



The Safety Corner

From the Marine Corps Center for Lessons Learned January 31, 2008



Cold Weather

This issue of the Safety Corner highlights cold weather safety.

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From the Director: Whether you are in Iraq, Afghanistan, Camp Fuji, Bridgeport, or stranded in a car, operations in cold weather for Marines and Sailors can be life threatening. Prolonged exposure to freezing or cold temperatures may cause serious health problems such as trench foot, frostbite and hypothermia. Cold related illnesses and injuries such as hypothermia and frostbite are serious on their own, but they can also increase the risk of other types of mishaps.

The mildest form of hypothermia causes the loss of coordination and can impair your judgment, while frostbite causes a loss in dexterity in the hands and feet, and serious discomfort; and both can affect your ability to work safely. Wind and moisture have the greatest impact on your body's ability to regulate temperature, with your physical attributes determining your susceptibility to hypothermia; older Marines and Sailors are at greater risk than young Marines and Sailors; thin Marines and Sailors are at risk more than stout Marines and Sailors; and men more than women.

The best way to help prevent hypothermia and frostbite is to keep your body and extremities warm, wear layered clothing, eat well-balanced meals, drink warm non-alcoholic, and caffeine-free liquids. Hypothermia can occur in mild as well as severe weather; remember what your mother used to say, "Boy, put on a hat. It is cold out there".

You are welcome to pass on and post this newsletter for widest dissemination. Log on the www.mccll.usmc.mil to download previous editions of the Marine Corps Center for Lessons Learned Safety Corner as well as our Monthly Newsletters. I look forward to your comments and feedback so we can raise awareness, reduce risk and maintain a high level of readiness.

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Burr... It's Cold Out There

Typical Victim of a Cold Weather Injury

- > Male
- > E-4 or below
- > Approximately 20 years old
- > From a warm climate
- > Less than 18 months time in service
- > Uses tobacco, alcohol or medications
- > Neglects proper foot care

Where is the coldest recorded spot on earth? Vostok, Antarctica; in 1983, this research station set the world record for coldest temperature, -128.6 degrees Fahrenheit. While it is highly unlikely you will ever work under conditions like this, patrolling or standing guard in the cold for any length of time can make your body begin to feel as if it were in Antarctica.

A cold environment pulls heat from the body and forces it to work harder to maintain its temperature. If you are not properly prepared for these conditions, the cold can lead to hypothermia, frostbite, trench foot, or cause asthma and

arthritis to flare up. The effects of decreased dexterity, mental skills and coordination, among others, can make accidents or injuries much more likely.

What is Hypothermia?

Hypothermia which means "low heat", is a potentially serious health condition. This occurs when body heat is lost faster than it can be replaced.

Hypothermia is a dangerous and complex medical problem that can be fatal if untreated. It can occur both indoors and outdoors if temperatures are too cold and the body loses more heat than it produces. Hypothermia refers to a significant drop in the normal body temperature. At low environmental temperatures, the body is unable to maintain its warmth without assistance. If not rapidly detected and treated properly, illness, injury or death can occur. **(continued)**

The observations and recommendations contained in The Marine Corps Center for Lessons Learned (MCCLL) Safety Corner represent the considered judgment of Marines who have identified safety issues in their units. The purpose of this newsletter is to apprise other Marines of these safety recommendations and to encourage them to enter their own lessons into the Marine Corps Lessons Management System (LMS).



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Burr... it's Cold Out There (continued)

What is Frostbite?

Frostbite occurs when the skin actually freezes and loses water. In severe cases, amputation of the frostbitten area may be required. While frostbite usually occurs when the temperatures are below 30°, wind chill factors can allow frostbite to occur in above freezing temperatures. Frostbite typically affects the extremities, particularly the feet and hands. The affected body part will be cold, tingling, stinging or aching followed by numbness. Skin color turns red, then purple, then white, and is cold to the touch. There may be blisters in severe cases.

What to Look For

The extent of frostbite is difficult to judge until hours after thawing. There are two classifications of frostbite:

Superficial frostbite is characterized by white, waxy or grayish-yellow patches on the affected areas. The skin feels cold and numb. The skin surface feels stiff and underlying tissue feels soft when depressed.

Deep frostbite is characterized by waxy and pale skin. The affected parts feel cold, hard, and solid and cannot be depressed. Large blisters may appear after re-warming.

Hypothermia Symptoms	Signs that can be observed by others	Signs that can be felt or noticed by victim	Victim needs IMMEDIATE help if the following are present:
Severe hypothermia may cause rigid muscles, dark and puffy skin, and unconsciousness.	Slowing of pace, drowsiness, fatigue, stumbling, thickness of speech, amnesia, irrationality, poor judgment, hallucinations, loss of perceptual contact with environment, blueness of skin (cyanosis), dilation (enlargement) of pupils, decreased heart and respiration rate, stupor	Fatigue, drowsiness, exhaustion, unwillingness to go on, feeling of deep cold or numbness, poor coordination, stumbling	Poor articulation of words, disorientation, decrease in shivering followed by rigidity of muscles, cyanosis (blueness of skin), slowness of pulse, irregular or weak pulse

Treatment of Hypothermia

Treatment of hypothermia starts in the field and continues during transportation to a medical facility. To help a Marine or Sailor with hypothermia, remove all cold, wet clothing and replace it with warm, dry clothing to prevent further heat loss. If they are not breathing, or do not have a pulse, begin cardiopulmonary resuscitation (CPR) until emergency medical personnel arrive. If the Marine or Sailor is not alert or is unconscious, take care to immobilize the neck when moving. Moving a patient with a fractured neck can result in permanent nerve damage or paralysis. Avoid rapid re-warming with hot water or massaging cold extremities. If done improperly, it could lead to serious tissue damage.

Treatment of Frostbite

Be prepared for a vehicle breakdown. Keep extra clothing, gloves and blankets, as well as normal vehicle emergency supplies on hand.

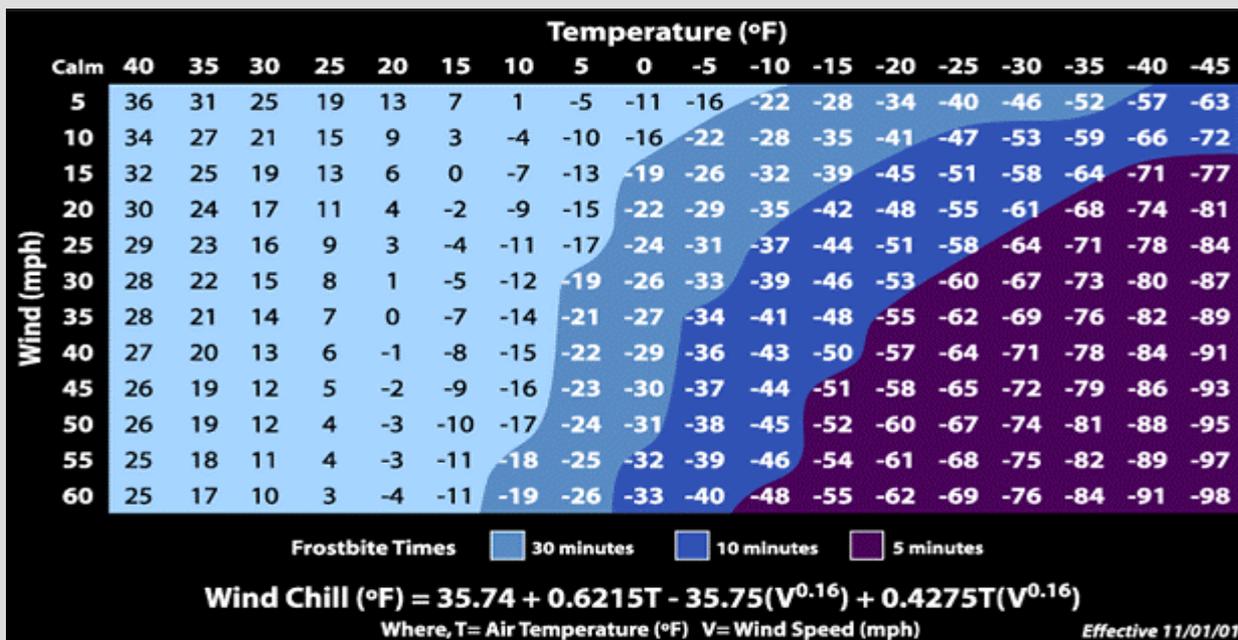
If a Marine or Sailor is suffering from hypothermia and frostbite, the hypothermia should be treated first; if the body shell is re-warmed before the body core, blood can pool in the extremities, possibly causing cardiac arrest. If you are close to a medical facility, do not attempt re-warming. You can prevent further heat loss by replacing any wet clothing with dry clothing. If medical help is more than 2 hours away, re-warm the body part in warm water (104-108°F). Great effort must be taken to prevent refreezing after re-warming, because refreezing results in almost certain tissue death. Do not massage the affected area and do not expose the tissue to excessive heat. Either can result in increased tissue damage.

Do's:	Don'ts:
If you suspect hypothermia, or frostbite, keep calm and immediately seek medical attention.	Do not massage tissue that you think might be frostbitten as it can cause greater injury to the affected tissues.
Handle the person very gently, protect them with blankets and quilts to keep them warm.	Do not put heat of any kind on the feet or body of the person.
Make sure that you cover the head, neck and extremities.	Do not put them in a hot bath or shower, be careful not to rub any part of the person's body.
If possible, raise the inside temperature.	Do not give them any alcohol or drugs.



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What is Windchill Temperature?

The windchill temperature is a measure of how cold people and animals feel when outside. Windchill is based on the rate of heat loss from exposed skin caused by wind and cold. As the wind increases, it draws heat from the body, driving down skin temperature and eventually the internal body temperature. Therefore, the wind makes it feel much colder. If the temperature is 0 degrees Fahrenheit and the wind is blowing at 15 mph, the windchill is -19 degrees Fahrenheit. At this windchill temperature, exposed skin can freeze in 30 minutes.

Winter Weather Preparedness Tips

Source: Department of Health and Human Services

Every winter people die from exposure to the cold, carbon monoxide poisoning, traffic accidents in ice and snow, and heart attacks when shoveling snow. Remember, the key to surviving a winter storm is to **BE PREPARED AHEAD OF TIME**. Once the weather hits, consider these safety tips:

When indoors

- Keep space heaters away from walls, furniture, and curtains.
- Drink non-alcoholic beverages like tea, coffee, hot chocolate and soup.
- Prescription drugs may increase vulnerability to cold. Check with your doctor or pharmacist before taking them.
- If you suspect a problem with your heater, have it checked immediately.
- Keep your carbon monoxide detector in working order.
- Offer assistance to elderly and disabled people living alone. Make sure they are prepared for winter conditions.
- Listen to weather reports for continuous updates on the weather situation.

When venturing outdoors

- Wear loose-fitting, light-weight, warm/dry clothing in several layers.
- Wear a hat.
- Cover your mouth to protect your lungs from extreme cold.
- Wear mittens. (They are warmer than gloves.)
- As protection against frostbite, cover any exposed skin surfaces.

For yourself, you can

- Maintain good nutrition and get plenty of rest.

Prepare Your Home

- Insulate any water lines that run along exterior walls so your water supply will be less likely to freeze.



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Winter Weather Preparedness Tips (continued)

- To the extent possible, weatherproof your home by adding weather-stripping, insulation, insulated doors and storm windows, or thermal-pane windows.
- If you have pets, bring them indoors. If you cannot bring them inside, provide adequate shelter to keep them warm and make sure that they have access to unfrozen water.
- If you plan to use a fireplace or wood stove for emergency heating, have your chimney or flue inspected each year.
- Have your furnace and wall heaters checked by a professional for safety.
- Check all space heaters and keep them away from walls, curtains, and furniture.
- If you have a gas heater or any gas appliances, invest in a carbon monoxide detector. (Carbon monoxide kills about 300 people in the U.S. every year.)
- Replace the batteries in all of your smoke detectors and test the smoke alarms to make sure they work.
- Check the batteries in your radio.

Shoveling Snow

- Remember that it is extremely hard work.
- Do not shovel snow unless you're in good physical condition.

But if you have to shovel snow,

- Rest frequently and pace yourself.
- Use a proper snow shovel.
- Lift with your leg muscles, not your back.
- If you experience chest or arm pain, stop immediately and go indoors. Overexertion can cause sore muscles, falls on slippery surfaces, and heart attacks in people of all ages.

Communication

- Have at least one battery-powered radio (for listening to local emergency instructions) and extra batteries in case there is a power failure.
- Find out how your community warns the public about severe weather: Siren, Radio, TV.
- Listen to emergency broadcasts.

Food and Safety

- Have a week's worth of food and safety supplies. If you live far from other people, have more supplies on hand.
- Drinking water.
- Canned/no-cook food (bread, crackers, dried fruits).
- Non-electric can opener.
- Never use charcoal grills or portable gas camp stoves indoors; the fumes are deadly.
- Baby food and formula (if baby is in the household).
- Prescription drugs and other medicine.
- First-aid kit.
- Rock-salt to melt ice on walkways.
- Supply of cat litter or bag of sand to add traction on walkways.
- Flashlight and extra batteries.
- Battery-powered lamps or lanterns (To prevent the risk of fire, avoid using candles).

Generators

- Never use an electric generator indoors, inside the garage, or near the air intake of your home because of the risk of carbon monoxide poisoning:
- Do not use the generator or appliances if they are wet.
- Do not store gasoline indoors where the fumes could ignite.
- Use individual heavy-duty, outdoor-rated cords to plug in other appliances.

Know What Winter Storm Warning Terms Mean

Winter Weather Advisory: Expect winter weather conditions to cause inconvenience and hazards.

Frost/freeze Warning: Expect below-freezing temperatures.

Winter Storm Watch: Be alert; a storm is likely.

Winter Storm Warning: Take action; the storm is in or entering the area.

Blizzard Warning: Seek refuge immediately! Snow and strong winds, near-zero visibility, deep snow drifts, and life-threatening wind chill.



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Chance takers
are accident makers.
Author Unknown

Fatality Summary as of January 08

