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SAFETY BEACON NEWSLETTER

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Civil Air Patrol to Adopt New Safety Management System

Big Changes Coming to CAP Safety Program

By: George C. Vogt, CAP Chief of Safety

To many of you in the Civil Air Patrol, the Safety program was perceived as a bunch of regulations and requirements. In the past, whenever there was an accident or mishap, it seemed like new requirements and rules were put in place. Safety officers would tell us to "be safe" and tell us what not to do. Those days are coming to an end, and we are ready to introduce the future of Civil Air Patrol Safety!

On 1 November 2014 I had the pleasure of briefing the CAP Senior Advisory Group on the proposed Safety Management System. Shortly after that, the National Commander, Maj Gen Vazquez, forwarded more information to the Region Commanders, outlining the new CAP "Safety Management System." He has given his go-ahead for the new system, and we will begin to see a transformational change in CAP safety, making the CAP safety program and the CAP safety culture the gold standard for volunteer organizations.

The Safety Management System coming to CAP should NOT be confused with the "Safety Management System (SMS)" page in eServices. The title of that page will change and be redesigned to be a new CAP Safety Homepage.

The New Safety Management System (SMS) is based on the FAA's Advisory Circular 120-92A. Safety Management Systems like this are mandatory for international air carriers and will soon be mandatory for all air carriers and airports in the US. This type of safety program will not be "mandatory" for us in CAP, but it will provide the framework for a program that lives up to the latest industry standards for aviation and ground operations. We will be able to tailor their model to the unique missions, structure, and the needs of CAP.

Starting with commitment from the highest levels of CAP leadership, this SMS will touch every member of CAP, with every person at every level having a key role to play in safety. You will see that the familiar Risk Management is a big part of the system, but the SMS provides a strategic guiding framework to bring Risk Management into every program and process.

A Safety Management System, as suggested by the FAA model, typically has four main areas of emphasis; what the FAA calls the "Four Pillars" of an SMS.

The first "pillar" of the SMS is a clear statement of the program's policy and objectives. Here the National Commander will lay out his vision, commitment and direction for the safety program, as well as assigning key responsibilities. As I mentioned before, everyone will have a role in this system and we will clearly let you know your responsibilities and capabilities in the system; everyone will have a voice.

The second, and probably most important, part of the SMS is Risk Management. RM will no longer be just a checklist or a quick briefing. This program will show how RM is to be implemented at every level of CAP, and it will provide you, the member, with the tools and knowledge you need to make RM part of your everyday lives in CAP. Risk Management will be engineered into every mission, every program, every process, and every activity in CAP, from planning all the way through execution.

The third part of the SMS is Safety Assurance. Once the hazards have been identified and risk mitigation measures have been put in place, we need to make sure they're working. We will monitor, report, survey, and observe to make sure our processes are working. When an incident occurs, or a process changes, or a trend is observed, we'll go back to the drawing board and re-analyze our risk mitigation measures. We will manage change as it occurs, making sure that changes lead to improvements.

The fourth pillar of the SMS is called Safety Promotion but it includes communication, education, training, reporting, and a full unfettered flow of safety information up and down, and laterally, through all of the Civil Air Patrol. Every member will receive meaningful education and training so they know how to "think" risk management and aren't just told what to do. We will value every member as a source to report hazards, originate ideas, and *never* be afraid to speak up. Everyone will have a voice. Hazard reporting will be rewarded. Lessons will be shared. Every one of us will be a wingman for our fellow members. CAP will become known for its Safety Culture.

When can you expect all this?

We are already putting some small changes into place as we review all the components of our current safety program to see what fits, what needs to be improved, and where we might have some gaps. The first thing you'll see is improved communication throughout the safety community, so tell your safety officer or director of safety that you want to know more!

At the Winter Command Council, we can probably expect the National Commander to sign his Safety Policy Letter, implementing the new SMS. We will also see the outline of a new CAPR 62-1 that follows the Four Pillar concept and provides you the tools you need to make the system work. From that point forward it will be all hands on deck as we all take part in growing a Safety Management System and Safety Culture you'll be proud of.

For more information on the FAA's Safety Management Systems, you can check out this link, keeping in mind that we'll be adapting their system to our unique needs:
https://www.faa.gov/about/initiatives/sms/explained/

Everyday Risk Management

We all hear a lot about Risk Management. We know it is a big part of our safety program in CAP. We know we're supposed to have risk management briefings before we participate in activities, and we know there are some complicated looking risk management checklists on the CAP website. But risk management doesn't need to be complicated or confusing. As a matter of fact, you're probably using risk management throughout the day, without even knowing it. By looking at everyday events and seeing how risk management helps us, we can understand it better and begin to apply risk management techniques to our daily lives.

Let's look at a situation where you come up to the edge of the road, and you need to cross to get to the other side. Since we were little kids, our parents have told us to "look both ways" before we cross the street. They may not have known it, but they were teaching us the first step of risk management.

When you look both ways you're assessing the hazards. Cars are the *hazard*. If you were to step out in front of those cars, there would be a *risk* of getting hit. If there are a lot of cars, or they are going very fast, then the severity of the risk has increased.

We want to *mitigate*, or lessen, the risk. We can wait until the cars are gone. Or, we can go to the nearby intersection and cross in the crosswalk when there is a "walk" signal. By doing that we have reduced the risk to an acceptable level, and we can cross the street.

But, you're not done yet. Risk management is a continuous process. There is still a risk of someone running the red light or turning onto your street while you're crossing. You have to continually be alert for hazards like that, and be ready to reduce whatever risk you might see until you're safely on the other side of the street and your "mission" is complete.

Easy, isn't it? With this kind of thinking through your day, you'll be safer and you'll quickly become a "risk management" expert!

Can you think of other examples of everyday risk management? This would be a great topic for a monthly safety meeting.

George C. Vogt
Chief of Safety

Winter Holiday Safety

Winter holidays are a time for families and friends to get together. But that also means a greater risk for fire. Following a few simple tips will ensure a happy and fire-safe holiday season.

HOLIDAY DECORATING

- Be careful with holiday decorations. Choose decorations that are flame resistant or flame retardant.
- Keep lit candles away from decorations and other things that can burn.
- Some lights are only for indoor or outdoor use, but not both.
- Replace any string of lights with worn or broken cords or loose bulb connections. Connect no more than three strands of mini light sets and a maximum of 50 bulbs for screw-in bulbs. Read manufacturer's instructions for number of LED strands to connect.
- Use clips, not nails, to hang lights so the cords do not get damaged.
- Keep decorations away from windows and doors.

HOLIDAY ENTERTAINING

- Test your smoke alarms and tell guests about your home fire escape plan.
- Keep children and pets away from lit candles.
- Keep matches and lighters up high in a locked cabinet.
- Stay in the kitchen when cooking on the stovetop.
- Ask smokers to smoke outside. Remind smokers to keep their smoking materials with them so young children do not touch them.
- Provide large, deep ashtrays for smokers. Wet cigarette butts with water before discarding.

Before Heading Out or to Bed

Blow out lit candles when you leave the room or go to bed. **Turn off** all light strings and decorations before leaving home or going to bed.

FACTS

- **Two of every five** home decoration fires are started by candles.
- **Nearly half** of holiday decoration fires happen because decorations are placed too close to a heat source.

Your Source for SAFETY Information
NFPA Public Education Division • 1 Batterymarch Park, Quincy, MA 02169
www.nfpa.org/education

Safe Winter Driving

Winter driving can be hazardous and scary, especially in northern regions that get a lot of snow and ice. Additional preparations can help make a trip safer, or help motorists deal with an emergency. This sheet provides safety information to your residents to help prevent motor vehicle injuries due to winter storms.

The three P's of Safe Winter Driving:
PREPARE for the trip; **PROTECT** yourself; and **PREVENT** crashes on the road.

PREPARE

Maintain Your Car: Check battery, tire tread, and windshield wipers, keep your windows clear, put no-freeze fluid in the washer reservoir, and check your antifreeze.

Have On Hand: flashlight, jumper cables, abrasive material (sand, kitty litter, even floor mats), shovel, snow brush and ice scraper, warning devices (like flares) and blankets. *For long trips, add* food and water, medication and cell phone.

Stopped or Stalled? Stay in your car, don't overexert, put bright markers on antenna or windows and shine dome light, and, if you run your car, clear exhaust pipe and run it just enough to stay warm.

Plan Your route: Allow plenty of time (check the weather and leave early if necessary), be familiar with the maps/ directions, and let others know your route and arrival time.

Practice Cold Weather Driving!

- During the daylight, rehearse maneuvers slowly on ice or snow in an empty lot.
- Steer into a skid.
- Know what your brakes will do: *stomp on antilock brakes, pump on non-antilock brakes*.
- Stopping distances are longer on water-covered ice and ice.
- Don't idle for a long time with the windows up or in an enclosed space.

PROTECT YOURSELF

- Buckle up and use child safety seats properly.
- Never place a rear-facing infant seat in front of an air bag.
- Children 12 and under are much safer in the back seat.

PREVENT CRASHES

- Drugs and alcohol never mix with driving.
- Slow down and increase distances between cars.
- Keep your eyes open for pedestrians walking in the road.
- Avoid fatigue – Get plenty of rest before the trip, stop at least every three hours, and rotate drivers if possible.
- If you are planning to drink, designate a sober driver.

NHTSA
www.nhtsa.gov

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www.osha.gov

PAUL CIANCIOLO

Keeping Your Cool in the Cold

Making the Most of Winter Flying Opportunities

Photo courtesy Civil Air Patrol Connecticut Wing

If you've decided to fly this winter — and not flee or fold up shop — then it's time to dig your airplane out of the snow and give it a good checkup. Here are some tips to help you and your airplane bear the cold and have a safe winter flying season.

Silent but Deadly

Since you'll likely be using more of your cabin heater this time of year (the predominant source of carbon monoxide (CO) contamination), be sure to thoroughly inspect your CO detector. If you use a chemical spot CO detector, check its expiration date. Once unwrapped, these simple life-saving devices typically only last three to 18 months depending on the brand. Even if still in the original packaging, it will expire after a few years.

Frost, ice, or snow the thickness of sandpaper will reduce lift by 30 percent and drag by 40 percent.

"Heaters require special attention," explains Peter Wilhelmson, an airworthiness aviation safety inspector with the FAA Safety Team (FAASTeam). "Components such as combustion liners, air pressure switches, and fuel regulator valves have been known to be problematic and have resulted in FAA issuing airworthiness directives (ADs) as corrective measures. You should know if an AD applies to the combustion heater installed on the aircraft you are working on or flying."

Since you are checking that heater, have a look at the battery as well. Although winter normally reduces cranking power, a healthy aircraft battery should only need charging after several weeks of disuse. When in doubt, have it tested. And don't forget that Title 14 Code of Federal Regulations (14 CFR) part 43, Appendix A, allows pilots to do some preventive maintenance on batteries, including replacing and servicing.

In Liquid State

Another possible contributor to poor battery performance is your engine oil. Oil that's too thick will keep your engine from starting in cold weather because it challenges your battery and starter motor to spin the engine fast enough for it to fire. Engine preheaters might help, but you may also need to change to an oil better suited for cold weather operations. Check your aircraft manual for specifics.

The other important liquid to consider is your fuel. Some aircraft require special fuel additives,

FAA photo

Left –When is the last time you or a technician inspected the heater components in your aircraft? The burned up combustion heater pictured here caused a Cessna 401 to crash in 2012. A CO leak, fuel leak, or fire can be catastrophic, so please give it special attention during your next inspection.

Below –Before any flight, clean off all frost, snow, and ice from the aircraft.

which change the low temperature characteristics of the fuel. Check with the manufacturer to see what's recommended. There is also a greater risk of water condensation in the aircraft fuel tanks during winter, so drain fluid from all water drains — yes, *all* of the drains. It may be cold outside, but this is not the time to skip this vital check.

Keep it Clean

Before any flight, clean off all frost, snow, and ice from the aircraft. Use a soft broom or snowbrush to remove snow — or better yet, use clean towels/rags to prevent scratching the paint by accident. The best way to melt frost or ice is inside a warm hangar for an hour. However, if that is not an option, spray the aircraft with an approved deicing fluid. Do not use automobile anti-freeze to deice your aircraft — it has a different chemical consistency and application requirement. Remember that frost, ice, or snow the thickness of sandpaper can reduce lift by 30 percent and drag by 40 percent.

As stated in one of its safety alerts, the NTSB "believes strongly that the only way to ensure that the wing is free from critical contamination is to touch it with your bare skin." Physically check if the wing is simply wet or if it has a thin film of ice on it. Have gloves handy to keep your hands warm after your inspection.

If you just returned from a flight and are about to depart again, check for newly formed frost or clear ice over the wings, even if the temperature on the ground is above freezing. The wings may still be below freezing due to "cold soaked" fuel tanks from flying where the air is much colder.

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Once you start moving in your aircraft, you don't want to undo all the work you did to clean it off. Taxi slowly to avoid throwing up snow and slush into the wheel wells and onto aircraft surfaces. Taking it slow is also safer. You have more response time in case the tires decide to slide on an icy patch.

"Remove the airplane's wheelpants if equipped," notes Jay Flowers, FAASTeam program manager at the Fargo Flight Standards District Office. "Slush and ice can collect inside the wheel pant and freeze the brakes to the rotors making for an interesting landing with wheels that won't spin. Removal of the wheelpants will also allow you a clearer view to inspect tire condition and the possibility of leaking fluid."

Beware that the tail section of the aircraft builds up ice three to six times faster than the wings.

Once in the air, if you see ice forming anywhere on the aircraft, get out of the icing conditions as soon as possible. Depending on where warmer air may exist, this might mean climbing to a higher altitude. If you do notice ice, pay close attention to your airspeed. As little as a 1/4 inch of leading-edge ice can increase the stall speed 25-40 knots.

Finally, avoid flying at cloud tops. The concentration of water droplets is often greatest near the top of the cloud and ice could build up quickly.

Watch Your Rear

Did you know that the tail section of an aircraft typically builds up ice three to six times faster than the wings? This is due to the sharp-edged surfaces that are more susceptible to collecting ice. And since the tail is often out of sight on many aircraft, ice buildup there can easily go unnoticed. Be sure to refer to your aircraft flight manual (AFM) or pilot's operating handbook (POH) for more on the hazards of tail ice and any specific procedures your aircraft manufacturer recommends.

If you're using an autopilot, be aware that it could mask some of the symptoms of ice accumulation (both tail and wing). Be on the lookout for abnormal elevator effectiveness and vibrations, a sudden nose-down pitch, and/or the autopilot performing excessive pitch trim.

Playing it Safe

If you experience icing, notify ATC so that others may be warned. If you are in trouble, ask for help and squawk 7700 to make it easier for ATC to pinpoint your location and help get you out of the icing conditions and land safely.

Winter may offer the best air for flying, but it also presents its own set of challenges. The most important thing to remember is that there is no such thing as a little ice. If you have a great winter flying tip not included here, please Tweet it to us at @FAASafetyBrief.

Paul Cianciolo is an assistant editor and the social media lead for FAA Safety Briefing. He is a U.S. Air Force veteran, and a rated aircrew member and search and rescue team leader with the Civil Air Patrol.

Learn More

FAASTeam Pamphlet: Winter Flying Tips
http://1.usa.gov/ZeHw2O

FAASTeam Course ALC-33: Inflight Icing
http://1.usa.gov/1r0GRxB

FAA Got Weather? Campaign
www.faa.gov/go/gotweather

NTSB Safety Alert: Aircraft Ground Icing
http://1.usa.gov/ZeHE2e

AOPA Cold Facts: Wing Contamination
http://bit.ly/1rv4rgZ

About the Author: Along with being an assistant editor of the FAA Safety Briefing, Lt Col Paul Cianciolo, CAP, is the Public Affairs Officer for the National Capital Wing of CAP, and has served as a CAP squadron Commander.

Civil Air Patrol Mishap Summary

Each month, we will provide a summary of the CAP mishaps that were closed out during the previous month. We won't have room to give all the details of every mishap, but we will talk about some of the trends we're seeing and some good risk management techniques that might avoid similar mishaps in the future. As you read each brief mishap summary, think about what hazards, what decisions, and what sequence of events might have led up to each mishap. Think about what you would have done in a similar situation. These mishaps, and how to employ risk management to avoid them, would be a great discussion for your monthly safety meeting.

There were 19 mishaps closed out during October 2014. 16 were Bodily Injury, 2 Aircraft and 1 Vehicle.

BODILY INJURY

- Cadet complained of chest pain after running.
  - After resting, cadet felt better.

- Member preflighting aircraft with flaps lowered. Member bent down to pick up a dropped fuel tester. Upon rising, his head struck the trailing edge corner of the flap.
  - First aid administered.

- Cadets playing football and ran into each other. All three later complained about sore muscles and slight headache.
  - Cadets sent home to recover – no further treatment required.

- A cadet showed signs of feeling generally unwell during a lecture. The instructor took the cadet aside and the cadet said he had been having headaches for a few weeks and it was bothering him at the moment. The cadet was evaluated by the squadron safety officer and the symptoms he described match those of a concussion.
  - Cadet was examined by a physician and determined to be suffering from a concussion sustained during a non-CAP activity.

- Cadet suffered cut on right hand.
  - First aid administered – no further information regarding circumstances available.

- Senior member tripped over tie down while flight line marshalling scraping left knee.
  - First aid administered.

- Cadet suffered first degree burn to two fingers while using a hot glue gun to build model rocket.
  - First aid administered.

- Cadet slipped and fell during the shuttle run injuring their right shoulder.
  - Aggravated previously injured right shoulder which had been cleared by physician for full use. Treated with aspirin and ice applied.

- Cadet complained of a headache.
  - With parent's permission, administered ibuprofen.

- Cadet experienced mild dehydration while running the mile during monthly PT test.
  - Cadet was given rest, water and was released to parents.

- Cadet twisted ankle while running the mile during monthly PT test.
  - Ice was applied – no further treatment required.

- Cadet walking up the stairs after PT tripped and fell, bracing himself with both hands. Complained of pain in both wrists.
  - Ice was applied – no further treatment required.

- Cadet stung by an insect on right forearm.
  - First aid applied – no further treatment required.

- Cadet stumbled and fell on track during CPFT mile-run and skinned both knees.
  - First aid administered – no further treatment required.

- Cadet wrapped a tug-of-war rope around his hand. When the rope was pulled, it caused a minor abrasion.
  - Cool pack applied – no further treatment required.

- Cadet was inspecting a static aircraft and stood up while underneath the aircraft hitting his head on a protrusion.
  - Treated at the scene by EMTs and transported to the hospital with a senior member for additional testing. Treated at the hospital for minor laceration and released.

AIRCRAFT

- The left main tire of the aircraft went flat after landing.
  - Inspection of tire and tube revealed that tube had failed along one of the assembly seams, not as a result of crew actions during the flight.

- Left main tire went flat on landing.
  - Maintenance determined the inner tube failed, resulting in flat tire upon landing.

VEHICLE

- Corporate Vehicle front brakes locked up while the vehicle was in motion on an interstate highway.
  - Driver successfully regained control of vehicle and off the highway. No injuries or damage. Vehicle had brake work done in July 2014.

SUMMARY

Bodily injuries continue to be our number one category of mishaps. Looking at the above list, five of the injuries occurred during the CPFT. Units should have a fitness program in place beyond the fitness test that helps cadets attain an appropriate level of fitness year round. Inspect the running and exercise areas for loose rocks or debris, ant hills and other hazards that could cause trips or other injury. Once the hazards are identified, try to eliminate them if possible. If the hazard can't be removed, develop a plan to reduce the risk and ensure that members are briefed about the hazards as part of your activity Risk Management briefing. Ensure cadets are suitably attired –footwear and PT clothing appropriate for the time of year. Encourage members to warm up prior to engaging in any strenuous physical activity and use proper cool down techniques afterwards.

Both aircraft tire deflations in October were attributed to failure of the inner tube and not as a result of anything the crew did. It's still a good idea to make sure crewmembers or passengers occupying the front seat are briefed to keep their feet clear of the rudder pedals prior to landing to prevent rudder or brake application when the pilot is landing.

The pilot on the flight controls for landing should make a positive check to ensure proper foot placement on the pedals to avoid inadvertently applying the brakes prematurely.

Winter Preflights (airplanes and vehicles)

With most of the country already experiencing record low temperatures as we head into winter, it's important to plan ahead for your preflight inspection. Many of our corporate aircraft and vehicles are kept in unheated hangars or are tied down/parked outside. While it may be a short period of time getting from your personal vehicle to the aircraft or van, unless proper outerwear is worn to protect against the cold, there may be a tendency to rush the preflight inspection. A coat, gloves, knit cap and footwear appropriate for the weather conditions will help maintain body temperature and help avoid the urge to rush the inspection and get the heater going after engine start. Be sure to consult CAPM 39-1 for the appropriate outerwear with each CAP uniform combination.

Make sure all accumulations of snow and ice are removed prior to flying. Test data indicate that frost, ice or snow formations having a thickness and surface roughness similar to medium or coarse sandpaper, on the leading edge and upper surface of a wing, can reduce wing lift by as much as 30% and increase drag by 40%.

If you're driving, ensure that your windows are clear of snow, frost or anything that reduces visibility. Most of our corporate vehicles have automatic day-time running lights, but if the vehicle you're in isn't equipped, having your headlights on while driving makes you more visible to other drivers especially during periods of low visibility. This is required by CAPR 77-1, but it's a good idea even in your personal vehicle.

A rushed preflight inspection, whether you're driving or flying can lead to missing something important, so dress appropriately, slow down and enjoy the ride.

By: Col Robert Castle, Assistant Chief of Safety