



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.

October 2017

## Safety Survey

Squadron Safety Officers have probably seen that the new Safety Survey is on line. Thanks to the folks in IT, it has got a new, yet familiar, look to it. We are using the same "survey" part of eServices that other offices on the National Staff use. It will enable us to customize our surveys a little more, as well as targeting surveys to specific units, or wings, or mission areas to help us find out more about how risk management works in CAP. You can get to the Survey by going to SIRS, or click [HERE](#).

This new Survey application will also allow me to develop a separate survey for Wing Commanders and Wing Directors of Safety that will focus on their wing-level programs and provide an easier tool to summarize and comment on the surveys from their subordinate units. More info will be coming soon on that improvement!

I see a few squadrons have already filled out their surveys. If I could give one piece of advice based on what I've seen, I'd say, "Take Your Time!" This is not just something to get off your plate as quickly as you can. Go to the Survey and print out the questions. Talk to your Squadron Commander about each one. Go through the questions with the rest of your squadron for your monthly safety discussion. I want to get your ideas about what works, what doesn't, and where you need help with your programs. Thanks!!

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## 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.

- A word of thanks to a good friend who has switched positions in CAP ... see next page
- Interested in helping out on the National Safety Staff? I am looking for members, of any rank and from any unit, to help us develop and implement the new Safety Management System and to make Risk Management a part of everything we do. Turn the page to learn more.
- Believe it or not, there have been some questions about whether or not we report in-flight aircraft mechanical problems in SIRS. Check out the guidance for a more complete understanding.
- Aircraft tire inflation still doesn't get enough emphasis, so I've provided a few more resources to help everyone understand the importance of tire pressure on our CAP aircraft.
- Lots of discussion in our mishap closeouts this month. I tried to look at some common factors that we see in a variety of mishaps.
- Finally, we round it out with a couple short topics. Enjoy!

# Stay in Touch!

## *A Thank-you to Col Castle*

George Vogt, CAP/SE

For those of you who have been close to the CAP Safety Program, and a regular reader of the Beacon, I'm sure you recognize the name of Col Bob Castle. He has been my Assistant Chief of Safety for the last three years, and a friend for much longer than that. Bob has stepped away from the National Staff, and I just wanted to convey my sincerest thanks for all he has done for me, for you, and for our CAP Safety Program.

Col Castle is still very active in CAP. He has taken on the role of Deputy Chief of Staff for Operations for the Southwest Region (SWR/DO), and also remains actively involved in their safety program. He has also consented to help me out when I need his advice and his feet-on-the-ground experience ... I plan to make use of his expertise going forward.

Thanks, Bob, for all you've done and all you continue to do for CAP!

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## So, do YOU want to help?

### *Lend me YOUR safety risk management expertise*

Before too long, I will be asking for volunteers to apply to be part of the National Safety Staff. Keep an eye on the capmembers.com webpage for more information. I know there are a lot of members with extensive experience and expertise in safety risk management and I'd like to reach out.

I know we have members who are experts in Risk Management in the "day jobs." Some work with Safety Management Systems. Some teach Safety and Risk Management for various educational institutions. Some are Safety Professionals in government, and some run Risk Management programs in industry.

As we develop our own CAP-standard for Safety Risk Management, and tailor a Safety Management System that fits the unique structure and missions of the Civil Air Patrol, I can use your help. If you are interested in learning more about the program I am putting together, and want to lend a hand and lend you expertise, please drop me a line. There is a lot to do and I can use the help!

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# “Do I report it if my airplane breaks?”

## “Is an engine problem a “mishap??”

George Vogt, CAP/SE

### “Do I report a “mechanical” problem in SIRS?”

In the July Beacon we talked about what bodily injuries need to be reported in SIRS. This month I want to talk about the recurring question of whether or not mechanical issues, or electrical problems, or any other avionics issues need to be reported in SIRS. Well, every mishap *does* need to be reported, so I guess we need to figure out if a “mechanical” issue is a “mishap.” Just like last time, the first thing we ought to do is look at the definition of mishap in CAPR 62-2: *“Mishap” is defined as any unplanned or undesired, operational occurrence, or series of occurrences, that results in, or has the potential to result in, death, injury, or damage to equipment or property.*”

In other words, anything that happens that results in an injury or damage, **or has the potential to result in** an injury or damage needs to be reported. Another important part of this definition has to do with anything that is *unplanned or undesired*. A mechanical or electrical failure definitely fits that description. Finally, let’s note that CAPR 62-2, and SIRS, actually have a category called “Aircraft Mechanical.” Yes, if your engine malfunctions, or you have an electrical problem, or a flat tire, or any malfunction that changes your plans, you need to report it.

**But WHY do we report mechanicals?** Now that we’ve agreed that our CAP aircraft “breaks” are expected to be reported in SIRS, some are probably asking WHY? Well, the reason we report all mishaps is so we can determine what went wrong. If something broke, we want to find out what broke, and why it broke, so we can determine if we can prevent that from happening again. Yes, things do break, but we need to look at “why” before we can determine if it can be prevented.

### **The Nall Report: What causes General Aviation Accidents?**

Available on the AOPA Air Safety Institute website is the annual Joseph T. Nall Report. This year’s report summarizes General Aviation (GA) Accidents for the year 2014 by various categories and types (Click on logo to the right to see the report). As you might expect, the report says that approximately 73% of fixed wing general aviation accidents in 2014 were pilot-related. An additional *15% of general aviation accidents were caused by either mechanical failures or errors in aircraft maintenance.*

The subcategories of those mechanical causes included the Powerplant, Gear and Brakes, Fuel System, Airframe, and Electrical. If we KNOW that mechanical problems can cause accidents, doesn’t it make sense that we report them when they happen? If we don’t report them, and analyze what caused them, we can’t begin to prevent them or manage the risks they represent.

I actually heard of a few members who go by the idea that they should only report a mishap if it “could have been the fault of the pilot.” This idea flies in the face of everything we are trying to do with mishap reporting and reviews. If someone makes a mistake, we want to know why so we can help them prevent that mistake and we can improve the way we go about our business. If something breaks, we want to know if we could have done anything to reduce the chance of it happening again. That is why we report and that is why we ask why, continually, until we know what contributed to the mishap.



Questions?

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# Aircraft Tire Pressure

George Vogt, CAP/SE

I've talked about the importance of aircraft tire pressure, but I continue to see some cases where low tire pressures may be a factor in some of our minor mishaps, and I see that not all our pilots fully understand the importance of the correct tire pressure. I want to take this opportunity to make a couple quick points, and provide a few helpful resources.

First of all, the POH requires the pilot to check the pressure in the tires. The preflight inspection in Chapter 4 has a step which directs, "Main Wheel Tire -- CHECK for proper inflation ..." Chapter 8 of the Cessna Information Manuals lists the prescribed air pressures. Our [NHQ-approved Aircraft Checklists](#) have the required tire pressures already added to that Preflight step.

The FAA says, "**Inflation Pressure Control.** Tire pressure should be checked **DAILY** using a calibrated gauge ..." (FAA added the bold face). That guidance can be found in [FAA Advisory Circular 20-97B](#). The FAA also says to follow the recommendations of the tire manufacturers, and there is manufacturer guidance posted on the FAA websites. How important is tire inflation? Michelin says that maintaining proper tire pressure is the "single most important action that you can do to prevent tire-related events." They also note that visual checks **don't work**. It is almost impossible to tell if a tire is 10% or even 20% low, yet manufacturers recommend that a tire be removed from service for inspection if more than 10% low.

Let's take a look at some of the specific guidance from those manufacturers:

Michelin offers a comprehensive lesson on tire care. [Michelin Tire Safety](#) Note on page 18: "Tires that leak to below 90% of nominal are no longer acceptable for service if the tire was operated and it must be removed."

Here is Goodyear's [Aircraft Tire Care Manual](#). Check out this table from Goodyear:

Cold Tire Service Pressure	Recommended Action
100 to 105 percent of loaded service pressure	None - normal cold tire operating range.
95 to less than 100 percent of loaded service pressure	Reinflate to specified service pressure.
90 to less than 95 percent of loaded service pressure	Inspect tire/wheel assembly for cause of pressure loss. Reinflate & record in log book. Remove tire/wheel assembly if pressure loss is greater than 5% and reoccurs within 24 hours.
80 to less than 90 percent of loaded service pressure	Remove tire/wheel assembly from aircraft (See NOTE below).
Less than 80 percent of loaded service pressure	Remove tire/wheel assembly and adjacent tire/wheel assembly from aircraft (See NOTE below).
0 percent	Remove tire/wheel assembly and adjacent tire/wheel assembly from aircraft. Scrap tire and mate if air loss occurred while rolling (See NOTE below).
<b>NOTE:</b> Any tire removed due to a pressure loss condition should be returned to an authorized repair facility or retreader, along with a description of the removal reason, to verify that the casing has not sustained internal damage and is acceptable for continued service.	

I am not an A&P. However, as a pilot, I want to know everything I can about my aircraft and systems. Do any wings out there have a good method of ensuring your members are following FAA and manufacturer guidance on tire inflation?

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# Mishap Closeouts

George Vogt, CAP/SE

I'm changing things up a little this month and in months to come. I'm not going to give you a tally of how many mishaps were closed in the last month, but I am going to give you some representative samples of the types of mishaps we saw, and some of the lessons we can learn from them.

Why the change? First of all, as I continue to stress to everyone who will listen, a "rate" of mishaps, or the number of mishaps you have or close in a given month, isn't a key metric when it comes to the purpose of a safety program or measuring the success of a safety program. The key with mishaps is making sure we learn all we can from them in an *effort to prevent* as many as we can. The *effort* is the key.

Several things NEED to happen when it comes to the *effort* that follows a mishap:

- EVERY mishap needs to be reported in SIRS.
- EVERY mishap needs some level of review so we can learn what contributed to the mishap.
- Leaders need to look at those contributing factors, and see what preventive measures (risk controls) they can take to address those specific factors.

I mentioned in a previous article about aircraft mechanical mishaps that there are still some well-meaning members out there who think they don't have to report a mishap if no one was hurt, or it wasn't the "fault" of a member. Like I said, that flies in the face of everything I listed above, and what our regulation says. I will admit we need to do a better job of clearly defining a "mishap" and we will do that in the new safety regulation. But, suffice it to say, every mishap needs to be reported, every mishap needs to be reviewed to isolate what "caused" it, and then we will look at ways of addressing that cause, whatever it may be.

With all of that in mind, let's take a look at a representative sampling of mishaps that I recently closed.

## **Bodily Injuries:**

I picked three minor bodily injuries that have something in common. Even though each is unique, there is a common thread among them, and a lesson in how common "causes" can lead to a variety of mishaps. We only find those *common causes* when we look into the causes of *every* mishap and ask "how could this have been prevented?"

*The first mishap* occurred when cadets were helping with an actual SAR mission. While taking a break from the mission, cadets were looking through some of the gear in their pack. One cadet put a 4" glow stick in his mouth, and somehow inadvertently swallowed it. Thankfully, according to the WebMD website, they are not toxic. The cadet was taken to the ER and the attending physician informed them that no invasive procedures would be needed, as "this too shall pass."





*The second mishap* we're looking at occurred after cadets had finished practicing drill using rifles. As I understand it, one cadet picked up a rifle and began some unauthorized drill. Another cadet tried to take the rifle away and ended up with a laceration on his cheek as the rifle hit him in the face. This came close to being a significant eye injury.

*Our third mishap* example occurred after PT activities. One cadet decided to hang from a 2X4 brace on an overhang attached to their building. The 2X4 broke. The cadet landed on his back and got the wind knocked out of him. Again, lucky the injury wasn't worse.

What do these mishaps have in common? It is human nature to want to have fun and fool around, but there is a time and a place. Leaders of cadets owe it to our youngest members to supervise and correct lapses with instruction on the proper conduct. The Wingman concept should be reinforced as cadets learn to police their own behavior and their wingman's behavior in a way that will become second nature for the rest of their lives. Our senior cadets are in a leadership crucible and they can and should take on a supervisory role to help younger cadets become cohesive mission-oriented members of the team. We aren't putting a stop to fun ... we are showing that leadership, teamwork, and a job well done are "fun" in and of themselves.

### **Aircraft Mishaps:**

I want to look at two minor, and somewhat common, aircraft mishaps. Even though they are a bit different, I can see a couple common themes. The first thing I want to emphasize in both of these cases is that we had highly proficient pilots working hard to do their best. I am in no way finding fault with them. I am sharing their experiences in hopes of teaching everyone how important lessons can be learned from each and every mishap.



In one mishap, a pilot and another member were on a proficiency sortie. The sortie proceeded uneventfully and the pilot was going to end the mission with a practice short-field approach and landing. As both members relate, the approach and landing were fine, up until "the pilot immediately applied strong braking pressure" which resulted in a skid causing one flat-spotted tire and one tire worn all the way through until it went flat.

The short field landing is a very precise maneuver. Yes, if truly landing at a short airfield, some aggressive braking *may* be required.

However, as the FAA's Airplane Flying Handbook points out, "If the proper approach speed has been maintained, resulting in minimum float during the round out and the touchdown is made at minimum control speed, **minimum braking is required.**" (my emphasis added) When it comes to short field landings, the Private Pilot ACS says to "Apply brakes as necessary to stop in the shortest distance **consistent with safety.**" No need to hurry. No need to slam on the brakes. In a matter of a second or two you can make sure the main gear wheels are turning, you can smoothly apply the brakes, and then gradually increase the brake pressure as the aircraft continues to slow. I always like to say that things can happen fast with airplanes, but there is rarely ever a need to be abrupt about anything. Even the quick and the immediate can be done smoothly.

The other mishap was a ground handling problem. A highly experienced mission pilot was in a hurry to get launched and on his way to the mission base after being stuck in afternoon traffic. Admittedly in a hurry, he began to pull the aircraft out of the hangar without ensuring the upper hangar doors were open. The top of the tail hit the upper hanger doors and the aircraft came to a stop. As the review officer noted, "as soon as the top of the tail contacted the upper hangar doors (he) stopped pulling on the tow bar and reversed the aircraft to move it back from the doors." As the airplane was pushed back, the right elevator hit the hangar wall.

Two things strike me about this one. First of all, "in a hurry" is a common hazard around airplanes, but it is never an excuse for not doing risk management, or not finishing a checklist. We all understand the tendency to want to hurry but whether we are moving an airplane on the ground or flying an airplane in the air, checklist items don't get skipped. Certain things can be hurried but certain things can't. It takes a finite amount of time to accomplish a checklist. In this case, the risk management steps of opening doors and checking clearances can't be skipped and need to be accepted as part of the time it takes to launch.

The second thing that hits me is the impulse to immediately reverse the direction of the aircraft once it initially made contact with the upper hangar doors. Like I said about the first mishap, it is rarely advisable to do anything abruptly, or quickly, or impulsively when handling an airplane. Whenever you are performing a task, and something goes wrong, especially when you are on the ground ... pause. "Knock it off." Figure out what went wrong. Re-run your risk management process. Determine what can go wrong and what you can do to keep that from happening. Then proceed.



### **Vehicle mishaps:**

I'm going to discuss a couple old standards in the Vehicle mishap section this month. I call them "old standards" because they are a couple of the more common causes of vehicle mishaps and they are probably very preventable.

The first case was a “bad vibration” coming from the left front of a CAP van. Luckily, before the tire had a tread separation or blow-out at highway speed, the driver was able to pull into a repair facility where they found out the tire was experiencing belt separation. Probably cause? Age and dry rot. We’ve discussed both of those at some length here in the Beacon. I am pushing for some better guidance on inspecting our tires for age and condition. Every wing could (should?) have a program that records and tracks the ages of vehicle tires. A program like that should be part of the Director of Logistics’ and Transportation Officer’s area, but Directors of Safety can help. At the squadron level, I encourage every squadron commander to ask their transportation and safety officers to work together to closely monitor the age of all their vehicle tires and to regularly inspect for visible signs of aging.

The second “old standard?” Backing a CAP van into another vehicle. Two cases here have the similarity of having spotters available but not used. As I’ve noted before in these pages, that is a violation of CAP regulations. More up my alley, is that it also shows we are not following the simple steps of risk management by asking “what can go wrong” and “what am I doing to prevent it.”



In the first mishap, the driver pulled the van through one parking spot in the large store parking lot and into the spot in the next row, so they could pull out straight and not have to back out of the spot. When the driver and two cadet passengers came out of the store, there was another vehicle parked behind them. After getting into the van the driver decided he needed to maneuver some to turn the large van into the traffic flow. He didn’t check to see the car behind him. He didn’t deploy a spotter. He backed into the small compact car, moving it back 2-3 feet. Wouldn’t this have been a great opportunity to teach those two cadets how Everyday Risk Management is a constant process? And, oh yeah, we would have avoided another mishap.

The other “backing” mishap was similar. In this case the 7-pax van was in the CAP parking lot. Two senior members hopped in and began to back up. They did not look at surrounding area before climbing in. They did not deploy the passenger as a spotter. They admit they were having a conversation as the van was backed into a CAP pick-up truck parked behind them. There is always time for risk management if it is built into everything we do. We’ve got some work to do on this one, and it is as

easy as making a personal commitment to not move a vehicle until you know what the hazards are. Don’t you do this with your own vehicles at home?

.....

***“...how could this have been prevented?”***



# Safety Shorts

George Vogt, CAP/SE

## **Comply with Tower Instructions!** Unless you can't.

We all know the importance of complying with ATC instructions. But, we also know that first and foremost our responsibility as pilots is to safely fly our airplanes. That means there are occasions where we simply can't comply with what ATC has asked us to do.

I recall a recent minor mishap where a C182 landed on a runway approximately 3,000' long. Tower instructed the pilot to "turn right at taxiway Charlie" and the pilot applied heavy braking to try to make the requested right turn, ended up in a bit of a skid and flattened a tire. We all want to help the tower out with their sequencing, but our first duty is to safely fly our airplane. This pilot was a relatively low-time pilot with just over 200 hours. He was probably planning on letting the plane roll a little then turn off further down the runway. In this case, our pilot tried to quickly change plans, might have been going a little too fast to make that first taxiway, and got himself in a little bit of a bind. A perfectly acceptable response would be to transmit, "sorry, unable, I'll exit at taxiway Delta."

For those who would like to brush up on your communications with Tower controllers, here's a great FAA publication: [Runway Safety: Best Practices...](#) On page 7 we can see that a pilot is expected to "Advise ATC if you anticipate a delay, *or are unable to comply with their instructions.*"

On page 27, they address exiting the runway. "After landing and reaching taxi speed, you are expected to exit the runway at the first available taxiway or as instructed by ATC." Remember that "after ... reaching taxi speed" means you accomplish your normal safe landing and slow to a safe taxi speed *before* beginning your turn off the runway. I used to teach basic students to land then slow to taxi speed before they ever began to look for a taxiway.

Fly your plane.



## **What Do Safety Officers Do With Mishaps?**

As I review mishaps in SIRS, I go through all the tabs, and all the summaries and statements, with one thing in mind ... trying to determine what caused or contributed to this mishap. That is the only way we can focus our efforts on controlling the hazards and risks that resulted in the mishap.

Finding those contributing factors is the job of the Safety Officer, but which safety officer? Trick question ... that role belongs to ALL safety officers.

If the mishap occurred at the squadron level, then the squadron safety officer should be reviewing it and letting the squadron commander know what they found. The wing director of safety should make sure all that information is in there before the mishap gets to the wing commander. The region director of safety should know what might have caused the mishap and make recommendations to their commander on how to prevent it before the region commander comments.

Commanders at every level should check to make sure that information is there. If it isn't? Send it back to the safety officer, and let them know you expect that level of information on all mishaps.

That is the team approach when it comes to reporting mishaps, reviewing mishaps, determining what caused them, and determining how to control the risks we've discovered.

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