



July 2010, Vol 1. No. 2

## **We Care! A Note on Pre-Existing Conditions**

---

The season of encampments and other activities are in full swing. Do you lose sleep in anticipation of going to an encampment? Are you ready to fly an airplane? Are you excited to be a part of an activity staff? Would you give anything in the world to ensure you could go?

Some may choose to give up everything to participate. Showing up sick, injured, in casts, on crutches, with sprained limbs, respiratory conditions, or sunburned. Pre-existing conditions are to be listed on activity applications, and they are often left blank. Pre-existing conditions may result in a more severe injury for the person.

All members of the Civil Air Patrol need to adopt an attitude of “We Care” that says we care for ourselves, and for those around us, enough to not attend an activity if we can not meet a certain level of physical preparedness.

Cadets, senior members, and parents must ensure physical conditions are disclosed. This allows command and activity staff to establish appropriate accommodations, or help make decisions with the member or member’s parents, if participation in the activity is feasible.

If you knew that failure to disclose a pre-existing condition resulted in termination of an activity for you, would you disclose it? You must, as not disclosing a medical condition, acute or chronic, could be considered not being forthright. In some cases, you could be filling a position from which another person could have benefited.

Please complete applications with integrity and make good decisions. Share this information: think of others before yourself. This also applies to unit meetings where acute medical conditions or personal illness are not captured on a form. Communicate with your leadership. We Care!

## **Avoiding Tailstrikes** By Lt Col Al Matson, Stan/Eval Officer, MN Wing

---

One of the recurring problems we see in flight operations is tail strikes resulting in bent or missing tail tie-down rings. This problem is not unique to Civil Air Patrol, but it is a problem that we can prevent if we understand how and when this type of damage is likely to occur.

Most often tail strikes occur during soft-field takeoff and landing practice, and typically this is done with a flight instructor aboard the aircraft. The tail strike occurs when the pilot holds the yoke too far aft, either during the takeoff roll (over-rotation) or during the landing flare (over-flaring). This can be solved by development of an understanding of what we are trying to accomplish during soft-field practice.

During takeoff or landing, we try to prevent the nose wheel from sinking into a soft surface. In most cases, all this requires is just enough aft pressure on the yoke to hold the nose wheel lightly on the surface, where it will skip over the soft material. Let's face it, if you were really taking off from a surface that required you to hold the nose wheel completely off the surface, you should not be conducting the takeoff in the first place!

Since instructors usually are aboard during tail strikes (as they are instructing the soft-field procedures), they are in a position to prevent strikes. The best way to do this is for instructors to place a hand in a position to block over-rotation or over-flaring. Instructors should do this every time these procedures are practiced. Guard the yoke!

Take the time to view the video put together by Lt. Col. Nick Modders and his team at the 130<sup>th</sup> Composite Squadron, MN Wing. They demonstrate how you can safely instruct pilots on the proper sight picture during soft-field practice.

Click here to view video:  
[http://www.youtube.com/watch?v=2qBc9\\_xUMBs](http://www.youtube.com/watch?v=2qBc9_xUMBs)

Not mentioned, but very important, is the need to chock the wheels while conducting the tail lowering exercise. Below, and on the next page, you will find a few images that are meant to supplement the video.

In the image at right, you can see that the yoke is being held back using the seatbelt. This is a good idea even with a pilot aboard; to make sure that the elevator does not strike the ground when the tail is lowered.



The red circles indicate the proper areas to push down on the tail. On the horizontal stabilizer, the area is where the rivets meet on the forward spar. As mentioned in the video, pushing on other areas could cause damage.



The image a right shows the angle that would be seen with the nose wheel just skipping the surface.



This image shows the angle that would be seen when the tail ring is striking the ground. In this case, the nose wheel is more than one foot off of the ground. Way too much rotation going on here!



## FAA Updates IMSAFE

---

Use the IMSAFE personal checklist to determine personal risks. (FAA-H-8083-9)

<b>Illness</b>	—	Do I have any symptoms?
<b>Medication</b>	—	Have I been taking prescription or over-the-counter drugs?
<b>Stress</b>	—	Am I under psychological pressure from the job? Do I have money, health, or family problems?
<b>Alcohol</b>	—	Have I been drinking within 8 hours? Within 24 hours?
<b>Fatigue</b>	—	Am I tired and not adequately rested?
<b>Eating</b>	—	Am I adequately nourished? ←

IMSAFE is familiar to pilots and most CAP aircrew members. It also applies to ground operations personnel. Please share this with all your members and have a good conversation about what this means. Nourishment, or lack of nourishment, is a hot topic of awareness. There are many hot topics this time of the year and this is a good checklist for everyone to use.

## Mishaps

---

The following are based upon true stories. Resemblances of these events that may have occurred in a CAP unit near you are coincidental. You have asked for this, so here it is.

### VEHICLE

- Emergency response trailer toppled by high winds. Best Practice: Consider parking light equipment near a building if possible to protect from high winds and debris.
- 15 passenger van turned sharply and scraped a safety column. Best Practice: It is recommended that new drivers should take the opportunity to drive with a more experienced driver without passengers. Demonstrate the turning radius and stopping distances.

### AIRCRAFT

- Birdstrike.
- Rudder cable spring broken in-flight. Best Practice: Be aware of aircraft systems and understand the functionality of rudder centering springs. The aircraft is not broken; it will just require pilot input to center the rudder. Land as soon as practical.
- Engine shutter, carb ice issue. Engine died while on landing roll-out. Best Practice: Don't forget to use your GUMPS check and know that carb ice can form anytime. It does not need cold weather, it just needs humidity.

## BODILY INJURY

- Heat exhaustion. Fainted in formation. Best Practice: Increase rest periods. If a member appears to have a physical concern, remove them from the activity. Treat appropriately with rest. Most of the nation has been in an elevated risk category for heat injury and establishing a firm rest-to-work ratio is important. Cadets at encampment should be visually confirmed to have fluids in their canteens and actually drinking. If a member just stands there when advised to hydrate, it is a command responsibility to ensure they are capable and aware of the direction given and that fluids are available. Ensure adequate rest facilities so members can use the restroom when needed. CAP is on an elevated alert due to heat and the possibility of heat-related mishaps.

Remember that rehydration and rest guidelines apply to everyone – not just cadets. Often though we neglect rest recommendations, and we fail to add that heat charts also say they refer to acclimated individuals. Most members attending national or wing activities are not acclimated, and need more shade and periods of rest.

## **Hear Our Thoughts, Hear Our Experiences** By Members of the Civil Air Patrol Nationwide

Here are some of the words of wisdom often overlooked in our daily lives. Complacency can slide into our world in simple ways that we miss in the hustle and bustle of daily life. Thank you for your submissions. If you have a practice or safety awareness topic to share, the instructions are in the January 2010 "Sentinel" for your reference. Keep in mind these are ideas, not CAP policy.

Robert L McGillem	IN-123	June 2010	Care should be taken with the increase in outdoor activity in wooded and overgrown areas during the summer to prevent snake bites. Do not reach under rocks or logs. Do not step over logs. Step on the log, check the ground and then step over. Be alert and search the area ahead of you.
Joel Cosmano	AZ-112	June 2010	Food items such as an MRE and water are recommended to be put in the Aircraft when on missions. You never know if you will have to set down somewhere and how long you may be delayed.
Robert K Kelly Jr	AK-015	June 2010	A good quote for your safety bulletin board, which you should have, "Habits are safer than rules; you do not have to watch them. And you do not have to keep them either. They keep you." — Frank Crane
Devlin C Hayley	NV-069	June 2010	With summer coming, make sure to drink a lot of water.
Tony D Belto	MO-149	June 2010	NO phone call is worth a life. Let a passenger answer your cell phone or wait until you stop in a safe area to return the call.
Stephen L Kintner	TN-001	June 2010	REST- When you are overtired, exhausted, and sleep deprived, your reflexes slow down, situational awareness decreases, which open a pathway to an unnecessary mishap. (Note - All mishaps are preventable.)

George L Molitor	AZ-112	June 2010	In reference to aircraft tow bars: I have taught all of my students and pilots in our Squadron that if your hand is not on the tow bar, it will not be on the airplane. This is well received by all and greatly reduces the risk of startup with the bar still hooked to the wheel.
Thomas E Elam	IN-193	June 2010	Hanger Rash: It just occurred to me that the one thing that is missing from our checklists is aircraft movement between the finishing of the aircraft checklist and engine start, and after the aircraft is secured at the end of the flight. All of our checklists seem to assume that the aircraft is tied down on a ramp. I wonder if it would help to add checklist items between prepping the aircraft and engine start, and also after the "secure aircraft" section at the end. It seems to me that we go to a lot of trouble to check stuff, and then we do not check the things that seem to cause a lot of issues.
John Preston Slattery	NC-019	June 2010	In the 101 days of (hot) summer so far, when on encampment, or PT, the rule is to look ten paces ahead to where your feet are going to be. The same goes out on a trail; remember, what likes to sun itself on the "ROCKS." Snakes are out so "watch your hand placement." Hydrate!! Have fun!!
Kyle P Zobel	NC-048	June 2010	I would like to recommend that all squadrons perform a fire drill at least once annually as a part of a "Safety Down Day." This will allow all members to be aware of proper exit routes and emergency procedures. "I would rather practice a million times then to have a single incident due to ignorance."
Samuel L Hornbuckle	IN-001	June 2010	Ground guides are an excellent way of preventing vehicle mishaps while backing. Another use for ground guides is in areas where there are a lot of people, aircraft, or bivouac areas, or other areas where vehicles are not common to be in that can cause a possible mishap. Have the ground guide walk in front and to the left of the vehicle a few yards ahead while it is maneuvering through potentially hazardous areas ensuring the path is clear.
Kevin James Berry	PA-190	June 2010	Many members carry cell phones capable of receiving text messages. There are a variety of services available that will send users a text message whenever there is a severe weather alert issued for their area. Some charge a fee; others are offered free! I found a local TV station offering this type of service free through it weather services web site. An SMS alert service can enhance users situational awareness of potentially hazardous conditions that may affect them. This is especially important when away from home, or in a location where no weather radio or warning system is available.

## A picture is worth a 1000 words!

---



Was it a 100 grit or a 200 grit  
runway surface?



“INCOOMMINNNGGG!!!”

## Attachments

---

- CAP Safety Alert – Heat Injuries # 10-3 (Also available on the CAP Safety page, [www.capmembers.com](http://www.capmembers.com))
- Hangar Rash Best Practice (Also available on the CAP Safety page, [www.capmembers.com](http://www.capmembers.com))

## Until Next Month

---

Discover, report, stop, share, listen, and learn. The things we have read about in this issue already have happened, so you are not allowed to experience these for yourself. Remember to “Knock It Off” and slow down. For streaming dialogues on some subjects, remember CAP Safety is on Facebook and Twitter. Have a good month.





Alert# 10-03



## HEAT INJURIES

As temperatures rise the exposure to the summer elements may result in related mishaps. It is imperative that we increase awareness of heat related injuries and their cause. We must keep our members safe and alert as they participate in all CAP activities.

Operations involving high ambient temperatures and high humidity, direct physical contact with hot objects (i.e. aircraft or vehicles), or strenuous physical activities have a high potential for inducing heat stress and heat related injuries in people engaged in such operations.

AFFECTED WINGS: ALL  
AFFECTED DUTY POSITIONS: ALL  
PUBLISHED: June 17, 2010  
EFFECTIVE: Immediately  
REFERENCES: CAPR 62-2

### CAUSAL FACTORS

- I. Age, weight, degree of physical fitness, degree of acclimatization, metabolism, medications and a variety of medical conditions such as asthma, emphysema may affect a person's sensitivity to heat and may adversely impair an individual's ability to deal with heat. However, even the type of clothing worn must be considered. Prior heat injury predisposes an individual to additional injury.
- II. It is difficult to predict just who will be affected and when, because individual susceptibility varies. In addition, environmental factors include more than the ambient air temperature. Radiant heat, air movement, conduction, and relative humidity all affect an individual's response to heat.

### HEAT DISORDERS AND HEALTH EFFECTS

**HEAT STROKE** occurs when the body's system of temperature regulation fails and body temperature rises to critical levels. This condition is caused by a combination of highly variable factors, and its occurrence is difficult to predict. Heat stroke is a medical emergency. The primary signs and symptoms of heat stroke are confusion; irrational behavior; loss of consciousness; convulsions; a lack of sweating

S  
A  
F  
E  
T  
Y  
  
A  
L  
E  
R  
T

S  
A  
F  
E  
T  
Y  
  
A  
L  
E  
R  
T

(usually); hot, dry skin; and an abnormally high body temperature, e.g., a rectal temperature of 40.5°C (105°F).

If body temperature is too high, it may result in death. Individuals with heat stroke have high mortality, with rates ranging from 21 to 63 percent. The elevated metabolic temperatures caused by a combination of work load and environmental heat load, both of which contribute to heat stroke, are also highly variable and difficult to predict.

If a person shows signs of possible heat stroke, professional medical treatment should be obtained immediately. The person should be placed in a shady area and the outer clothing should be removed. The person's skin should be wetted and air movement around the person should be increased to improve evaporative cooling until professional methods of cooling are initiated and the seriousness of the condition can be assessed. Fluids should be replaced as soon as possible. The medical outcome of an episode of heat stroke depends on the victim's physical fitness and the timing and effectiveness of first aid treatment.

Regardless of the person's protests, no member suspected of being ill from heat stroke should be sent home or left unattended unless a physician has specifically approved such an order.

**HEAT EXHAUSTION.** The signs and symptoms of heat exhaustion are sweating, headache, nausea, vertigo, weakness, thirst, and giddiness. Fortunately, this condition responds readily to prompt treatment. Heat exhaustion should not be dismissed lightly, however, for several reasons. One is that the fainting associated with heat exhaustion can be dangerous because the victim may be operating machinery or controlling an operation that should not be left unattended; moreover, the victim may be injured when he or she faints. Also, the signs and symptoms seen in heat exhaustion are similar to those of heat stroke, a medical emergency.

Persons suffering from heat exhaustion should be removed from the hot environment and given fluid replacement. They should also be encouraged to get adequate rest.

**HEAT CRAMPS** are usually caused by performing hard physical labor in a hot environment. These cramps have been attributed to an electrolyte imbalance caused by sweating. It is important to understand that cramps can be caused by both too much and too little salt. Cramps appear to be caused by the lack of water replenishment. Because sweat is a hypotonic solution ( $\pm 0.3\%$  NaCl), excess salt can build up in the body if the water lost through sweating is not replaced. Thirst cannot be relied on as a guide to the need for water; instead, water must be taken every 15 to 20 minutes in hot environments.

Under extreme conditions, such as working for 6 to 8 hours in heavy protective gear, a loss of sodium may occur. Recent studies have shown that drinking commercially available carbohydrate-electrolyte replacement liquids is effective in minimizing physiological disturbances during recovery.

**HEAT COLLAPSE** ("Fainting"). In heat collapse, the brain does not receive enough oxygen because blood pools in the extremities. As a result, the exposed individual may lose consciousness. This reaction is similar to that of heat exhaustion and does not affect the body's heat balance. However, the onset of heat collapse is rapid and unpredictable. To prevent heat collapse, the person should gradually become acclimated to the hot environment.

**HEAT RASHES** are the most common problem in hot work environments. Prickly heat is manifested as red papules and usually appears in areas where the clothing is restrictive. As sweating increases, these papules give rise to a prickling sensation. Prickly heat occurs in skin that is persistently wetted by unevaporated sweat, and heat rash papules may become infected if they are not treated. In most cases, heat rashes will disappear when the affected individual returns to a cool environment.

**HEAT FATIGUE.** A factor that predisposes an individual to heat fatigue is lack of acclimatization. The use of a program of acclimatization and training for tasks in hot environments is advisable. The signs and symptoms of heat fatigue include impaired performance of skilled sensorimotor, mental, or vigilance jobs. There is no treatment for heat fatigue except to remove the heat stress before a more serious heat-related condition develops.

#### **CAP SAFETY ADVISORY**

Heat injuries have the potential of affecting ground team members and flight crews. Hydration is essential and rest is a must. It is highly recommended that members affected by heat injuries follow the direction of the medical staff or health professionals. Rest, hydration, and limited duty to recover should be considered before releasing the affected member back to participation with CAP activities.

Use of the attached Heat Index chart is encouraged to be used in the decision making process of whether a CAP activity is a GO or NO-GO based on exposure risk.

Adjusting activity schedules is highly recommended to prevent unnecessary exposure to heat. Longer and more frequent break times are recommended as the Heat Index risk exposure increases with consideration for cancelling an activity as an option.

### Heat Index

How to read the chart: Find the temperature on the left hand side, then move to the right until you find the column for the approximate relative humidity. That number will be the temperature that it will "feel" like. For example, a temperature of 95°F and relative humidity of 50% will "feel" like 107°. Add up to 15° if in the direct sun.

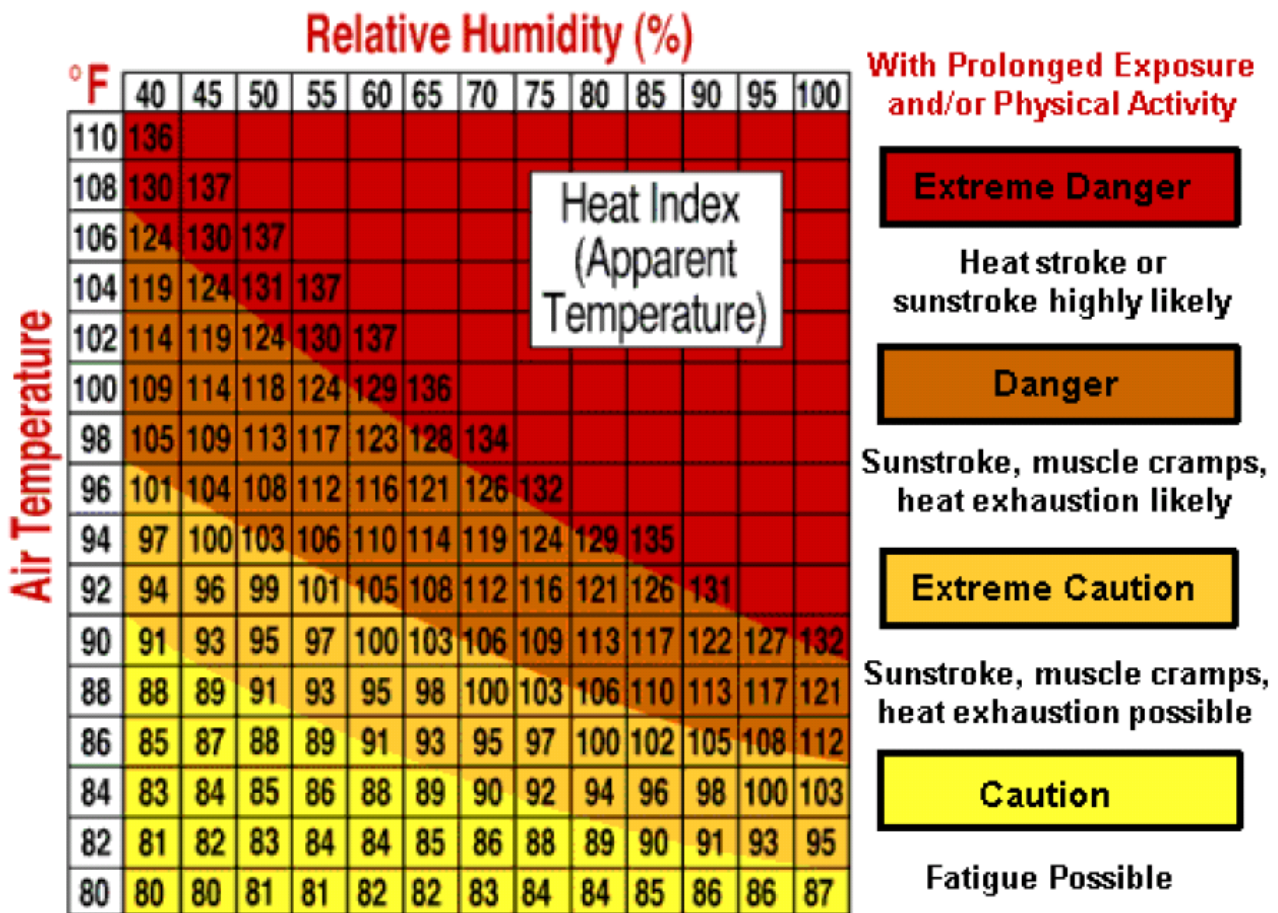
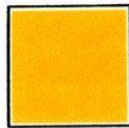


Chart source: National Oceanic and Atmospheric Administration (NOAA)

## BEST PRACTICE

### *The Pee Chart*

#### How dehydrated are you?



#### **(Highly Dehydrated)**

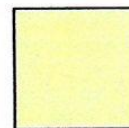
**Go drink a large bottle of water immediately!!!**



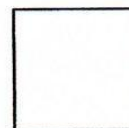
**You are still seriously dehydrated. Drinking more now will make you feel a lot better.**



**Moderately dehydrated. You lose fluid on a regular basis throughout the day. Drink more water to get hydrated.**



**Almost there. Get some more water in your system to help flush all those toxins from your body. Stay hydrated and healthy!**



**Great job. Now don't let yourself get dehydrated. Drink at least 8-12 large glasses of water throughout the day.**

**\*Caffeinated drinks dehydrate - limit your consumption.**

**\*Sport drinks can provide supplementary electrolytes, but  
Water is the Key!**

**Drink one sport drink for every three to four bottles of water. Don't wait to get thirsty. If you're thirsty, you're a quart low.**



## Safety Best Practice

### PREVENTING HANGAR RASH

Lt. Col. Alan Matson, DOV, MN Wing

Hangar guide lines are one of the best ways to prevent damage to aircraft when moving them in or out of a hangar. As long as all obstacles (i.e. chairs, other aircraft) are moved out of the path of the aircraft during aircraft movement, we can avoid wing tip and tail surface strikes simply by ensuring that the aircraft tires are rolling over the lines during movement. Once an aircraft is lined up, simply watching one of the main wheels rolling over the line will ensure adequate clearance. *Safety Note: The line is a guide, but aircraft clearance is still a responsibility of the aircraft movement person(s).*

The perpendicular termination line that you see in figure 1 marks the spot where you must stop the nose wheel prior to operating bi-fold hangar doors. This mark is located 35 feet from the opening of the hangar door. Figure 2 shows a bi-fold door in operation, and you can clearly see that contact with the aircraft rudder would be made if the aircraft was pushed too close to the door. *Safety Note: Door should be full open, but a marking to demonstrate full open is a best practice.*

The rear chock shown in figure 3 is fixed to the floor to prevent movement. This is another great way to prevent tail surface damage. Chocks that aren't positioned properly could allow the tail to strike objects in the hangar. Even a few inches of misalignment of these chocks would allow the tail to move several feet to either side.

Finally, if your squadron has obstacles in the taxi path then you need to ensure that taxi lines (figure 4) are painted to provide nose wheel alignment. Without these lines pilots are simply guessing where the nose wheel should be, which is an invitation for aircraft damage.

Take a look at your squadron's hangar facility. Even if it is shared with other aircraft, markings can be applied to provide guidance. Some squadron's have even provided markings for the movement of other aircraft in their shared hangar. Be proactive and prevent needless and wasteful hangar rash damage to our aircraft.



Figure 1



Figure 2



Figure 3



Figure 4