



The Safety Beacon is for informational purposes. Simply reading the Beacon does not satisfy your monthly safety education requirements but unit safety officers are encouraged to use the articles in the Beacon as topics for their monthly safety briefings and discussions.

June 2016

## SUMMER SUN!!



**Borrowed from the NHTSA website, this graphic tells it all. Summer is upon us and the biggest single hazard we face is heat. Please make protection from the sun and its heat a major priority of your summer risk management!**

### What's New In This Issue?

- Check out a few pointers for handling the Encampment Season. Risk Management tips, another reminder about the heat and something to remember when filing mishap reports in SIRS.
- There are a few Safety Program reminders on the Safety Shorts page.
- There's an article about human factors, how our mind can play some tricks on us, and why it is important to take your time and consider all factors when planning and performing your risk management. You may find you don't know what you don't know.
- There's a summary of mishap close-outs that can be used to spur discussion at your squadron safety meetings. What would you have done, and how can some of these recurring mishaps be prevented?
- We have a couple summer safety links from the National Highway Traffic Safety Administration to help protect you from the hazards of the summer heat and the summer holidays.

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# Encampment Season!!

George Vogt, CAP/SE

School is out for the summer and that means it is the busiest time of the year for Cadet events. NCSAs, Encampments, Academies, and regular weekly meetings throughout the summer bring a fresh set of hazards. We need to renew our focus on the disciplined practice of Risk Management in everything we do. As a reminder, I want to cover a few of the biggest hazards we face during summer activities. There are some things you can do to reduce mishaps, and some things you can do to help us learn from the mishaps that do occur.

First of all, let's talk about Risk Management. The process of Safety Risk Management must be openly and visibly practiced during every phase of every event. *Before* the event the safety officer and activity director are involved in identifying hazards, assessing risks, and suggesting mitigations during the planning phases. *During* the events we must constantly reassess hazards and remind our cadets to be aware of the risks they are facing and take appropriate actions to avoid mishaps. *At the end* of each day and at the end of the event, leaders must review their processes and update their plans based on what they've learned.

Focusing on risk management like this serves the obvious purpose of avoiding mishaps. But there is also a long term result; our cadets learn by example and seeing risk management employed in a disciplined manner shows them how it works, and how it fits into everyday life. Cadet Programs staff members at NHQ are working closely with the National Safety Staff to find new ways to integrate safety risk management into every stage of cadet training. If I get my way, teaching cadets about the proper use of risk management in every facet of life will become one of the stated objectives of CAP's cadet program. Every leader of cadets can take the first step by becoming examples of how risk management can be employed. Set the example. Talk about it. You are being watched.

Here are a few tips that can help, and a few things to be aware of:

Risk Management: As you prepare to start every single activity, everyone should do a very quick risk assessment. Ask yourself and your fellow participants these two questions: "What can go wrong?" and "What are we doing to prevent it?" As you begin each event, you want to focus on mitigating risk while accomplishing the "mission." About to run the mile? Your goal is to run it as fast as you possibly can, "...without getting hurt."

Heat: A lot of our members spend most of their lives in an air-conditioned environment, and now we're participating in outdoor events in the blazing heat of summer. It can take several days to a week to acclimate to hot temperatures and humid conditions. Children and adolescents take longer than adults to acclimate, and are more susceptible to heat stress. Be aware of that. Vary the amount of outdoor time and provide for shade, water, air-conditioning, and rest. Help keep an eye on each other.

Mishap Reports: For all you Activity Safety Officers out there... Unfortunately some mishaps will occur, and when they do we need you to give us as much information as possible on what caused the mishap ... what could have prevented it. We see a lot of reports put in the system that say nothing more than "cadet twisted knee" with lots of info on what the treatment was. If we see mishaps in the system as "First Aid Only" and they don't tell us about what led up to the mishap so we can learn from it, we will send it back to the wing commander to appoint a review officer.

**Have a great time "...without getting hurt!"**

# SAFETY SHORTS

George Vogt, CAP/SE

## Know Your Aircraft Systems

Every now and then we see a mishap report where there was an aircraft system malfunction, or something broke in the engine of the aircraft. A lot of these small malfunctions, like a popped circuit breaker, or malfunctioning gauge, don't have an associated checklist to tell us exactly what to do. When that happens, a solid knowledge of all the components of that system and what they do will help us analyze what is wrong and how to proceed. The best pilots pride themselves on their systems knowledge, right down to knowing all the systems and symptoms involved when that proverbial circuit breaker pops. It's not enough to know what happens when an aircraft system is working correctly. Do you know enough to know what to do when it *isn't* working correctly? How well do you *really* know your aircraft?

## Engine Problems in Flight?

I occasionally hear from members who think they don't need to enter a mishap in SIRS when they have aircraft engine problems, or electrical problems, in flight. Some pilots think that if their engine is running rough, or they have partial electrical problems, they abort their sortie, come back and land, and just let maintenance know about it.

CAPR 62-2 defines mishap 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." Let's say, for example, your engine begins running rough and doesn't develop full power. You can't correct it, and you elect to abort the mission, turn around and land. You've just had an "undesired" occurrence that "had the potential" to result in injury or damage. You've had a mishap.

Return and land. Put it in SIRS so we can determine what caused it. Maybe it was normal wear and tear, maybe it was a problem with maintenance that was performed, or maybe we'll find out the pilot made an error. Whatever the outcome, we'll know what caused it, and we can see if there are ways of preventing it. That's what mishap management is all about.

## My GPS can't find an AFB???

I saw a recent mishap that offers a good warning for all of us who rely on GPS units in our vehicles to help us find our way. In this case, the member put the address of a unit on an Air Force base in his GPS unit, and it took him to a gate that was closed. While trying to turn the large vehicle around in a confined space, he got a minor scrape. What did we learn from this very minor mishap? Our GPS units, no matter how good they are, don't know which military base gates are open and what their "closed" hours are. Most don't know the status of our favorite roads. Wherever you're going, do your research first and then let your GPS be your back-up.

## Cadet Safety Articles

Last month I put out a plea to have cadets write articles for the Beacon. I even saw that one region commander offered recognition for cadets who got articles printed in the Beacon. I still haven't seen any. ☹ Write about a safety topic. Write about an injury you had and how it could have been prevented. Write about how cadets are involved in safety in your squadron. At an encampment? Write about a mishap you saw and how it could've been prevented. For more info on how to submit an article, check out the [May 2016 Beacon](#) and let's start seeing those great ideas!

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# TRAIN YOUR BRAIN!

## *Humans as Hazards?*

George Vogt, CAP/SE

### Human Factors

All of us have heard of Human Factors in the context of safety, and most of us have read articles or sat through lengthy lectures on Human Factors. In short we learn about all the ways that different physiological and psychological traits of the human can be a factor in mishaps and safety.

We learn that fatigue can affect our decision making. Complacency can result in reduced attention to hazards and risk. Flying across time zones can affect our circadian rhythms. Ergonomics and the way we function in our cockpit can reduce efficiency and crew coordination. Going even further, we learn how our mind actually functions (or malfunctions) when confronted with difficult decisions, and how we interpret large amounts of information.

We begin to get concerned that our own body and mind are ultimately one of the greatest hazards we face when we fly. I look at human factors a slightly different way.

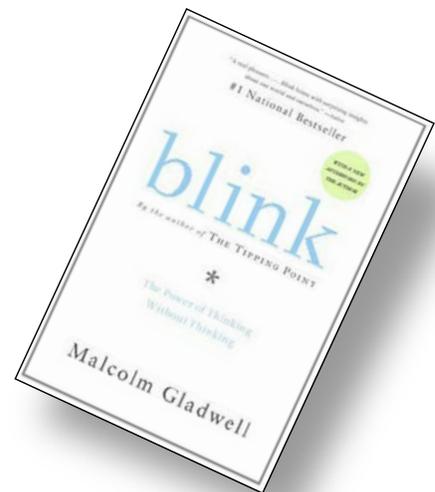
The study of Human Factors makes us aware of the “hazards” that the body and the mind present. Understanding those “human factors” allow us to analyze each of those “factors” the same way we would analyze any other hazard -- through the deliberate process of risk management. Identify the hazard, assess the risk, determine the proper risk mitigations, and apply them.

### FAA Safety Briefing



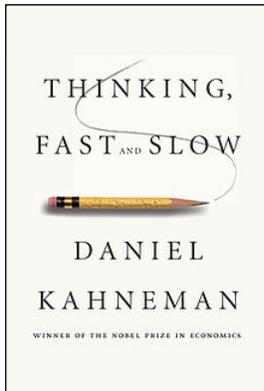
In an excellent article in the Postflight column (pg 36) of the May/Jun issue of [FAA Safety Briefing](#), Susan Parson writes about Human Factors. For those who don't recognize the name, Capt Susan Parson is the CAP National Stan/Eval Officer. In her “daytime” job she is (among other things) Editor of the FAA Safety Briefing. In her article she references a book entitled **Blink** by author Malcom Gladwell. Part of the premise of the book is that the mind takes in and processes an exceptionally large amount of information in a very short amount of time, sometimes interpreting it correctly, and sometimes not. This is

especially true in this modern era of stimulus overload that seems to come with electronic cockpits and computerized flight bags. The take away is that sometimes, when the brain is doing its best to keep up, it will give you little signals like “this doesn't look right” or that “gut feeling” you get when something is wrong. You need to respect those feelings and analyze what you're seeing.



## Thinking Fast and Slow

This reminded me of another author with similar thoughts. Daniel Kahneman is a Nobel Prize winning Economist, but his book *Thinking Fast and Slow* contains insights that translate well into the world of safety. I realize the dangers of paraphrasing and explaining complex concepts in a very short space, so I confess that I am oversimplifying some of his concepts for this article.



Dr. Kahneman describes two modes of human thinking as “System 1” and “System 2.” System 1 is the constant on-going interpretation of what is going on around us, leading to instantaneous “snap” decisions. We see this as “thinking fast” but we have to realize that some of these thoughts are based on past experiences, biases, old habit patterns, and “what worked last time.” System 2 is the slower, deliberate thought process we employ when we need to solve a problem or plan a complex task.

Much like the quick thinking described in *Blink*, we must be aware of this tendency to jump to conclusions and take the time to think through our options and come up with the best course of action.

## Knowns and Unknowns

The need to slow our thinking and do a methodical analysis of the task at hand and its hazards, reminds me of a famous quote by former Secretary of Defense, Donald Rumsfeld. It’s a bit out of context for this discussion, but I think about it when I teach people about the need to do a thorough hazard analysis as the first step of every Risk Management process.

Secretary Rumsfeld described the idea that in every situation we face there are “known knows,” there are “known unknowns,” and there are “unknown unknowns.” These concepts can be a shorthand method of identifying our hazards while we’re performing our risk management planning.

“Known knows” are those things we know we know. In a flying environment, I might know I’m going to fly a C-182, I know I am proficient in that airplane, and I know who my copilot is for this mission.

“Known unknowns,” are those things we know we don’t know. In this example, I know that I don’t know the weather at my destination. I need to find that out. I know I need to find out if there is any severe weather enroute.

The most difficult to deal with are the “unknown unknowns.” These are the hazards you’re not yet aware of and you won’t know about until you do some thorough hazard analysis of the event you’re planning. Analyzing the plan, the equipment, the personnel, and the venue while brainstorming and playing “what if” will help you identify *all* the hazards you will face.

Does all this sound familiar to you? I hope it sounds like the thorough risk management planning you do before *every* flight and *every* activity. We aren’t just satisfied with the “known knows” we remember from doing a similar task a hundred times. We must take the time to make sure we know all there is to know about the hazards and risks we face before we begin.

## HUMANS AS HAZARDS?

The tendency when we talk about Human Factors is to dwell on the frailties and weaknesses of the human body and the human mind until we look at Humans as Hazards. I prefer to think of these “Human Factors” as just one more type of hazard we face. If we are aware of those hazards, and we use the process of Risk Management to analyze and mitigate, then we avoid the idea of Humans as Hazards and begin to think of Humans as Heroes.

*Humans as Heroes!*

# April 2016 Mishap Closeouts

Col Robert Castle, CAP/SEA

As the weather gets nicer, we're getting into the busy, outdoor activity season. Everything is green (most places in the country) and squadrons are helping at air shows, dusting off their ES skills and the flying hours are starting to climb.

It's a good time to also dust off some previous Beacon articles on everyday risk management. Whether you're a safety officer at your squadron or filling some other duty position, risk management plays an important part in helping our members participate in many different types of activities *without getting hurt*. We can't prevent all mishaps from occurring – but incorporating risk management early in the planning stage of every squadron event can help eliminate or reduce the hazards present.

In April, there were **36** Bodily Injury, **7** aircraft and **6** vehicle mishaps reported.

We'll take a look at a few selected mishaps – see if there are lessons learned that can be applied at *your* unit.

## Bodily Injury

During monthly PT testing, a cadet was doing "block concrete," an exercise the cadets created. We aren't really sure how it worked. While doing this, the cadet lost his balance and hit both arms on the sidewalk resulting in scrapes.

While we encourage initiative and leadership from within the membership, the Cadet Physical Fitness Test has well defined events and CAPR 52-16 doesn't permit units or individuals to create their own testable fitness events. Fortunately, this cadet wasn't hurt badly and after the application of first aid, returned to normal squadron activities.

The use of proper risk management techniques, when properly applied, can help reduce the number and severity of injuries. In the "block concrete" example, a safety officer could look at the floor surface being used. Perhaps the exercise could be done on gym mats to reduce injuries from falling on hard, rough surfaces. Rather than use cinder blocks, are other platforms available? You could think of this as an opportunity for your members to exercise their initiative and leadership! When your cadets come up with ideas like this, we can applaud their creativity while guiding them through the risk management process.

Remember that risk management is a continuous process – once you come up with a way to avoid a hazard, you must periodically go back and check to make sure that conditions haven't changed to either create a new hazard or nullify your safety controls.



## Aircraft

One aircraft had a low voltage light illuminate during flight, another aborted the takeoff when the engine wasn't producing full power, and on a night flight, the engine started running rough. In all three cases, the aircraft were recovered safely with no injury to the crews or damage to the airplane. What would you do in these situations? "Chair flying" different emergencies and malfunctions will ensure that you're ready to deal with them when they happen to you. In each of these cases, the pilots correctly entered them into SIRS as mishaps so we could look into the causes and monitor for trends.

Two aircraft mishaps involved flat tires.

In one instance, the nose tire deflated and when the nose of the aircraft was lowered to the runway, the pilot was unable to maintain directional control and departed the paved surface. The propeller made contact with the ground, resulting in damage to the blade tips. In his report of the mishap, the pilot stated that he heard another pilot on the traffic advisory channel getting ready to land on the same runway. The CAP pilot was attempting to clear the runway for the other aircraft when directional control was lost. There are a couple of factors to consider when faced with a situation like this. Stopping straight ahead may close the single-runway airport, so taxiing clear may be the "nice" thing to do. However, safely controlling your own aircraft is your number one priority. Are you increasing the risk of injury or damage to your aircraft by trying to clear the runway? Are there other obstacles that might be in the way? What would you do?

## Vehicles

We're still seeing several tire blowouts each month. A good pre-drive inspection is important, especially for vehicles that spend a lot of time parked outdoors and are infrequently driven. Tires showing signs of dry rot should be replaced. Proper inflation pressures are a must! If your tire gauge has more than one scale on it, be sure you're using the PSI side and not the kPa side – you'll overinflate them if you use the kPa scale (yes, that happened).



One van was rear-ended while at a stop sign and another van had a window shattered by unknown object while enroute to an activity. One van sustained minor damage from a shopping cart while at a store parking lot.

Thankfully, none of the vehicles mishaps involved injury to members.

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# Summer Safety

The National Highway Traffic Safety Administration (NHTSA) is a great source for safety briefing items and some simple tips to keep us safe, regardless of the season.

With kids of all ages out of school and active at home and in the neighborhoods, the NHTSA is focusing on all the things that can go wrong when children, and vehicles, and summer heat are brought together.

NHTSA provided this link to safecar.gov: [Safe In and Around the Car](#) .

The 4<sup>th</sup> of July holiday brings fun in the sun and a great chance to celebrate our history and heritage. Unfortunately adult-beverages and car-keys come together far too often. Everyone can use a reminder ... it's just not worth it: [Drive Sober or Get Pulled Over](#)

And as a special favor to me, if you are driving on the 4<sup>th</sup> of July weekend, DRIVE DEFENSIVELY!! Assume the guy in the other car is the one that's been drinking.

***Summer Safety***

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***Semper Vigilans***