

# The Safety Corner

From the Marine Corps Center for Lessons Learned

August 2010

**This Issue Highlights "Exercise Program Safety"**



## MARINE CORPS CENTER FOR LESSONS LEARNED

**STRENGTH  
THROUGH  
EXPERIENCE**



AUGUST 2010

# Marine Corps Center for Lessons Learned Safety Corner

<b>Inside this issue:</b>		<b>Bad Shoes/Running Can Equal Painful Problems</b>	<b>5</b>
Heating Up	1-2	Running And Your Knees, Preventing Injuries	6
Prevention of Running Injuries	3	Marine Corps FY10 Fatalities	7
Sports Injury Prevention Guide	3-5	Fatality Summary	8



**Physical Conditioning: "Heating Up"** The physical conditioning of Marines deploying to Afghanistan is a major area of emphasis, since they need to be ready to perform in temperatures rising to well over 100 degrees, with dismounted patrols routinely being conducted with a full complement of personal protective equipment over rough terrain. However, exercising and physical conditioning in the heat must be done with caution as noted in this article from the Naval Safety Center's *Approach Magazine, May/June edition*:

The body can only function well and survive within a very narrow range of temperatures. This becomes a problem when we have to exercise or perform heavy manual labor, since the muscular activity and work done produce heat as a by-product. Just as a car engine straining to climb a grade can overheat, boil its radiator and seize up, humans figuratively can do the same.

Most cars dissipate heat by drawing cooler air over the radiator coils (convective heat loss) and to a much lesser extent by radiating heat (radiant heat loss) to the surrounding environment. "Radiators" should really be called "convectors" because that's primarily how they act. We'll call our heat loss mechanisms "heat exchangers."

Our heat exchangers, which dissipate excess body heat, are much more sophisticated than your car's. The lungs, bare skin, and sweat glands dissipate heat. Air drawn into the lungs is heated to body temperature and saturated with water vapor, both of which cool the air passages and lungs while the heated humidified air is exhaled (convection, followed by evaporation). Your dog has figured this out, which is why he pants with his wet tongue hanging out on a hot day.

Sweat will evaporate from the skin as long as the humidity and ambient temperature are low enough, which is why you stand sweating in front of that fan in the gym after your workout. This is the chief method of heat exchange during exercise. But guess what? If the air temperature is 98.6 F, and the humidity is 100 percent, you've now lost all ability to lose heat by convection and evaporation.

You'll notice that convection combined with evaporation depends on having plenty of water available, which is why hydration is so important when exercising in hot conditions. Because these are the primary heat exchangers in exercise, lots of water is required. Thirst may not be a reliable indicator of fluid need. That's why monitoring the urine color is a better indicator; a pale color is best.

**(continued)**

LOG IN TODAY. SHARE YOUR EXPERIENCES , LEARN FROM OTHERS  
NIPRNET <https://www.mccll.usmc.mil>  
SIPRNET <http://www.mccll.usmc.smil.mil>

[Subscribe to MCCLL Products](#)

Please add MCCLL Safety Corner to your list of trusted addresses.

**MCCLL website access is limited to Department of Defense CAC card holders**

Director, MCCLL: Christopher H. Sonntag  
Operations Officer: Mark Silvia  
Editor: William Richardson

[Do you have a safety story you'd like to share? We'd like to hear about it and inspire others.](#)

As long as the surrounding temperature is less than 98.6 F, the skin successfully can radiate heat. When you are in a room temperature environment and not exercising, you are experiencing the prime method of heat exchange. While standing in the sun, you're absorbing radiant heat. You're now gaining additional heat. Conductive heat loss is possible by exposing the skin to cold surfaces. Jumping in a cold pool on a hot day causes heat loss by conduction.

Cold objects applied to the skin, such as putting ice packs under the armpits and on the groin area, do the same thing. In cold water, hypothermia can develop rapidly because of the excellent heat-conducting properties of water (about 25 times greater than air).

Even with normal exercise, the body core temperature can rise a couple of degrees. We typically react by panting, sweating, and standing in front of a fan or air conditioner to cool off. When we speak of heat acclimatization, we're talking about the body getting as efficient as it can at employing these different heat exchangers. All our heat exchangers can max out when conditions of high work load combine with elevated environmental temperatures and high humidity. Relative dehydration and loss of electrolytes such as salt also can occur when working in hot climates over several days. Many health conditions (obesity, deconditioning), alcohol, hangovers, and medications (antihistamines, blood pressure medications) adversely affect our heat exchangers, making us more susceptible to heat injury. Exercising in sweat suits or heavy clothing to lose weight only results in increased dehydration and risk of heat injury.

That strange gadget, called the wet bulb globe temperature (WBGT) meter, is designed to measure the environment to see if the heat exchangers of the body can liberate enough heat during exercise. Once the WBGT gets high enough, the dreaded black flag is raised, indicating the environment can't accept the heat humans generate when exercising. It's not a motivation or a "gut it out" sort of thing, it's just plain physics. These evaporative, convective, radiative and conductive heat-exchanging mechanisms just can't keep pace with the heat generated, and body temperatures start to rise. When you exercise in black-flag conditions, you start to cook.

Heat cramps occur as fluid and electrolytes are lost from the body in hot climates while exerting the muscles. Extremity and abdominal muscles can become irritable and may go into spasm and fail to relax after contraction, causing painful cramps. Hydration, rest, cooling, and stopping the exercise typically relieve heat cramps, but it may take two-to-three days to restore body fluid and electrolyte equilibrium. Heat cramps may not occur first, so they are unreliable as a warning sign. Most animals will sensibly stop at this point, but horses and humans can be motivated to press on. Heat exhaustion occurs as the process continues, and the core temperature rises. The brain realizes it's starting to cook, and marshals all the body resources to get rid of the excess heat. Respiration increases and panting ensues. The heart circulates blood faster, veins and arteries dilate, and fluids are shifted from the blood into the sweat glands and membranes of the airways. The skin may be clammy, moist and pale. Nausea, vomiting and diarrhea may follow. If exercise is not stopped and hydration isn't given, heat exhaustion can progress to heat stroke.

Heat stroke signals the final phase, and begins when the brain loses its ability to regulate the body's heat exchangers. Absence of sweating and mental-status changes are key features. The individual is confused, delirious or even comatose, and can no longer assess the dire situation and react appropriately. The core temperature may be above 105 F and spiraling higher. From a combination of excessive temperature, dehydration, and metabolic byproducts, the regulatory circuits fail. As water is lost from the blood and tissues, the blood thickens and tissues become severely dehydrated. Blood is shunted away from other vital organs such as the kidney and digestive organs in the gut. Kidney failure may begin as these high-energy organs starve for blood. Muscles may break down, showering the kidneys with muscle proteins, and plugging the kidneys (rhabdomyolysis). The skin may be hot and pale.

This condition is a true medical emergency, and rapid cooling and IV hydration are required to save life. Immediately get the individual in the shade, spray with cold water, fan air over the body and apply ice. The neck, armpits and groin typically are chosen first because large arteries and veins cross these areas that are directly cooled by the ice. Don't forget to call 911.

Bottom line, heat injuries may occur during physical training (PT) any hot weather operation or activity, when you are not properly hydrated and/or acclimatized, exposed to extreme heat, or in a Mission-Orientated Protective Posture.

[Click here to learn more about heat injuries and conditions.](#)

## Heat Condition Flag Warning

Source: [Marine Corps Order 6200.1E](#)

### GREEN

A green flag condition is for web bulb globe temperature (WBGT) readings between 80 and 84.9 degrees Fahrenheit. Heavy exercises for non-acclimated personnel will be conducted with caution and under constant supervision.

### YELLOW

A yellow flag is for WBGT readings between 85 and 87.9 degrees Fahrenheit. Strenuous exercises or physical labor will be curtailed for non-acclimated, newly assigned Marines and civilian Marines for the first three weeks aboard the base. Outdoor classes or working directly in the sun should be avoided.

[\(continued\)](#)

## Heat Condition Flag Warning (continued)

### RED

A red flag indicates WBGT readings between 88 and 89.9 degrees Fahrenheit. All physical training and strenuous outdoor activities are to be curtailed for at least the first three weeks for newly-assigned Marines and new civilian Marines. Regular activities should be limited to six hours per day for new personnel.

### BLACK

Under black flag conditions, which are for WBGT readings 90 degrees Fahrenheit or higher, all nonessential physical activity will be halted. Essential activities are activities associated with scheduled exercises or critical production work and maintenance where the disruption would cause undue burden on personnel or resources, would be extensive, or would significantly reduce a unit's readiness.

## Preventing Running Injuries

Source: [Installation Management Command Europe](#)

### Physical Conditioning: Establishing a Running Program:

The safety considerations involved in establishing a running program as part of your physical conditioning regimen are discussed in an article by the Manager of Injury Prevention Physical Fitness Programs, Navy Environmental Health Center. They are:

#### Personal Fitness:

- ◆ Prior to running, participate in a gradual conditioning program with emphasis on balancing out the strength of musculature (correct muscle imbalance). A program consisting of muscular fitness, gradual aerobic conditioning (see training / technique section) and stretching pre/post running is beneficial.
- ◆ To reduce risk of stress fractures, a slow and progressive training program that gradually increases strength and endurance of the back and lower extremities is recommended.
- ◆ Remember to warm-up and stretch at least 5 to 10 minutes before running.
- ◆ Contact a local MCCS Trainer for additional information on running conditioning and correct running form. Many MCCS facilities provide safety/injury prevention information regarding preparation, conditioning and training in proper running techniques; imperfections in running style can lead to injury.

#### Equipment:

- ◆ Proper fitting running shoes are important; replace shoes every 6 months.
- ◆ Orthotics may be beneficial for runners with excessive pronation (turning outward of the foot at the ankle).

#### Training/Technique:

- ◆ Correct training errors. Training should be gradually increased. For beginning runners, alternate day running is recommended. The runner should be able to talk without being short of breath. Monitor both the intensity and the duration of workouts. Excessive distances, hill running and speed work may cause common overuse injuries such as iliotibial band friction syndrome and shin splints. A general guideline is to increase running mileage by 10% per week. Monitor the number of days of high intensity workouts and the increase in the training programs. Alternate high effort days with low intensity days of running.



#### Did You Know?

Running related, lower-extremity injuries across all military branches amount to annual costs of \$100,000,000.

Source: [Military Running](#)

## SPORTS INJURY PREVENTION GUIDE



Source: [Army National Guard/Army Reserve 2010](#)

### Warm Up/Cool Down Stretches

Perform stretches before and after sports activities to increase your flexibility, reduce muscle tension and soreness and significantly lower your chances of injury. Here are a few tips:

- ◆ Stretch till you feel mild tension - not pain, and hold for 10 seconds. The tense feeling should decrease or stay the same.
- ◆ Do not bounce. Stretching should be static.
- ◆ To get blood going, jog about 1/4 mile before beginning your warm-up.
- ◆ Try these 5 [warm-up/cool-down stretches](#).

Upon injury, treat as directed in the table below. Resume sports activity only when full range of motion is achieved.

(continued)

## Sport Injury Prevention Guide (continued)

Injury	Symptoms	Prevention	Treatment
<b>Ankle Injury</b>	Pain, swelling, loss of motion, pain during walking resulting from landing on outside of foot and stretching ligaments.	Periodically move ankle up and down to prevent stiffness and blood clotting.	Ice - 20 min. on, 20 min. off, 3X/day until swelling subsides. Apply ace bandage from toes to upper calf, leaving no openings. Elevation - lie flat with foot on a pillow about 18" off the ground. If pain persists for more than 3 days, call doctor. Use of crutches, cane, or walking within pain tolerance.
<b>Heel Bruise</b>	Pain and swelling from a direct blow or repetitive training involving pressure or trauma to the heel.	Proper footwear with protective padding.	Ice - 20 min. on, 20 min. off, 3X/day until swelling subsides. Avoid using pad directly on affected area - leave opening over sore spot. If pain persists for more than 3 days, call doctor.
<b>Muscle Cramp (leg)</b>	Immediate tightness and spasm in muscle, pain due to fluid imbalance, improper conditioning.	Proper diet (apples, bananas, oranges), gradual conditioning to increase flexibility.	Stretch the involved area immediately, massage area of muscle where spasm is occurring.
<b>Jammed Toe</b>	Pain, swelling, loss of motion, resulting from jamming toe into surface, tight shoes or from kicking an object.	Proper footwear, walking carefully.	Place toe in cold water (55°F) 3X/day for 20 min. Move toe up and down within pain tolerance. Wrap toe in gauze.
<b>Charlie Horse</b>	Pain, swelling, loss of motion resulting from a direct blow or over-use of muscles.	Proper conditioning, flexibility, protective padding if engaging in contact sport.	Ice - 20 min. on, 20 min. off, 3X/day. Do not apply heat. Stretch slowly until soreness and swelling subsides.
<b>Shin Splints</b>	Pain on middle, inside or outside of lower leg due to heavy running, improper footwear, running on hard surface and poor flexibility.	Good footwear, gradual conditioning, flexibility. Exercise by walking on heel of foot, outside of foot, inside of foot.	Apply ice on painful area before and after activity. <b>Pain on</b> a. Inside of leg: Strengthen muscles that turn foot in by walking around on outside of foot. b. Outside of leg: Run less until pain subsides. If pain persists, get X-ray. c. Front of leg: Do calf stretches, get soft heel for shoes.
<b>Achilles Tendonitis</b>	Pain on heel cord, calf, or back of heel, soreness during running or jumping when pushing off due to over-exertion, improper stretching, hard shoe or sneaker heel, sudden twist.	Proper stretch before and after exercise, padded heel in the shoe, gradual conditioning to activity. Use padded heel cup.	Apply ice 20 min. on, 20 min. off, 3X/day. Take aspirin, if O.K. with doctor 4X/day for 7 days. Gradually stretch tendon (lean against wall, keeping heel flat on ground). This will stretch the upper calf.
<b>Pulled Muscle</b>	Pain, tightness, swelling, occasional loss of motion if severe, resulting from improper stretching, extreme muscular fatigue, salt and potassium imbalance, sudden twisting motion.	Conditioning prior to excessive exertion.	Ice - 20 min. on, 20 min off, 3X/day, ace bandage, slow gradual stretch of involved area. When there is no pain upon walking, begin jogging, then increase pace gradually.
<b>Runner's Cramp</b>	Pain and cramping in side of stomach with pain increasing if you continue to run - due to loss of fluid (salt and potassium) while running in hot climate or to over-exertion.	Eat bananas, apples or oranges 12 hours before activity. Eat carbohydrates 1 day prior to activity, avoid eating 2 1/2 hours before exercise.	Apply pressure with hand, directly on the area of pain. Then slowly stretch out the cramped area.

(continued)

## Sports Injury Prevention Guide (continued)

Injury	Symptoms	Prevention	Treatment
<b>Heat Stroke</b>	Dry (no sweating), red skin, temperature elevation, strong rapid pulse	Gradual conditioning. No heavy exertion in hot humid (over 90%) weather.	True emergency, life threatening. Call Ambulance immediately. Cool entire body, place cold packs on pressure points (armpits, groin, temple).
<b>Athlete's Foot</b>	Itching and redness between toes or on the sole of foot. Scaly dry skin caused by a superficial fungus infection, soil in locker rooms, excessive sweating, dirty socks. Highly contagious.	Change socks twice daily. Thongs or foot covering in shower or locker room and other public places. Powder feet daily.	Wash feet 3X/day thoroughly, especially between the toes. Apply anti-fungal ointment or spray. Expose feet to air. Wash socks daily and powder over applied anti-fungal spray during activity.

### Five Warm Up/Cool Down Stretches

- 1. Groin**— Sitting with soles of feet together, grasp ankles and pull toward groin area. Place hands on inside and push knees out and down toward floor until you feel a stretch. Hold 10 seconds, relax and repeat 5 times.
- 2. Quadriceps** — While standing, bend knee and grasp ankle toward buttocks until you feel a stretch. Hold 10 seconds, relax, repeat 5 times. Alternate legs.
- 3. HAMSTRING** — Sit with one leg straight, other leg bent with heel against upper part of inner thigh. Lean over straight leg and grasp lower leg, pulling chin to knee. Keep knee straight. Hold 10 seconds, relax and repeat 5 times. Alternate legs.
- 4. CALF** — Stand facing a wall. Using hands for balance, lower hips by bending knees toward ground and wall until you feel a stretch in lower calf. Do not allow heels to come off the floor. Hold 10 seconds, relax, repeat 5 times.
- 5. LOWER BACK** — Lie on back, knees bent. Raise one knee to chest, grasp with hands and pull in to chest. Hold till stretch is felt. Relax and repeat with opposite leg, then both legs together.

Click here to learn about [Toning Exercises](#).

Click here to read about [Reducing Sports Injuries](#).

## Bad Shoes Plus Running Can Equal Painful Problems

Source: [Cpl W. Zach Griffith](#)

An old, beat up set of running shoes can damage more than your image when you're out logging the miles. In fact, running constantly on an old set of sneakers can cause pain and problems in more than just your feet. "The foot is an extension of your skeletal axis," said Dr. Ronald S. Cohen, the medical director for the SMART center at Marine Corps Recruit Depot San Diego medical clinic. "Doing repetitive motion on worn-out footwear transfers the shock of impact to your knees and your spine. It can lead to anything from mild muscle aches to stress fractures."



"The time it takes for injuries to occur depends on the person; the amount of damage is a progression. One long run on bad footwear can start the cascade. Then each run after that compounds the issue," Cohen continued. Back, knee and a lot of other joint pain can be fixed with a good pair of shoes, according to Bonnie Axman, a personal trainer and fitness instructor for Marine Corps Community Service. Axman, who has more than 10 years experience running competitively, has had first-hand experience with running injuries from improper footwear. She was

running long distances while preparing for a marathon on bad shoes and that led to stress fractures. Only after visiting an orthopedist, changing her shoes, and letting her injuries heal could she start running again.

Marines are especially at risk for running injuries when training for the combat fitness test, according to Axman. "Your body is not going to be used to running long distances in boots," Axman said. "If you are going to run in your boots make sure you start off slowly and gradually increase the distance and intensity of the workout over a longer period of time." One way to help keep boots more runner-friendly is to buy new inserts for them, ones that keep your feet well cushioned and supported.

The best thing for Marines, and runners in general, to do is go to a running specialty store, according to Axman. There are several running experts that can help you find the best shoe for your running style and foot type. Once you have the correct shoes, being able to tell the difference between sore muscles and injury can help prevent real issues. Pay attention to how long it takes for symptoms to occur when you start running. If you get one point of tenderness in the same place every run and it starts at the same distance into the run, if it is a single point of tenderness as opposed to the whole muscle being sore, and if there is swelling at the sight of the pain, this condition can point to a running injury, according to Cohen. "Catch the problem early," Axman said. "Injuries don't happen overnight. Save yourself the time and pain."



The knee is a complex part of the human body that is made up of bones, cartilage, fluids and ligaments.

When one of those parts become irritated, diseased or injured, knee problems can occur. Most knee problems happen from sports injuries, according to the U.S. Department of Health and Human Services.

Sports injuries don't just happen in team or individual sports, but also during exercise. Although some injuries are simple accidents, others result from using improper gear including footwear, failure to warm the body up before physical activity and poor training technique.

Physical activity such as running can cause injuries to the knee for a number of reasons, but most can be prevented with proper care such as stretching properly before and after physical activity.

During a running and knee care class at the Barber Physical Activity Center, Marine Corps Base Quantico, on May 6, LCDR Ryan Fowler, a physician at the U.S. Marine Corps Officer Candidates School, discussed how proper running shoes are important in preventing knee injuries:

"Shoes should be in good condition," said Fowler. "I recommend changing shoes every three to six months and making sure they are appropriate for the right type of activity." The categories of knee injuries also fall under acute or chronic, but occur at different times and should be treated to prevent further injuries. Acute injuries happen during physical activity and include sudden-severe pain, swelling and not being able to place weight on the injury.

When one of those parts become irritated, diseased or injured, knee problems can occur. Most knee problems happen from sports injuries, according to the U.S. Department of Health and Human Services.

"I decided to come to this clinic because, I've been having lateral pain in my knee and wanted to be more efficient in my running," said Starr Archulet, a personal trainer at the Barber Physical Activity Center.

Chronic injuries often happen after exercising or playing a sport for a long time. This pain happens during the activity, along with swelling and a minor ache while resting. Minor injuries can be treated at home with rest, ice, compression and elevation, also known as the RICE method. But more severe injuries to a major ligament in the knee like the anterior cruciate ligament, should be treated by a physician.

"Some people do too much too soon," said Fowler. "And ice is one the most underutilized tools. It's easy and doesn't take much; you will be amazed how much better you feel," said Fowler.

**When should you see a health care provider?**

- ◆ You fell and landed on your kneecap, and its quite swollen or you're having difficulty moving it.
- ◆ You twisted your knee and it has swollen significantly.
- ◆ You are unable to move your knee and it feels locked.
- ◆ Your knee keeps buckling when you try to put weight on it.
- ◆ You can't bear weight on the leg without significant pain.
- ◆ Your knee has been scraped and an area of redness is getting larger or you have a fever.

**Popular Places**


**USMC AVIATION CLASS A MISHAPS**

29 Oct 09 (California) AH-1W crashed into water after midair collision. (2 fatalities)

26 Oct 09 (Afghanistan) AH-1 and UH-1 crashed in open desert. (4 fatalities)

**USMC GROUND ON-DUTY CLASS A MISHAPS**

18 Jul 10 (Afghanistan) Cpl drowned after crossing a river in full patrol PPE and re-entering the river to assist Afghan partnered patrolman who fell and was swept away.

09 Jun 10 (Afghanistan) LCpl died from an accidental, self-inflicted gunshot wound to the chest.

11 May 10 (MCB, HI) Civilian police officer died while exercising.

20 Mar 10 (Camp Lejeune, NC) LCpl died as a result of injuries sustained while participating in a command-sponsored boxing session.

05 Mar 10 (MCAS New River, NC) Civilian employee checked out boat from marina to conduct a routine maintenance check ride and never returned. Body was recovered on 24 Mar 2010.

22 Dec 09 (Afghanistan) LCpl died while performing maintenance on an M88 when hoist chain broke causing vehicle to fall.

03 Dec 09 (Camp Pendleton, CA) E-4 died when parachute failed to open while conducting low level static line jump.

**USMC PRIVATE MOTOR VEHICLE FATALITIES**

02 Aug 10 (Rosenberg, TX) Cpl died when his motorcycle was struck from behind by another vehicle.

30 Jul 10 (Jacksonville, NC) PFC died when the vehicle in which she was a passenger collided with another vehicle.

12 Jun 10 (Jacksonville, NC) SSgt died in a single-vehicle mishap after departing the roadway and striking a tree.

12 Jun 10 (Richlands, NC) Cpl died in a motorcycle mishap after being struck by another vehicle while pulling out of a parking lot.

30 May 10 (Wall Township, NJ) Sgt died in a single-vehicle mishap when the vehicle overturned.

25 May 10 (Camp Pendleton, CA) Cpl died in a bicycle mishap when he was struck by a vehicle.

23 May 10 (Beaufort, SC) Capt died in single-vehicle mishap when automobile left the road and struck a tree.

22 May 10 (El Paso, TX) PFC died when vehicle he was a passenger in struck another vehicle that was stopped alongside a highway.

20 May 10 (Uvalde, TX) PFC died in a single-vehicle mishap when his car hit a pole.

19 May 10 (Irving, TX) PFC struck and killed in a hit and run mishap while walking on the highway.

07 May 10 (Honolulu, HI) LCpl died when the vehicle in which he was a passenger collided with another vehicle.

22 Apr 10 (Escondido, CA) Cpl died in a single-vehicle mishap.

16 Apr 10 (New Bern, NC) Cpl and Sgt passengers died in a single-vehicle mishap when driver lost control and vehicle rolled into water filled ditch and submerged.

28 Mar 10 (Summerton, SC) LCpl died in an automobile mishap when tread separated from tire causing vehicle to swerve into the median, roll and strike a tree.

18 Mar 10 (San Diego, CA) Two LCpl's died in an automobile mishap when the vehicle crashed through a guardrail and into a canyon.

15 Mar 10 (Mobile, AL) Cpl died in motorcycle mishap when he struck a curb and was thrown from the bike.

13 Mar 10 (Atlanta, GA) LCpl died in an automobile mishap after being struck head-on by drunk driver traveling the wrong direction on the freeway.

27 Feb 10 (Kapolei, HI) Sgt died in a motorcycle mishap when he collided with the vehicle in front of him.

05 Jan 10 (Camp Lejeune, NC) PFC died in a single-vehicle mishap.

27 Dec 09 (Westport, CT) LCpl died as a passenger in automobile mishap when driver lost control and struck a tree.

18 Dec 09 (San Diego, CA) Cpl died after being struck by an automobile in a hit and run mishap.

07 Dec 09 (Kailua, HI) Sgt died in a motorcycle mishap.

26 Nov 09 (Morongo Valley, CA) LCpl died when the vehicle in which he was a passenger overturned several times. Two other SVMs were hospitalized.

14 Nov 09 (New Brunswick, NJ) SSgt died 23 Nov 2009 from injuries sustained as a passenger in an automobile mishap.

06 Nov 09 (San Diego, CA) Sgt died in a motorcycle mishap when he collided with another vehicle.

27 Oct 09 (New Bern, NC) PFC died 03 Nov from injuries sustained in automobile mishap when vehicle rolled and struck a tree.

17 Oct 09 (Murrieta, CA) SSgt died in a motorcycle mishap when he collided with a vehicle that pulled out into his lane of travel.

13 Oct 09 (Santa Clara, CA) Sgt died in a multiple vehicle mishap.

09 Oct 09 (Escondido, CA) LCpl was in a minor two vehicle mishap and was being treated by emergency medical personnel at the scene when he was struck and killed by a third vehicle.

01 Oct 09 (New Bern, NC) PFC died in an automobile mishap after he struck the back of a school bus that was stopped at a railroad crossing.

**USMC OFF-DUTY/RECREATIONAL FATALITIES**

08 Jul 10 (Lexington, KY) LCpl died after being found unresponsive following a night of drinking while on post deployment leave.

04 July 10 (Guantanamo Bay, Cuba) Two LCpl's and one Cpl drowned while snorkeling.

05 Jun 10 (Twentynine Palms, CA) Cpl died after being found unresponsive on the ground in front of his off-base residence.

21 May 10 (Borrego Springs, CA) Sgt died in dirt-bike mishap when he lost control of motorcycle and it rolled over.

09 May 10 (Quantico, VA) LCpl died from a gunshot wound inflicted by a personal firearm.

02 May 10 (Quantico, VA) SSgt was found deceased in his home.

03 Apr 10 (Port Barre, LA) LCpl died in a recreational boating mishap.

28 Mar 10 (Fallbrook, CA) LCpl found unresponsive after a night of drinking.

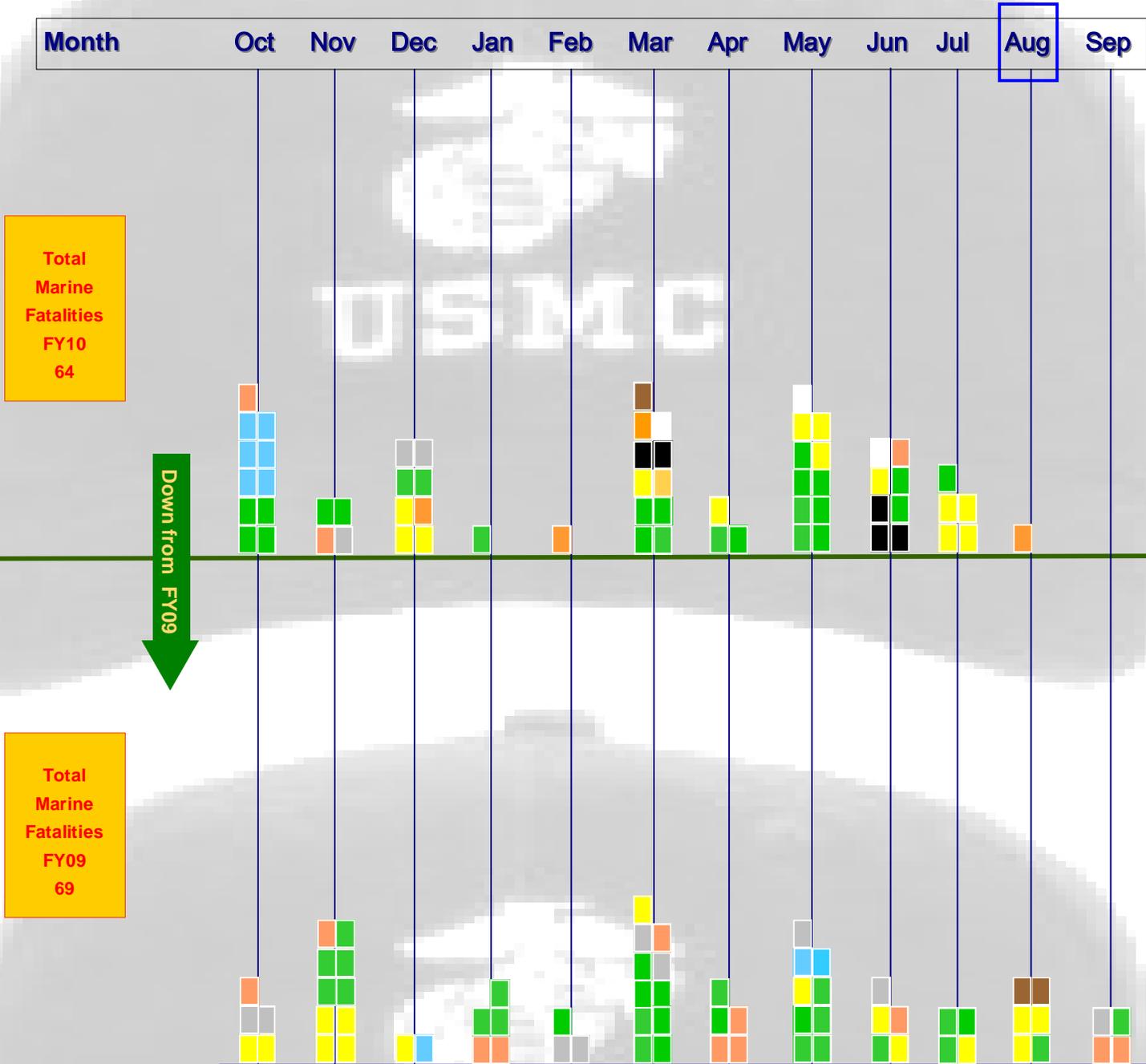
14 Mar 10 (Oceanside, CA) Sgt found dead after a night of drinking.

24 Dec 09 (Monroe, NY) Pvt died of asphyxiation after vomiting in his sleep.

06 Dec 09 (Albuquerque, NM) PFC was found deceased in private residence.

06 Dec 09 (Havelock, NC) Cpl died from a gunshot wound to the chest.

# Fatality Summary as of August FY10



Ground
PMV
GOV
Aviation
Motorcycle
Off Duty/Recreational
Shore
PT
Afloat
Training/Operational

Note: This report has been compiled from publicly available information and is not official USMC policy. Although information has been gathered from reliable sources the currency and completeness of the information reported herein is subject to change and cannot be guaranteed.