

# DECISIONS

Smart Choices. Good Strategies.

*Decisions* (ISSN 2167-2431 and 2167-244X) is published twice a year: Spring/Summer and Fall/Winter. *Decisions* is distributed to readers located at at shore-based installations, deployed with aircraft squadrons and carrier groups, as well as DoD agencies. *Decisions* is published by Commander, Naval Safety Center, at 375 A Street, Norfolk, VA 23511-4399. Periodical postage paid at Norfolk, VA.

<http://www.public.navy.mil/navsafecen/pages/media/decisions/index.aspx>

Summer 2012 / Fitness & Health

## Are You Hydrating the Right Way?

By MAJ Zachery Schneider, Naval Safety Center

At the end of the third day during a field training exercise in late spring, a Marine started having seizures. Earlier, company staff and a corpsman believed the Marine was a potential heat casualty and told him to drink water, which he did. He woke up in the middle of the night and notified the company corpsman that he wasn't feeling well. Within seconds of talking to the corpsmen, the Marine started having seizures. The Marine was evacuated by ambulance to a local emergency room where medical test showed the Marine had an extremely low sodium count.

Medical personnel diagnosed the Marine as having hyponatremia, also called acute water intoxication. Hyponatremia is generally the result of drinking excessive amounts of water, which causes a low concentration of sodium in the blood. Once considered to be a rare occurrence in outdoor training/sporting events, it is becoming more prevalent as participation increases and more novice exercisers are entering endurance events.

### Causes

During high-intensity training or exercise, sodium is lost along with sweat. A service member who only replaces the lost fluid with water will have a decreased blood-sodium concentration. As an example, consider a full glass of saltwater. If you dump out half of the contents of the glass (as is lost in sweat), and replace that with water only, the sodium concentration of the water in the glass is far less and the water is more diluted. This can occur in the bloodstream of a service member who only hydrates with water during excessive sweating.

Prolonged and excessive sweating increases the risk that a service member will alter the delicate balance of blood-sodium concentration. Because sodium is lost in sweat, it is important for those exercising at high intensities for long periods of time to replace any losses by consuming proper electrolyte replenishment. Adequate sodium balance is necessary for transmitting nerve impulses and proper muscle function, and even a slight depletion of this concentration can cause problems. Studies have shown that high intensity athletes can lose up to 2 grams of salt per liter of sweat. Replacing this during the event is critical to performance and safety.



A Superfrog Triathlon competitor is handed a cup of water by a Basic Underwater Demolition/SEAL (BUD/S) student during the biking portion of the competition. The 26th annual Naval Special Warfare Superfrog Triathlon was held along the Silver Strand (Highway 75) and on Naval Amphibious Base Coronado, Calif. Designed by Navy SEALs in 1978, the Superfrog is the first and longest running half-Ironman distance Triathlon. The course incorporates Half-Ironman distance circuit-style route consisted of a 1.2-mile open ocean swim, 54-mile bike ride and 13.1-mile run. Superfrog is open to individuals and relay teams. Teams must consist of military, DoD civilians, family members and sponsored guests. Photo by Photographer's Mate 1st Class Daniel Woods/USN

### Symptoms

Hyponatremia has symptoms similar to heat exhaustion and heat stroke and can easily be misdiagnosed. As sodium decreases in relation to water, water moves from the cardiovascular system into the intracellular space in the brain. This can result in cerebral edema followed by seizures, coma, and death. Symptoms of hyponatremia that differentiate it from heat exhaustion and heat stroke are decreased thirst, increased urine

Continued on page 3

# DECISIONS

Smart Choices. Good Strategies.

Decisions (ISSN 2167-2431 and 2167-244X) is published twice a year: Spring/Summer and Fall/Winter. Decisions is distributed to readers located at at shore-based installations, deployed with aircraft squadrons and carrier groups, as well as DoD agencies. Decisions is published by Commander, Naval Safety Center, at 375 A Street, Norfolk, VA 23511-4399. Periodical postage paid at Norfolk, VA. <http://www.public.navy.mil/navsafecen/pages/media/decisions/index.aspx>

## Summer 2012 / Fitness & Health

output and frequency of urination, clarity of urine, lack of poor skin turgor (tenting of the skin), and moist mucous membranes. Sufferers may become disoriented and confused, but will not have hot skin or a high core-body temperature. Hyponatremia often occurs after the strenuous activity has ceased, while heat exhaustion and heat stroke occur during the activity.

The early warning signs are often subtle and may be similar to dehydration and include nausea, muscle cramps and slurred speech. At this point, many service members drink more water because they think they are dehydrated. Unfortunately, water alone will increase the problem of hyponatremia. At the most extreme a service member may experience seizures, coma, or death.

### Prevention

Ideally, a service member should plan ahead and estimate his or her fluid loss and need for sodium replacement during the training event, and stay on a hydration schedule during the event. If symptoms develop, seek medical attention immediately. ▶

Maj. Schneider is a mishap investigator in the Shore/Ground Safety Programs Directorate.

Reviewed by HMC Christopher Harris, a medical analyst in the Submarine Division, Afloat Safety Programs Directorate, Naval Safety Center.



Photo by Mass Communication Specialist Maddelin Angebrand/USN

Above: Electronics Technician 2nd Class Brett Mclean, assigned to Maritime Expeditionary Command and Control (MAREXCMDCON) Division 24, sprints during the run portion of the Marine Corp. Combat Fitness Test. Left: Chief Personnel Specialist Romel Agliam, right, participates in the Marine Corps Combat Fitness Test in celebration of the 118th birthday of the Navy chief petty officer rank as U.S. Marine Corps Master Sgt. Arthur Avitia looks on at Camp Lemonnier, Djibouti.



Photo by Mass Communication Specialist Joseph C. Garza/USN



Read the article on "Heat and Exercise: Keeping cool in hot weather" in the June 2012-Issue 14 of *Safety Gram*, page 3.



# DECISIONS

Smart Choices. Good Strategies.

*Decisions* (ISSN 2167-2431 and 2167-244X) is published twice a year: Spring/Summer and Fall/Winter. *Decisions* is distributed to readers located at at shore-based installations, deployed with aircraft squadrons and carrier groups, as well as DoD agencies. *Decisions* is published by Commander, Naval Safety Center, at 375 A Street, Norfolk, VA 23511-4399. Periodical postage paid at Norfolk, VA.

<http://www.public.navy.mil/navsafecen/pages/media/decisions/index.aspx>

Summer 2012 / Water Safety

## Water Fun and Boating 101

Where Does Practice Stop and the Ocean Begin?



By CDR Paul Lanzilotta, VAW-126

Photo composite by John Williams/CNSC

**I**n my role as a commanding officer, I am an openly safety-conscious person. I know that my behavior will be looked on and judged by others. Judgment will be particularly harsh if my personal safety record is anything but impeccable.

We live in a time when resources are thin. There is not much “fat” on the bone within our ranks or among our war machines and their pieces and parts. Every member of my command is an important and critical piece of the Navy’s readiness; our mission success rides on keeping people in the game. If off-duty and recreational mishaps thin our ranks, our mission accomplishment and warfighting capability becomes diluted and potentially falters when negative trends develop.

I had all of this in mind when I bought my first powerboat and prepared to take it out on the Chesapeake Bay, Va., for its initial “sea trials.” I painstakingly briefed my crew (my wife and two young boys) on the safety systems and tools on the boat. We even conducted a couple of man-overboard drills. I felt good about all of this. To my wife of 15 years (who has been boating for twice that long), it seemed excessive for operating a 22-foot

center console fishing boat. But all that preparation and practice came in handy one fine day, within two weeks of purchasing my boat.

I don’t take chances when it comes to the weather. This particular day, the sky was blue, the seas were calm (less than two feet of chop or swell), and the wind was blowing on-shore. Every boater and his brother were out on the bay, or trying to get there.

As we sped toward the neighboring inlet and a chance to gently beach the boat and set the anchor near one of our favorite mucky mud flats, I could see that a dangerous and rough chop had set up in the inlet. The on-shore wind blew swiftly, but the current was ripping out of the river. This combination made the conditions very hazardous.

As I looked at the chop, I saw what I thought was a small fishing boat leaving the inlet for the bay. I focused more closely and realized it was a 15-17 foot flat-bottomed Jon boat. The chop was going to crush him. His bow lifted and dropped like a marionette in a dancing show. The gear in his boat began to spill out, and just like that he capsized.

Salty waves slung his gear in all directions. Lunch cooler to starboard, gas cans to port, trash everywhere. I

Continued on page 5.

# DECISIONS

Smart Choices. Good Strategies.

*Decisions* (ISSN 2167-2431 and 2167-244X) is published twice a year: Spring/Summer and Fall/Winter. *Decisions* is distributed to readers located at at shore-based installations, deployed with aircraft squadrons and carrier groups, as well as DoD agencies. *Decisions* is published by Commander, Naval Safety Center, at 375 A Street, Norfolk, VA 23511-4399. Periodical postage paid at Norfolk, VA.  
<http://www.public.navy.mil/navsafecen/pages/media/decisions/index.aspx>

## Summer 2012 / Water Safety

then spotted a woman and her dog. Everything previously in the boat was floating easily around the boat except the living beings that didn't have personal flotation device (PFD) on or anywhere near them. The two of them thrashed and beat the water in that desperate attempt to stay alive in the large waves.

Our trip had transitioned from pleasure cruise to a rescue mission. There were plenty of other boats passing left and right, but they appeared to be more concerned with letting the next guy stop to help. As we approached, I could see the panic in the eyes of the woman, who was struggling to stay afloat with her dog. My wife and I quickly discussed who was to do what, and I cautiously approached their vessel.

Within a couple of boat lengths, I slowed almost to a stop, turned the bow away from them and put the engine in neutral. My wife and older son went to the stern to help the woman into our boat. I soon noticed that my son had frozen at the sight of it all and wasn't able to help. We sent him up to the bow of our boat to wait and enlisted my younger son to lend a hand. The woman screamed to help her dog first. The pooch was old, arthritic and could barely stay afloat. My wife pulled the golden retriever to safety, followed shortly by the woman.

While all that was happening, I had been calling to the man who had been operating the Jon boat before it capsized. I called to him loudly several times, "Do you need assistance?" It took me a minute or two to realize that he was in shock and couldn't answer. I threw him a line and hailed another boat to help us set up for a tow back into the docking area. I noticed that he had a life vest on and had the pockets full of his gear, including his cell phone, all of it packed quite nicely. I wondered why he didn't think his friend or the arthritic elderly dog needed the same personal protective equipment?

We spent a few minutes coordinating with the second rescue boat and getting the Jon boat turned over and hooked up for a tow back to the dock. We started on our way into the inlet and to the city dock. We recounted what had happened. The woman we rescued was obviously very thankful. She had been most worried about her dog – her best friend who wouldn't have been able to swim for very long.

It turns out that the two people on the Jon boat were out for a spring picnic date on the water. They hadn't been dating very long, and I could tell that this woman was, rightfully, furious with the man who had taken her and her dog out into the bay unprepared. I can only guess how that relationship turned out.

I had learned some good lessons from all of this. First, preparation for an emergency at sea, regardless of how close to the shore a vessel may be, pays dividends a hundred times over. Had we not run our man-overboard drills and practiced the who-will-do-what part of our emergency plan, we would not have been able to act confidently and quickly.

Another lesson underscored is the importance of flotation for every living being on the boat, especially the dog that struggles to swim! As you prepare yourself for spending some time on the water, it helps to think about securing your cell phone, wallet, and other important items. Can you tie them into your PFD or keep them in a Ziploc bag inside a Velcro pocket? If they are secure, they might not end up on the bottom of the bay or the marina along

with your pasta salad should something unexpected occur.

Furthermore, I learned that in stressful situations sometimes people freeze up or initially are in shock at the pressure of the emergency. Quality training and preparation help to get the body and the mind moving in the right direction when the circumstances turn grave. Finally, practice! Be ready for the unexpected and act with care when you are called on to help someone or yourself.

I know all of this is Boating 101 as well as basic operational risk management in action, but it's a useful reminder that even on a seemingly beautiful spring day, Mother Nature has a trump card up her sleeve from time to time. The seas are a powerful force of nature.

Many look at a map of the Chesapeake Bay and see a sheltered body of water, mistakenly assessing the U.S. Route 13 bridge/tunnel plotted there as a barrier to the Atlantic Ocean. I look at that same map and see an enormous extension of the Atlantic with a 20-mile opening at the bay entrance. Be vigilant and plan for the weather as well as contingencies. ▀

.....  
 Cmdr. Lanzilotta is the commanding officer of VAW-126.



# DECISIONS

Smart Choices. Good Strategies.

*Decisions* (ISSN 2167-2431 and 2167-244X) is published twice a year: Spring/Summer and Fall/Winter. *Decisions* is distributed to readers located at at shore-based installations, deployed with aircraft squadrons and carrier groups, as well as DoD agencies. *Decisions* is published by Commander, Naval Safety Center, at 375 A Street, Norfolk, VA 23511-4399. Periodical postage paid at Norfolk, VA.  
<http://www.public.navy.mil/navsafecen/pages/media/decisions/index.aspx>

Summer 2012 / Storms and Military Operations

## Ordnancemen, Ordinary Men Lightning Doesn't Choose

By GYSGT Amber Allison, Naval Safety Center

The odds of being struck by lightning in an 80-year lifetime are 1 in 3,000. That is what the National Oceanic and Atmospheric Administration says. So no matter what you do for a living — if you live long enough — you will most likely encounter or see lightning strikes.

Lightning can kill or injure people directly or indirectly. It can cause significant amount of damage, if it doesn't kill you first. Naval Sea Systems Command (NAVSEA) and DoD have become proactive in protecting military service members who handle ordnance. In the NAVSEA OP 5, paragraphs 6-10 have been revised to increase the distance that a storm can approach before an ordnance operation must be terminated, from five miles to 10 miles.

This increased distance resulted from a change to DoD *Ammunition and Explosives Safety Standards* (DoD 6055.09-STD). However, on our safety surveys, we still find procedures and instructions that don't reflect the necessary changes. Ensure you change your documents to reflect Condition I at 10 miles.

According to the National Weather Service, if you can see lightning or hear thunder, there is a good chance you already are at risk for lightning strike. If the delay between seeing the lightning flash and hearing the bang of thunder is less than 30 seconds, it is wise to immediately seek a safer location.

If you happen to find yourself in any of these places, and you hear thunder, you need to find shelter within a building: high places and open fields, isolated trees, gazebos, open-sided picnic shelters, baseball dugouts, communication towers, flagpoles, light poles, bleachers (metal or wood), metal fences, convertibles, golf carts, water (ocean, lakes, swimming pools, rivers).

Once you have relocated to a suitable building, avoid using the telephone, television or computers. Don't hand-wash dishes or take a shower or bath. If you're driving,



Lightning strikes on the horizon, light up the bow of USS Abraham Lincoln (CVN 72) during a storm in the Arabian Sea. U.S. Navy photo by PH2 Aaron Ansarov

stay in your vehicle unless it is a soft-top, tactical vehicle such as a high mobility multipurpose wheeled vehicle (HMMWV). A fully enclosed vehicle offers reasonably good protection from lightning as long as you are not touching anything metal.

The National Oceanic and Atmospheric Administration website provides general information on lightning, indoor and outdoor lightning safety, and lightning risks: [www.nssl.noaa.gov/faq/faq\\_ltg.php](http://www.nssl.noaa.gov/faq/faq_ltg.php). ▀

.....  
 Gunnery Sgt. Allison is an explosives and weapons analyst in the Shore/Ground Safety Programs Directorate.