

# Scratching Post



**Summer Safety**



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## Words from the Skipper

CDR Steve Hnatt

VT-10 Commanding Officer



Greetings, Wildcats! This will be my last chance to speak to you via the Scratching Post. I would like to personally thank you all for conducting yourselves in a safe and professional manner during my time as Commanding Officer. I know you'll do the same for Commander Yates as he steps up from the XO role. We've gotten a lot of plaques for safety over the years that are directly attributable to the great decisions YOU GUYS make every single day.

2014 has started off with a bang for us. I can't tell you how proud I am of how each and every one of you has responded to our increased operational tempo. With planes and good weather, we have been executing our mission to safely train the best Naval Flight Officers in the world!

Of course, the real curveball in that equation so far in 2014 has been the weather. Between the ice storm, a hundred year flood, and what is likely to be a very active hurricane season, we need to be vigilant with both our pre-flight planning and our work on the ground. Make sure you've got a good inclement weather plan to keep both yourself and your family safe. Please keep the chain of command informed of any fallout from these events that will affect your ability to train. Don't be afraid to use the IMSAFE checklist if things aren't right. We want you at maximum readiness before you step into an airplane. **YOUR SAFETY AND THE SAFETY OF YOUR FAMILY ARE MY TOP PRIORITIES!**

Wildcats, it has been an honor and a privilege to serve as your Commanding Officer. Be safe and have a fantastic time this summer!

Skipper

## The XO Snarl

CDR Mark Yates

VT-10 Executive Officer



Hello, VT-10 Wildcats! I wanted to take this opportunity to thank you for starting off 2014 in a safe, professional, and efficient manner both in the cockpit and on the ground. The summer months will bring new challenges as we send detachments far and wide in support of midshipman training. We can expect our usual summer weather patterns that include thunderstorms, high temperatures, and high humidity. The T-39 sundown scheduled for August will keep demand for production high, but we must ensure that safety comes first.

Our real safety challenge isn't so much about flying as it is about our daily lives and ground activities.

The Pensacola area provides plenty of opportunities for outdoor recreation, and I strongly encourage everyone to get out there and blow off some steam. But, I also need you to take that extra few minutes to evaluate what you're doing to make sure that you are mitigating your risk. The Navy needs you to come back to work safe and healthy so you can get trained up and out to the Fleet.

We also need to ensure we show up physically prepared to go flying. With the summer heat, it's much easier to fall behind the hydration curve. Keep eating well, hydrating, getting enough sleep, and staying active. Flight school is enough of a challenge without adding fatigue as a factor. Proper physiating will both reduce your risk and enhance your performance in the airplane.

Have fun and be safe this summer!

XO

# Aviate, Navigate, Communicate, **PHYSIATE?**



LT Ron J. O. Burgundy  
VT-10 Class Advisor

## **HYDRATION** is not just about preventing muscle cramps and **FATIGUE** is not mitigated with sleep alone.

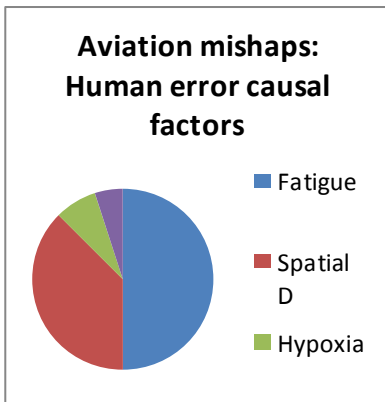
Imagine if you will: It's a hot and muggy day in the North Arabian Gulf. The outside air temp is 103 degrees, humidity is 100%. The ship's Safety Officer just took a temperature reading on the non-skid. It's 140 degrees Fahrenheit. You feel the heat radiating from the steel as you walk to your aircraft wearing 35 pounds of flight gear. You're already sweating, but you know you're only going to get hotter. You strap in, close the canopy, and promptly realize that you are sitting in a greenhouse. The engine is online but the air conditioning is bleed air driven. Flight deck safety mandates that your engines are at idle which means you start to cook. Your aircraft is also parked 20 feet behind a turning jet which only compounds your heat exhaustion and fatigue and feeds exhaust fumes into your bleed air intake. The OAT gauge now reads 150 degrees Fahrenheit. Thirty minutes pass by and you're finally taxiing up to the catapult. You've already drunk one liter of water but you feel exhausted and thirsty. Ten minutes after you launch, you find yourself suddenly awake and alert as your body (and mind) has cooled off. It's at that moment it dawns on you: you just shot off the bow of a ship at 150kts operating at 80% of your mental capacity. If you have any common sense this should strike you as less than optimal. Why this old sea story you ask? It's all about managing fatigue. One of the primary methods to manage fatigue for aviators is through proper hydration.

This article is going to take a closer look at hydration and its relevance for aviation personnel. We will also explore simple yet effective techniques for maintaining proper hydration in a field setting. But first, in an effort to substantiate the importance of proper hydration, all we'll need to do is look back historically among aviation mishap data to find our primary contributing factor. We'll soon discover the focus in preventing the majority of future mishaps is through minimizing human error.

Regarding FY 2013, the Naval Safety Center posted, "FY13 aviation mishap rate was the 4<sup>th</sup> best in history through this date and at this pace would end the year as the best ever." How is this possible? I believe it's because the men and women who have selected a career in and perform jobs that support Naval Aviation are top professionals among all other military and civilian populations. From the aircrew that fly to the personnel (air traffic control, aircraft maintenance, life support systems, operations, logistics, training, aviation medicine, etc.) that support flight operations, all play a vital role in aviation safety. Naval Aviation hasn't always had such a good safety record but over the last

several decades, tremendous progress in aircraft technology, better systems for monitoring and predicting weather, improved communications, and the establishment and implementation of Naval Aviation safety programs have helped achieve drastic reductions in mishap rates. In the year 1954, seven hundred and seventy-four aircraft were destroyed. In comparison, from 2002-2012, the annual aviation mishap average was fifteen. Safety research has revealed that it's not mechanical failure but "human error" that is the major causal factor in aviation mishaps. Reports show as much as 80% are due to human error. In 2010, a comprehensive review of 40 Class A mishaps between the years 2004 – 2009 revealed four major human related causal factors: **hypoxia** (n=3), **gravity-induced loss of consciousness, (g-loc)** (n=2), **spatial disorientation** (n=15), and **fatigue** (n=20).

Specific training to address these risks are required to be reviewed not only every 4 years at an Aviation Survival Training Center but also annually and often quarterly at the command level for all Navy and Marine Corps designated aircrew. However, despite the implementation of crew day and crew rest, quarterly safety stand-downs, annual and quadrennial refresher training, fatigue and dehydration are still one of the most prevalent human related causal factors among aviation mishaps and hazreps.



### So how do I stay hydrated? How do I know if I am?

Numerous studies regarding dehydration have alluded to various methods of measuring hydration. The reality is your average aviator can't weigh themselves or take blood samples to evaluate fluid and electrolyte levels on a regular interval. The simplest way to evaluate your own hydration is by the color of your urine. The old mantra I learned was "drink until you pee clear". But is that really accurate? New research has us looking for a "pale yellow color".

Pale yellow? What about clear, colorless urine as an indication for proper hydration? There are many online websites and other various sources claiming that clear urine is a good sign of being hydrated. Aqua4balance states, "A **hydrated** body produces clear, **colorless urine.**" **The fundamental problem with that statement is that there are a couple examples when your urine will appear clear but you can either already be dehydrated or in the process of becoming dehydrated and using clear urine as your assessment method could lead you to a false sense of confidence regarding your condition.**

**First, if you've consumed large quantities of water (several glasses) in a short period of time, the urinary system can get overloaded and the majority of the water passes through to the bladder before it can be absorbed by the tissues within the body. Thus, your urine will appear clear but the body did not have sufficient time for absorption to occur.**

**Second, the consumption of supplements, caffeinated beverages, alcohol, and even some medications can cause your body to rapidly excrete large amounts of fluid from the body leaving your urine clear in appearance but leaving your body in a grossly dehydrated state.**

Another way to realistically ensure adequate volume is by frequency. Urinating at least once every 2-3 hours during the day is a good indication of being adequately hydrated. Urinating more or less than previously stated can be a sure sign of a fluid imbalance.

One important aspect of hydration is that the body is not sensitive enough to warn us of fluid imbalances on such a micro scale. "Thirst is only perceived when a body weight deficit of 1-2% exists. This is why so many resources on the subject state that fluid consumption should be sufficient to avert the perception of thirst." Interestingly enough, one study found that when working in the heat, "people never voluntarily drink as much water as they sweat, usually drinking at a rate of only two-thirds of the water loss in sweat." Translation: Don't wait until you are thirsty to hydrate.

## SUMMARY & REVIEW

Q: Remember the 4 major human factors?

A: Hypoxia, G-loc, Spatial-D, and Fatigue

Q: What single physiological condition can increase your susceptibility to all of them?

A: Dehydration.

**Dehydration** is not only a major source of physical and psychological *fatigue* but since dehydration can inhibit oxygen delivery, *hypoxia*, through a reduction in blood volume, it can lower your Gz tolerance, *GLOC*, from a decrease in muscle fatigue resistance during repetitive anti-gravity straining maneuvers; and in some cases could lead to *Spatial Disorientation* as a result of slowed chemical reactions, decrements in the vestibular system, and short term memory impairment resulting in slower decision making, possible reduced situational awareness, and increased task saturation (often exhibited by student Naval Flight Officers). As highlighted in the general NATOPS, of all causes of fatigue, one of the most treatable is dehydration and early stages can lead to emotional alterations and impaired judgment. Ingestion of plain water throughout the day will reduce probability of dehydration and resultant fatigue.

Flying can be very physically and mentally demanding. From performing basic flight maneuvers, aerobatics, and flying in formation to scanning cockpit instruments, processing air-traffic control communications and making aviation related decisions, aircrew need to be in the highest level of physical readiness. To achieve this readiness, aircrew must make daily decisions that contribute to habit patterns which ensure proper sleep, nutrition, exercise and proper hydration.

Proper hydration requires planning and making consistent, conscience decisions throughout each day. Remember, don't wait until you're thirsty or performing activities or working in hot environments to start hydrating. Hydrate early and often. At the end of the day, proper hydration is a mindset. As a class advisor and instructor pilot, part of my job is to observe students. I've sat through many briefs and rarely do I see students hydrating. I can say with certainty that most student are carrying out their daily routine in a partially or fully dehydrated state. This trend needs to stop NOW. As a student, you need every advantage possible to achieve maximum performance. Additionally, you are training to be a professional fleet aviator. Good aviator habits begin NOW.



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# The Dangers of Stinging Marine Life

By Ensign Colin Mahoney

It's finally starting to warm up outside. With summer almost in full force, the beaches will surely be the choice location for surfers, fishermen, tourists, or anybody looking to kick back in the sun. Unfortunately, summer is also jellyfish season here on the Gulf Coast.

Traveling in swarms via the warm ocean currents, jellyfish can appear suddenly overnight and may stay for weeks at a time. Among the most commonly sighted jellyfish here on the gulf coast are the beach-ball sized Moon Jellies, whose individual stings will cause only a slight burning sensation followed by a half hour of itching. However, these jellyfish can be very dangerous when stung multiple times by a swarm. Moon jellyfish stings can cause extreme nausea, fever, and even hives depending the severity of the stings.



Moon jellyfish

The Gulf Coast is also home to the dreaded Portuguese Man O' War, whose tentacles can reach up to 50 feet in length. Although less common than the Moon Jellyfish, the Man O' War stings are much more painful and can cause shock and, in rare cases, death.



Portuguese Man O' War

If you happen to be stung by a jellyfish, DO NOT attempt to have your friend urinate on the affected area. Jellyfish leave tiny stingers behind that inject venom when triggered. Because of this, urine can often make the sting worse. Instead, use sand or a towel to remove the stingers, and then rinse the area with sea water (fresh water can also make the stings worse). Once thoroughly cleaned, soak the area in hot water and follow up with some hydrocortisone cream or an oral antihistamine to relieve the itching and burning.

You can avoid jellyfish and other harmful aquatic animals by taking note of the flags being flown outside of every major beach access. A light purple flag signifies that dangerous marine life is in the area and that swimmers should proceed with caution. Don't make the mistake of trying to surf or swim in these conditions, no matter how gnarly the waves may be.



Dangerous marine life flag



# **Safety - It's an all hands effort.**

*Assess* the risk

*Adapt* the plan to mitigate risk & continue to assess

*Attack* the mission once risks are acceptable

while continuing to assess and adapt