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# KNOWLEDGE

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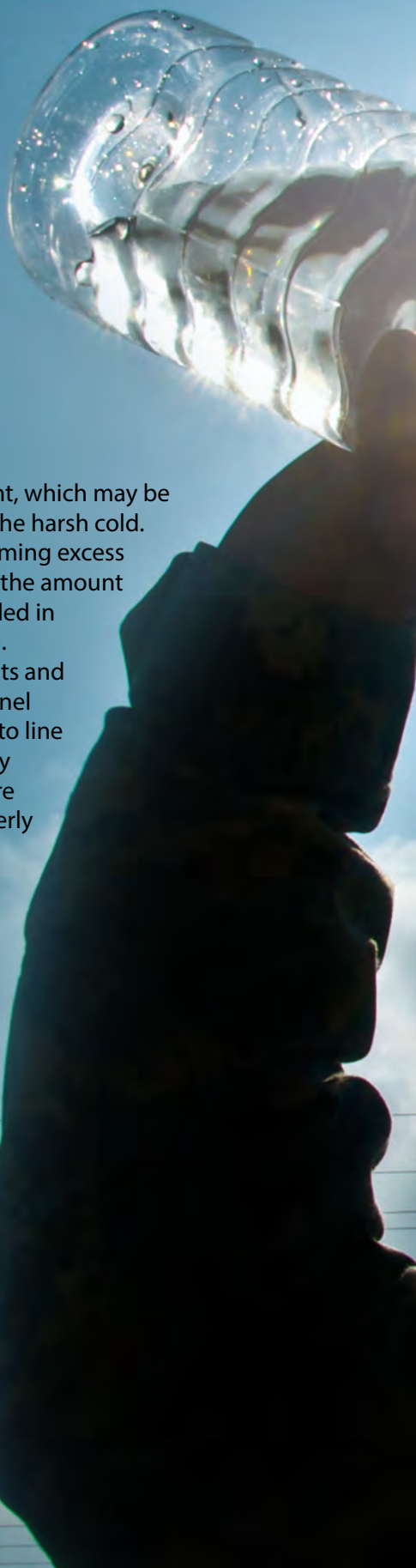
# DRINK for Your HEALTH

**1ST SGT. CHRISTOPHER BUSHWAY**
3-124th IO Battalion
Vermont Army National Guard
Northfield, Vermont



**Dehydration is a leading cause of injury for Soldiers. To keep them in the fight, it's essential they remain properly hydrated — even during the winter.**

The average adult loses 1.5 to 2 liters of water each day. Being in a cold-weather climate can add to this water loss through the increased excretion by the kidneys, perspiration and evaporation from the lungs (the breath you see on a cold day). To make matters worse, Soldiers may be less interested in drinking water during cold weather and, as a result, become dehydrated. This can lead to inadequate blood flow to the extremities, which can contribute to a Soldier developing a cold injury such as frostbite or trench foot.

According to the U.S. Army Research Institute of Environmental Medicine, Soldiers should take the following steps to maintain adequate hydration during cold-weather operations:

Soldiers must drink even when they are not thirsty. Leaders should establish a program of regularly scheduled hydration.

Soldiers should drink at least two to six canteens of water each day.

Cold suppresses thirst, so schedule drinking at regular intervals. Actual fluid requirements are dependent upon the level of physical work performed, the temperature and what Soldiers are wearing and carrying.

Eating snow or ice for moisture is inefficient, can irritate the lining of the mouth and may lower body temperature. It is better to melt snow or ice and purify it before consuming.

A cup of hot coffee or tea can be a welcome pick-me-up in the cold, but excessive caffeine consumption leads to difficulty sleeping, depending upon individual tolerances. Soldiers should be cautious to avoid sudden withdrawal from caffeine, however, as this can cause adverse symptoms such as severe headaches and nausea. Hot cocoa is generally a better beverage than coffee in the cold. Cocoa is warming, much lower in caffeine and high in needed carbohydrates.

Alcoholic beverages can give a false feeling of warmth and impair judgment, which may be detrimental in the harsh cold.

Avoid consuming excess salt (more than the amount normally provided in military rations).

First sergeants and support personnel bringing water to line units can usually tell if Soldiers are hydrating properly by their daily consumption. During winter, it's not unusual for Soldiers to drink a gallon of water or more each day when moving extended distances in mountainous terrain. Buddy teams must also be trained so Soldiers can encourage each other to drink plenty of water.

Soldiers must understand the importance of pushing fluids before, during and after exertion.

Staying hydrated in cold weather also takes more effort than in warmer temperatures because canteens sometimes freeze. To prevent this, Soldiers should carry at least one canteen in the front chest pocket of their Gore-Tex jacket to allow body heat to keep the water from freezing. Because water freezes from the top down, the canteen should be placed upside down in the pocket. The simple act of positioning the canteen properly will ensure there is at least a quart of water always available.

For Soldiers, working and training outdoors is part of the job — no matter how extreme the temperature. Enforcing proper hydration during cold weather is one of the easiest ways to ensure they stay healthy and arrive ready to fight. ■

**"SOLDIERS MUST DRINK EVEN WHEN THEY ARE NOT THIRSTY. LEADERS SHOULD ESTABLISH A PROGRAM OF REGULARLY SCHEDULED HYDRATION."**

## FYI

**The adequacy of fluid intake can also be judged by urine color and volume. Darkly colored urine — orange snow instead of light yellow snow — and not needing to urinate upon waking from a night's sleep are indicators of significant dehydration. Be aware, however, that this technique may not work for Soldiers who take vitamins, supplements or medications that discolor the urine.**

**Many pilots who have been overseas have experienced some noncombat-related close calls. The extreme temperatures, dusty conditions and less-than-ideal parking situations add up. Combining these factors with fatigue or complacency can create a recipe for disaster. This was the setting for one of my "closer" calls to damaging an aircraft.**

# UNFORESEEN HAZARDS

**CAPT. JEFFREY B. MEINDERS**
1st Battalion, 145th Aviation Regiment, 1st Aviation Brigade
Fort Rucker, Alabama

If a warning light comes on, a chip light flashes or a system fails completely, most of us can recognize the problem and execute the corrective emergency procedure. However, what about emergencies not covered in the checklist? Training Circular 3-04.11, Commander's Aircrew Training Program for Individual, Crew, and Collective Training, states: "A PC [pilot in command] is an aviator that has demonstrated the judgment and ability to perform all of the mission requirements for the assigned aircraft, uses proper procedures and operates the aircraft safely and maturely." This means being ready for anything that comes along and quickly understanding the effects. Here's my story.

I was returning from a night mission flying an AH-64D in eastern Afghanistan, and the sun had just come up as we taxied into parking at Forward Operating Base Salerno. As I turned to line up in the drive-through parking setup, my canopy cover flew into the air. These canopy covers are 8- by 12-foot heavy-duty pieces of canvas with straps hanging off them in all directions. It was supposed to have been locked away in the flyaway box located on the parking pad.

**"MY MIND STARTED SPINNING WITH OPTIONS AND POSSIBLE CONSEQUENCES."**

My mind started spinning with options and possible consequences. Do I continue forward and hope the cover passes behind me or do I pull the engines off and bring the rotor brake to lock? I thought if I could reduce the induced flow, I could stop the canopy from being sucked in or whipped back through the tail rotor. I didn't even want to imagine what could happen to the crew chief on the wing cord on the opposite side of the parking pad if the straps came toward him.

Nothing in the checklist even remotely covered this type event. The pilot in the front seat was also fixated on the cover flying over us, wondering why the locked box where the cover was stored was even open. I knew this was a dangerous situation and time was not on our side. I reduced the collective and applied the brakes, as the cover was about 20 feet above and five feet in front of my rotor. The cover stayed aloft in the upward flow of air created by the ground effect and floated over to the next parking pad. We landed safely and I was more than relieved nobody was hurt.

**What happened?**

The crew chief that launched the aircraft had gone back to the flyaway gearbox and left the cover out for unknown reasons. Whether the crew chief had been sidetracked, re-tasked or an emergency came up, he forgot to close or lock the box, which definitely caused an eye-opening experience for the crew that morning. We saw how easily a dangerous situation materializes by someone's distraction. This could've been a catastrophic accident, damaging the main and tail rotors, requiring the whole driveline to be replaced and, most importantly, injuring or killing all personnel within 50 feet of the aircraft.

**Lessons learned**

Remaining alert while on a long deployment can be stressful, and that is why supervision and teamwork are so crucial to the Army's mission. Not every accident can be predicted, and simply avoiding risks is not safe. That's why we rely on inherent training to know what to do when we have an emergency.

The training PC candidates go through plays a major part in the thought process and actions taken during non-standard emergencies. My unit instructor pilots focused on airworthiness and how to keep the aircraft flying. Challenge pilots. Use what-if questions to lead pilots into unfamiliar territory, bringing them outside their comfort zone and into discovery mode. In the long term, challenging pilots increases the safety success of your organization. ■

# Preventing Fires in the Workplace

**WORKPLACE SAFETY DIVISION**
U.S. Army Combat Readiness Center
Fort Rucker, Alabama

**The observation of Fire Prevention Week, October 8 through 14, provides an opportune time to emphasize the importance of people knowing how to protect themselves and their co-workers should a fire happen. According to the Occupational Safety and Health Administration, workplace fires and explosions kill about 200 workers each year and injure nearly 5,000. In many of these workplace fires, inadequate fire extinguishing systems and locked fire exits contributed to the losses. To prevent those losses, it's important to take a closer look at inspections, exits, fire extinguishers and training.**

## Inspections

When inspecting workplaces, as a minimum, be sure to check for the following:

- Ensure extension cords are not being used in place of permanent wiring. If additional receptacles are needed to power appliances and equipment, have a certified electrician install them.
- Do not run power cords for appliances and equipment under carpeting. Over time, the protective insulation can be worn or frayed, resulting in bare electrical conductors arcing and starting a fire.
- Ensure flammable materials are properly stored either outside the workplace or in an approved fireproof storage cabinet.

• Permit smoking only in designated smoking areas and ensure noncombustible receptacles are available.

• Do not store combustible items near electrical appliances or equipment. Also, keep the area around this equipment clear to ensure proper ventilation and cooling.

• Check electrical appliances and equipment for the Underwriter's Laboratory (UL) label before purchasing them.

## Exits

• Ensure you check fire exits when doing workplace inspections. Consider the following as you develop your checklist:

• Ensure your facility has a sufficient number of exits. Each workplace should have at least two separate means of escape.

• Inspect emergency lighting to ensure it properly illuminates the paths to exits.

• Check the exit routes from your building to be sure they are properly marked as exits and are free and clear of obstructions.

• Be sure to keep doors marked as fire exits unlocked at all times while employees are in the building.

## Firefighting equipment

Fire extinguishers are an important part of your fire prevention program. When used properly, they can save lives and property by putting out small fires or controlling them until the professionals arrive. In addition, fixed systems can enhance fire safety within a facility by detecting fires, sounding an alarm and releasing a fire suppressant.

Ensure your workplace has enough fire extinguishers and they are the proper type for the fire hazards present. The types and uses of fire extinguishers are listed below:

• **Type A:** Use for ordinary combustibles such as paper and wood.

• **Type B:** Use for flammable liquids such as grease, solvents and gasoline.

• **Type C:** Use for electrical fires involving equipment such as fuse panels, computers and other energized equipment.

• **Type D:** Use for combustible metals such as magnesium, titanium and potassium.

• **Type K:** Use for kitchen fires involving combustible cooking liquids and fats.

Conduct monthly visual inspections of fire extinguishers for proper marking, maintenance and serviceability. During your inspection, be sure there are no obstructions blocking access to the extinguishers.

If your workplace is equipped with a fire suppression system, be sure it is inspected and properly maintained.

## Employee training

Workers need to know how to properly use fire extinguishers and should be taught, as a minimum, the following:

• Sound the fire alarm and notify the fire department.

• Before approaching a fire, identify a safe evacuation path and ensure nothing obstructs it.

• Use the appropriate extinguisher for the type of fire encountered.

• Discharge the extinguisher within its effective range using the **PASS** (**P**ull, **A**im, **S**queeze, **S**weep) technique (see info box above).

## CAN YOU P.A.S.S. THIS TEST?

Do you know what to do if you have to fight a fire with an extinguisher? If not, familiarize yourself with the simple P.A.S.S. technique described below:

• **Pull** the pin. This will also break the tamper seal.

• **Aim** low, pointing the extinguisher's nozzle, horn or hose at the base of the fire.

• **Squeeze** the handle so it will release the extinguishing agent.

• **Sweep** from side to side at the base of the fire until the extinguisher is empty and the fire is out.

• Move away from an extinguished fire just in case it flares up again.

• If the fire extinguisher has been fully discharged and the fire is not out, evacuate the workplace immediately. Be sure workers also understand they are to evacuate immediately if the fire progresses beyond their ability to control it.

For more information on preventing workplace fires, visit the Occupational Safety and Health Administration website at http://www.OSHA.gov. ■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