highlighted the "learn" part. Most of us are very good at planning, and we're pretty good at briefing, and we do a good job of flying. But what about after the flight? Do you take the time to review all your decisions? Do you critique your own landings to determine what you could have done better, and what you might need to practice? Is there something that happened during the flight that let you know you may need to study your general knowledge a little bit more? In the Air Force Fighter Pilot community, we were friends and comrades, but we were also our own worst critics. We would frankly (and sometimes harshly) critique our own and each other's performance after every flight because we knew it would make us better as individuals and better as a team; then we walked out as friends.

Type club? By flying for and with the CAP, you are already in a "type club" of sorts. If you learned a lesson, share it with your squadron mates. If something caught you off guard, it may catch others too. Share it with me, and I'll share it with CAP. It will make us stronger.

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Safety Shorts

George Vogt, CAP/SE

National Safety Officer College: Plans are falling into place for National Safety Officer College (NSOC) and sign-ups will begin soon! NSOC will be held 5-9 June 2017 at the NTSB Training Center in Ashburn, VA. The course is geared toward leaders in the safety program, with priority given to directors of safety, commanders, and leaders from all our mission areas. NSOC is a requirement for the Master Rating in the Safety Specialty Track, so we'll also give special consideration to those members who need to complete NSOC for their Master Rating. There should also be enough seats for all others who are interested in this course, which will focus on safety culture, risk management, mishap prevention, mishap review, and the Safety Management System approach to corporate safety programs. We will make wide-spread announcements when sign-ups open, hopefully in mid-February. In the meantime, mark your calendars for 5-9 June, and keep checking this website for more news: [NSOC 2017](#)

Pre-Activity Risk Safety Briefings: This is an on-going area of emphasis! Every activity or even a small "sub-activity" needs to have a hazard analysis, risk assessment, and Risk Safety Briefing for the participants. This is not a huge time-consuming requirement; it just formalizes the process of "Everyday Risk Management." Look for the hazards, analyze the risks, come up with a plan to mitigate the risk, and then brief the plan.

Here are a couple examples:

- Before pushing an airplane into a hangar: You are required to look for all the possible hazards. You need to determine what risk they pose, and then figure out how you can minimize that risk. The final step is to gather your helpers and deliver the plan, to include how you are going to proceed, who is responsible for what, and how you are going to work together to minimize the risk.

- Before your cadets start drill practice: Look for all the hazards like the heat, dehydration, the humidity, and the surface where you'll be practicing. Talk about the risks of fainting, or twisting an ankle, and what you can do to prevent injuries (like taking water breaks, limiting the time spent at attention, and encouraging cadets to "fall out" if they aren't feeling well). Then brief the plan and emphasize the wingman approach.

You'll be reducing mishaps, while getting in the habit of using risk management in all you do.

Mishap Reviews are for Everyone! Too often, when I am reviewing mishaps in SIRS, I'm left with questions about what might have caused the mishaps, or what actions that might have prevented them. I look at the review itself (which should be a complete summary). If that's incomplete, I look at statements, I look at the initial account, I look at the "additional information" tab, and I even look through the journal notes and attachments. Sometimes I still have questions. When that happens I send an e-mail; usually to the wing director of safety. I ask for the additional information about the weather, the surface the cadets were exercising on, the winds when the aircraft landed, the experience level of the driver of the large vehicle, or any other bit of information that appears to be missing. Sometimes, the response I get back is that they looked at those things, but just went ahead

and handled them on the spot so they didn't include it in the report. Remember that these reports benefit everyone. We use these mishap reviews to look for nationwide trends; to find out what is causing our mishaps. If something went wrong, but you "fixed it on the spot" and didn't put it in the report, then we have no way of sharing what you learned through your experience. We are building the processes and will get better at sharing ALL the lessons we learn, but we need your help in making sure we hear *everything* you learn about each mishap.

Tire Pressure! I hate to sound like a broken record but low tire pressure can cause mishaps! This is true in vehicles and true in airplanes. I recently saw a minor mishap where the pilot was surprised when his nose gear tire went flat. The discrepancy log in the aircraft actually noted that the nose tire had a "slow leak." The pilot acknowledged that he had to fill the tire before flight. When the tire was examined, the A&P found that the inner tube had a hole where there was a crease in the inner tube. That "crease" where the inner tube rubs on itself and eventually creates a hole, is one of the tell-tale signs of chronically low tire pressure. In this case the tire went flat in the run-up area, and not when the nose wheel was lowered to the runway on a landing ... that could have been a lot more scary. Tire pressures *must* be checked and verified before every mission, and flying with a known slow-leak is NOT a good application of risk management.

TIRE AGE? While we're on the subject of aircraft tire pressure, let's also talk about the age of our aircraft inner tubes. We've talked about how hot and dry climates can cause "dry rot" in vehicle tires; the drying of the rubber that results in hardness and cracking. That can happen to aircraft tires as well, and was the culprit in another case of a nose tire going flat. This one was traced to the dry and cracking rubber stem of the Schrader valve (the place where you hook up the air hose to inflate the tire). The direct sun and hot dry weather in southern states can rapidly age a tire or inner tube. It's a good idea for wings to track when inner tubes were last replaced and keep an eye out for those tell-tale signs.

Who's Reading the Safety Mail? One important component of any program, especially safety, is to have some reliable method of communicating. I am constantly looking for methods I can use to make sure *all* our safety officers, at *every* level, know about what's going on in the safety program. There is no doubt that we are in the computer age, and e-mail remains the best method of getting the word out. But, just sending an e-mail doesn't mean that the message is being received. Each month I send out an official CAP NHQ-branded e-mail to all primary safety officers at the squadron, wing, and region level. Each month, that e-mail is opened by *only* 50-60% of the addressees (58% for the December Beacon, 57% for the November Beacon). That means that more than 40% of the men and women who signed up to be CAP safety officers didn't even open the e-mail sent by NHQ about their program. This month the Beacon e-mail went to all assistant safety officers as well. I ask that all Safety Officers, and Assistants, at every level, make a concerted effort to seek out, read, and share the safety guidance we send out. You are all a vital link to make sure all our members are informed about the safety program. Your suggestions are always welcome as we look for ideas to keep the information flowing both ways and keep this conversation alive.

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Tell Them HOW ... A Success Story

George Vogt, CAP/SE

Every day Col Castle, my Assistant Chief of Safety, and I review mishap reports coming in from all over the country. Through that process we notice some trends that might not show up otherwise; we simply “sense” that we are seeing several of a certain type of mishap, or multiple unrelated mishaps from the same type of event, or in this case the same type of mishap from a couple different causes. When that happens, we start to dig. Using our current computer system, it is a bit of a painstaking process to dig into each of those mishaps and determine what might have caused each specific event. SIRS redesigns in the future will make that task easier.

In this case we noticed that there seemed to be more aircraft tail scrapes than we were used to seeing. More than you would expect from normal flight operations. As many might suspect, tails scrapes most often occur on landings, and out of all landings it seems that short-field landings are the most common “culprit.” Looking through all our recent cases of tail scrapes, another event that surprised us as a “common” cause of tail scrapes was the practice soft-field take-off.



Short-field Landing



Soft-field Takeoff

Our next step was to figure out what was causing tail scrapes on these maneuvers, and to get the word out to our members about how to prevent them. To do that, we began the conversation with our colleagues in Ops. We looked at the current “tail strike” training to see if it adequately addressed what was causing the tail scrapes that we were seeing. There is a pretty comprehensive briefing in the Ops portion of the capmembers.com website that addresses the most common causes of tail-scrapes. However, in our view, it lacks the “how.” In other words, the training lists things the pilots should avoid if they want to avoid tail scrapes, but doesn’t give much direction on HOW the pilot can prevent them; it doesn’t focus on techniques to help the pilots perform a proper soft- or short-field take-off and landing.

Let me explain that in general terms. I strongly believe that the best way to prevent someone from doing something wrong, is to affirmatively teach them how to do it right. I don’t think our primary method of preventing mishaps should be to tell people what to avoid. We need to focus our training on teaching them how to perform a given maneuver, or a given task, correctly.

With that in mind, the CAP Safety team worked with the CAP DOV team to come up with some strong training on Soft- and Short-field Take-offs and Landings. Heading up the team on the Ops side was Capt Susan Parson, the National Standardization/Evaluation Coordinator. Working from the Safety side was Col Bob Castle, the National Assistant Chief of Safety. With other members joining in, they came up with a thorough training presentation on the *correct* way to perform Soft- and Short-field takeoffs and landings, including some detailed notes on proper techniques. They teach HOW to perform and skillfully complete the maneuvers and avoid some of the common problem areas.

Here’s a link to the training briefing: [Short- and Soft-Field Takeoffs and Landings Training](#)

Here’s a link to the speaker/study notes that go along with it: [Soft- and Short-Field Notes](#)

Both of these used together are a great resource for pilot meetings, instructors working with low-time pilots, or any individual pilot who wants to learn a little bit more to enhance their own knowledge and proficiency.

Thanks to Susan and Bob for leading this effort!

***“The best way to prevent someone from doing something wrong,
is to ... teach them how to do it right”***

“Mindfulness! Vigilance!”

George Vogt, CAP/SE

The title for this piece is part of a quote from a minor mishap we recently closed. Like so many mishaps, this one started out with the best of intentions. A squadron had just acquired a new building for their squadron activities and they were hard at work fixing it up for their big 75th Anniversary event in the new facility.

There were four fluorescent light fixtures hanging from the cement beams in the ceiling, and members noted that the installation looked weak and probably wasn't up to code. There were bare wires and the chains and hooks just didn't appear to be adequate for the job. The fixtures needed to be removed and hung correctly.



The fixtures were hung with weak chains, spread at precarious angles adding to the strain. Note the bare wires leading to the fixture. This needed to be fixed.

This small inadequate S-hook straightened under the added weight, allowing the fixture to fall



One of the senior members of the squadron was highly qualified to perform this job, and he set about the task. While working on the third light fixture, the mishap occurred. The hammer drill he was using to install anchors in the concrete beams slipped from his hands, and struck the light fixture. The added weight of the drill caused one chain to come loose and the entire light fixture swung to the floor, making a loud crash. The fixture was damaged but luckily no one was hurt. The member who was hanging the light instantly knew what he had done wrong and spelled it all out in his summary of the mishap.

He admitted he was tired “after having worked a very physically (demanding) week” at work and this was to be his day off to help with the new CAP building. He was rushing the job a bit, and probably should have taken the light fixtures down before starting the re-hanging process. He saw that his drill bit was “wiped out, worn” and he was changing the bit, at the top of the ladder, when the drill slipped from his grasp.

This dedicated member instantly knew how he could have prevented the mishap, and that is pretty common once mishaps occur. Whenever we take a serious look at what caused the mishap, we find out we have an outline for what would have been a good hazard analysis and risk assessment if we had only taken the time to do it *before* the mishap. The fixture could have been removed before the drilling. He could have climbed off the ladder to change the drill bit. Fatigue and the tendency to rush could have been recognized and dealt with, perhaps by getting someone to help.

This member was more than happy to share the lessons from this mishap, and we're always thankful for that. He pointed out that the mishap could have been avoided with “mindfulness and vigilance.” I don't disagree, but what does that really mean? It means the mindful and vigilant application of Risk Management.

Remember, if we take the time to think of everything that could possibly go wrong, and take action to prevent each of those things from happening, we will almost certainly save ourselves the trouble of describing them in a mishap review.

December 2016 Mishap Closeouts

Col. Robert Castle, CAP/SEA

Keep in mind this monthly summary is a quick summary of mishaps that were brought to resolution and closed out during the month of December. The low numbers probably reflect a shorter work month rather than an actual accounting of the number of mishaps being worked.

Closed out in December:

Bodily Injury – 6, Aircraft – 2, Vehicle – 2

Bodily Injuries

The injuries closed out last month were a variety of minor mishaps. They included a cut from a broken glass, scrapes to a knee after falling during the mile run, a scraped chin after fainting during a wreath laying event and a cadet feeling light headed. With that kind of variety there is no way to assess a trend, except to see that pre-activity risk management could be improved. If we can look at a mishap and determine what led up to it, and what would have prevented it, it is usually safe to assume that a little bit more hazard analysis and risk assessment before the activity might have prevented the mishap.

Aircraft

One aircraft mishap involved a rough running engine with an uneventful landing. For all the safety officers out there, remember that we are looking at what caused our mechanical problems when they occur. Make sure that makes it into the mishap reviews.

The other mishap that was closed out was the case of mis-rigged trim that was addressed in last month's Beacon. I can't stress enough the importance of a thorough preflight before every flight, with close attention to the proper operation of all your control surfaces.

Vehicle

One vehicle mishap was a broken window on a CAP vehicle that had been left unattended in a hotel parking lot. It is impossible to prevent all of these types of events. Just be sure you have done everything possible to safeguard CAP vehicles and park them in the safest place feasible.

The second vehicle mishap involved a CAP vehicle that was backed into a tree. I will be honest when I say that these "backing" mishaps upset me more than some others. Perhaps that is because they are the most avoidable. Simply put, do not put a vehicle in motion, especially in tight spaces, unless you know that you have room to maneuver. Use a spotter. If no spotter is available, get out of the vehicle and walk around it, looking for hazards. Move the vehicle then get out and check again. Your sole mission at that point is to move the vehicle "without hitting anything!"

Good News

In past mishap closeout features of *The Safety Beacon*, we've focused on reported mishaps and what actions were taken after the mishap occurred. Two months ago, we started to include more risk management perspective in an effort to guide you through the activity planning process. Identifying hazards is a crucial first step to reducing risk for any event. Whenever we do that, it sounds like we're pointing out all the things that went wrong, or all the things people could have done better. That's all a part of learning from mistakes.

This month, rather than talk about where we fell short, I'd like to share a success story with you.

This involves an aircrew taking the time to really concentrate on their preflight; key to recognizing things that might be out of the ordinary. The crew noted that the oil level on the dipstick was well over the 8 quart mark which is the maximum for a Cessna 172. They also noticed that the oil was very clean, which was surprising since the airplane wasn't due for an oil change.

They contacted a mechanic who advised them not to start the engine what that much oil in the crankcase. The crew then advised the Wing Maintenance Officer and grounded the aircraft. Upon investigation, it was discovered that the maintenance shop had mistakenly changed the oil on the wrong airplane. The mechanic performing the work didn't notice that he was working on a 172 instead of a 182 and serviced the engine with 12 quarts of oil.

Kudos to the crew for noting the problem and taking time to investigate! Through the use of proper risk management techniques, they prevented what could have developed into anything from a huge mess to an actual engine fire or worse.

We'd love to hear of additional success stories from you! Send them to [Safety Success Stories](#) and we'll share them with your fellow members.

Mishap Narrative Entries

If you haven't already done so, please read the [November 2016 Safety Beacon](#) article on mishap entry and share the information with fellow members. We're still getting a lot of mishaps with blow by blow descriptions of mishaps, member names, CAPIDs and other information that doesn't belong in the initial mishap narrative.

Mishap Reviews

Mishap reviews should include a good idea of what led up to the mishap. What were the causal factors? What would have prevented the mishap? Quite a few mishaps are making it up for closeout without that information, which means it made it through the squadron, wing, and region without being caught; that can be improved. Let us know if you have any questions about that!

See you next month!
