

KNOWLEDGE

VOL 1 SEPTEMBER 2007

OFFICIAL SAFETY MAGAZINE OF THE U.S. ARMY

READY FOR THE COLD?

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HAVING A SUCCESSFUL SAFETY PROGRAM



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LEADERS STAY ENGAGED

Leaders, please accept my sincere thanks, as you achieved great strides in reducing accidental losses in our Army for fiscal 2007. While this is indeed a good news story, projections tell us we will lose more than 200 Soldiers by the end of this fiscal year. Additionally, the number of lost work hours due to injuries and illnesses, including our civilian work force, is expected to cost the Army \$180 million for fiscal 2007. These losses are our most precious resources—loss of combat power, losses to our formations and losses to our Families.

You stepped up and engaged Soldiers, and you continue proactive efforts in shifting the Army's safety culture. We see our culture of "Never Leaving a Fallen Comrade," regardless of where or how our comrades fall, showing positive momentum. We acknowledge this positive trend as a direct reflection of leaders at all echelons engaging and

making a difference. Our shift in safety culture, highlighting teamwork, buddy systems and a "Band of Brothers," remains dependent on leaders maintaining high vigilance regardless of whether on or off duty, deployed or at home station. Where leader engagement is constant and vigilant in deployed locations, losses are down;

however, once back at home, it appears leaders tend to disengage with their Soldiers, resulting in increased losses.

Recently, the Chief of Staff, Army, and the Secretary of the Army directed our continued aggressive stance in safety programs for fiscal 2008. Each command strives to identify their loss areas, develop their plans of action, address the safety climate and culture, and endeavor to create systems that measure successes, ensuring our programs and plans are meeting our intent and are adaptable to the changing environment of our Army. To meet fiscal 2008's reduction goal of a 20-percent decrease in fatalities,

these objectives require aggressive and committed Soldiers and leaders fully engaged and integrating available resources.

Teammates, we have challenges ahead. The Army owns programs, tools and initiatives available for your commands and formations to leverage. There is no reason to start from scratch; use those resources and adapt them to fit your units. The Army Safety Office and the U.S. Army Combat Readiness/Safety Center are ready to assist you. <<

Army Safe is Army Strong!

William H. Forrester
Brigadier General, USA
Commanding

FROM THE DASAF

“YOU STEPPED UP and ENGAGED Soldiers, and you continue PROACTIVE EFFORTS in shifting the ARMY'S SAFETY CULTURE.”



U.S. ARMY COMBAT READINESS CENTER

<https://crc.army.mil>

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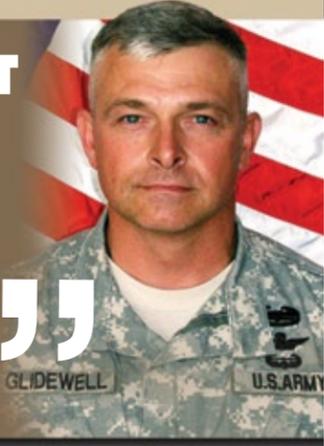
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“We can’t just **REACT TO ACCIDENTS**; we must become **PROACTIVE** to **PREVENT THEM.**”



MOVE LEFT OF THE BOOM

As I travel speaking to civic or military organizations, I am often asked about Soldiering. It has been my experience during my 26-plus years in this great profession that “Soldiering” has not changed; however, the value placed on individual Soldiers has.

I see this in the focus we put on today’s Army safety culture. Compared to when I entered the Army in 1981, safety has become a very recognizable part of the Army’s landscape. This is a dramatic difference—one for which you are to be commended!

As General Forrester has already indicated in this magazine, you are making great strides in reducing accidental losses. In fact, our current figures for fiscal 2007 show a four percent reduction compared to the same time last year. This is good news and worth sharing; but there is still plenty of work to be done.

While on-duty safety is important to us as Soldiers, we must remember that safety should be equally as important off duty. With the media’s high interest in our combat missions abroad, I receive many questions regarding the dangers Soldiers face. People seem surprised when I inform them that we handle combat hazards well, often only to come home and lose Soldiers to needless accidents. I explain to them that Soldiers in a hostile environment are being constantly

reminded of the dangers where they work, eat and sleep. In combat, Soldiers have battle buddies watching over them like guardian angels every time they exit the entry control point.

However, when we come home and ground our Outer Tactical Vest, it’s easy to assume the hazards are gone and become less safety-conscious. To prevent that, we, as leaders, must engage our Soldiers, reminding them to be alert for hazards just as they were in combat. Doing that, however, means we have to set the example. As a leader, ask yourself if you spent enough time planning for safety before exiting the gate at your home station to perform a mission.

While you have read about many of the tragic, fatal accidents involving Soldiers, in my role as the USACRC Command Sergeant Major, I live with these tragedies on a daily basis. When I hear about the death of a Soldier, my first thought is about their loved ones who are left behind. Then I ask myself, “What can WE, as engaged leaders, do better to prevent this from occurring in our ranks again?”

The answer is simple—we must move “left of the boom” on accidents. We can’t just react to accidents; we must become proactive to prevent them. That’s a challenge every Soldier, regardless of rank, must accept if we are to beat an enemy that stalks us just as relentlessly on the streets of Boston as he does in Baghdad.

During fiscal 2008, the Chief of Staff, Army, and the Secretary of the Army assigned us the goal of reducing fatal accidents by 20 percent. The only way we can attain that goal is to exit the gate each day with same safety mentality we had in theater.

To aid you with this endeavor, I encourage you to work closely with your safety professionals and to visit our Web site at <https://crc.army.mil>. There are some helpful tools there. Remember, safety is a vital part of the environment in which we successfully accomplish our missions—not just a reaction or afterthought. ◀

Army Safe is Army Strong!

Tod L. Glidewell
Command Sergeant Major
U.S. Army Combat Readiness/Safety Center

Whether you’re an aviator performing a preflight inspection, a crew chief performing scheduled maintenance, a ground guide directing aircraft or vehicular movement, or a Soldier participating in physical training, most Soldiers are at one time or another subjected to the harsh elements of operating in the cold. And make no mistake about it—the cold can cripple or disable you if you let it. Now is the time to get some cold weather knowledge before the onset of the winter season.

Be Prepared for the Cold!

COL JOHN CAMPBELL, D.O.
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Cold injury prevention

So, how do you prepare? One of the most basic elements of wintertime mission planning is ensuring all Soldiers know how to prevent, detect and give first aid for cold-weather injuries (see Cold Injury Prevention chart on pages 6 and 7).

The most important thing is plan for the cold. Planning factors include using composite risk management and making sure you have accurate weather information for the area and time of the mission, being particularly aware of rain, snow and winds. Knowing the weather hazards will allow for more informed and effective mission planning. You can’t change the weather, but you can be prepared for it.

Wet conditions and wind chill greatly increase the chance of injury. Pay particular attention to Soldiers manning forward arming and refueling points. Not only are they exposed to cold, but also wet conditions (like rain or snow and increased wind chill from rotor wash). In addition, they are handling cold metal objects that could freeze to the skin. Remember petroleum, oil and lubricant products remain liquid at below-freezing temperatures. Aircrews and Soldiers flying with

doors, ramps or windows open are also susceptible to the same hazards and need to be cautious, especially if they are exposed to rotor wash.

Good nutrition is essential because it provides the body with fuel to produce heat. The number of calories needed to maintain normal bodily function generally increases to 4,500 as the weather gets colder. Soldiers should have plenty of hot chow and warm beverages available.

We must not forget one of the most important aspects of the battle against cold injury—hydration. Leaders can help their Soldiers stay hydrated by providing them with liquids they’ll actually drink. During

cold operations, one usually doesn’t feel thirsty, so it’s imperative for leaders to keep Soldiers drinking. Water is best; however, sports drinks also are acceptable if available. Sodas, coffee, tea or other caffeine drinks won’t help. A good rule of thumb to determine if your body is getting enough fluids is if your urine is pale yellow.

Another important individual preventive measure is the proper wear of cold-weather clothing. Soldiers frequently get cold injuries simply because they aren’t dressed properly; dressing in layers with the proper approved clothing is best. To cope with lower temperatures, many crewmembers don their winter long

DID YOU KNOW?

During cold weather, static electricity can create serious problems in flight and on the ground—particularly during refueling and rearming operations.

Static electricity can be generated in many ways, from brushing snow and ice from an aircraft to dragging steel grounding cables over the snow. During refueling and rearming operations, it is extremely important to ground the aircraft

properly. In addition, personnel must always remember to touch a properly grounded surface to discharge static charges that have built up in their bodies, as well as wear the appropriate clothing and PPE (helmets, gloves, goggles).

As a further precaution during refueling operations, fuel nozzles should be fully inserted into the aircraft filler neck at all times.

johns. A word of caution to all—long underwear for flight crews should be compatible with your wool or cotton Nomex® flight suit and gloves—polypropylene can burn or melt. If you're involved in a post-crash fire, wearing nylon insulated undergarments can be a matter of life and death. Nylon melts below the Nomex® flight suit melting point, which will result in burns. Wearing nylon glove inserts with Nomex® gloves can result in severe burns. Officials do not recommend wearing nylon inserts with the Nomex® flight gloves. Wool or cotton socks are a must for the properly dressed aviator because they do not burn as rapidly as the nylon type. Headgear is extremely important because the body can lose large amounts of heat through the head. It's also important to protect the hands and fingers by wearing the proper gloves. Aviators, your Nomex® gloves are designed to protect you from fires; they are not designed for extreme cold and will do little to protect your hands when wet.

Use of Air Force cold weather flight suits with the nylon liner is also prohibited. Aviators have been injured in fires when the lining has melted to the skin.

Soldiering is a physically demanding job, and intense physical exertion results in a loss of body heat through perspiration. Cold weather clothing should be worn loose and in layers to allow for insulation by air trapped between the layers. It's important to keep clothing clean and dry. Dirt, POL or water can increase the rate of heat loss by reducing the insulation ability of the clothes through evaporation. It's also important to keep clothing repaired—a broken zipper cannot keep the cold out.

Proper wear of boots is important. Because the feet get wet from sweat, this is a prime condition that can lead to trench foot. Socks should be changed frequently and boots rotated. Make sure boots are allowed to dry by a heat source at night because sweat can freeze.

Other factors influencing cold injuries

• **Previous cold injuries:** Soldiers with previous cold injuries are more susceptible to having another. It is extremely important to identify these Soldiers and for first-line supervisors to monitor them closely.

• **Tobacco:** Nicotine, regardless if it comes from a cigarette, snuff, pipe, cigar or patch, causes blood vessels to constrict. This is particularly dangerous in the hands and feet and can lead to, or worsen, a cold injury.

• **Alcohol and caffeine:** These can lead to increased urination and dehydration.

• **Meals:** If you skip meals, the first thing the body does is slow the metabolism. Slower metabolism

means less heat production and more chance of cold injury.

• **Activity:** Huddling up and not moving is the wrong thing to do. The more you move, the more heat you produce. Decreased activity decreases the time it takes to get an injury.

• **Buddy system:** The buddy system is a great way to help prevent injuries if Soldiers are trained to know what to look for.

• **Self-checks:** A simple self-check is to pinch the fingernails and watch how

fast they return to red. The slower the red returns, the higher the potential for an injury to the fingers or toes.

More information on cold weather injuries can be found in Field Manual 21-10, *Field Hygiene and Sanitation*, FM 21-11, *First Aid for Soldiers*, and Technical Note No. 02-2, *Sustaining Health and Performance in Cold Weather Operations*. For more prevention tips, visit the U.S. Army Center for Health Promotion and Preventive Medicine's Web site at [http://chppm-www.apgea.](http://chppm-www.apgea.army.mil)

All **COLD WEATHER** injuries are preventable! Prevention, early detection and immediate evacuation are the **RESPONSIBILITY** of **LEADERS AT ALL LEVELS**, as well as the **INDIVIDUAL SOLDIER.**

army.mil. USACHPPM and the U.S. Army Research Institute for Environmental Medicine have also developed materials that include valuable cold injury prevention products, including useful posters, videos and pocket guides. To obtain these products, visit the USACHPPM Web site at <http://chppm-www.apgea.army.mil/HIOCWII/>.

Conclusion

All cold weather injuries are preventable! Prevention, early

detection and immediate evacuation are the responsibility of leaders at all levels, as well as the individual Soldier. Use CRM to keep your Soldiers from becoming a statistic. Battling the cold is like battling any other enemy—mission success happens only through planning and training. Leaders are accountable for the protection of their Soldiers. By staying engaged in all they do during cold weather operations, leaders will help Soldiers stay warm and Army Strong! ◀

COLD INJURY PREVENTION

• **Immersion foot:** This is caused by continued exposure to wet, cold conditions. The surprising factor is it doesn't have to be freezing cold; immersion foot can occur at temperatures up to 60 F if the exposure lasts as long as 12 hours. Of course, if the temperature is lower, it can occur sooner. Symptoms include cold, numb feet that may have shooting pains, as well as redness, swelling and bleeding, particularly involving the toes.

+ **First Aid:** The most important step is to re-warm and dry the feet. Expose the feet to warm air and/or gently wrap in dry blankets or towels. Do not massage, rub or use salves or ointments on the feet. Do not expose the feet

to extreme heat; if the feet are numb, the victim may get burned and not realize it. If you suspect trench foot, get medical help immediately.

• **Chilblain:** This is a condition caused by exposure of bare skin to continued temperatures ranging from 20 to 60 F, depending on an individual's acclimatization. Symptoms of chilblain include tender, hot-feeling, red and itching skin mainly on exposed areas like the cheeks, ears and fingers. Feet, however, also may be affected.

+ **First Aid:** Warm the Soldier's affected body part with direct body heat, or move the Soldier to a warm area. Do not massage the area, rub with snow or ice or apply

salves or ointments. Do not expose the area to any intense heat. If the Soldier does not improve, seek medical help.

• **Frostbite:** This is a very common and potentially dangerous injury. The body is mainly water, and water freezes at 32 F. Frostbite occurs when the body cannot maintain sufficient internal heat in certain parts and the water in cells freezes. Areas that are most often affected are those areas exposed or where blood flow can be decreased such as fingers, toes, ears and other facial parts. Exposure to bare skin on metal, extremely cool POL, wind chill and tight clothing, particularly boots, can make the problem worse.

Symptoms include numbness or tingling in the affected part; blisters, swelling or tenderness; body parts that feel dull or wooden; and pale, yellowish or waxy-looking skin—gray in dark-skinned Soldiers.

+ **First Aid:** Frostbite is a medical emergency and the victim should be evacuated as soon as possible. If not treated properly, frostbite can lead to gangrene and amputation. Before evacuation, move the Soldier to a warm area and the part affected must be warmed with direct body heat or warm air. Do not warm with hot water or expose the part to intense heat. Do not massage or rub with snow or ice or use salves and ointments on the affected area. Do not allow the part to thaw and then refreeze.

• **Hypothermia:** This is a serious medical emergency. Hypothermia is caused by severe body heat loss due to prolonged cold exposure. Immersion in water can make hypothermia worse or come on more quickly because the water increases heat loss. Symptoms include lack of shivering and what has been described as "the Umbles"—stumbles, mumbles, fumbles and grumbles—all of which are signs of mental slowing and lack of coordination. Hypothermia can progress to unconsciousness, irregular breathing and heartbeat and, eventually, death.

+ **First Aid:** If you find a Soldier in the early stages of hypothermia, start warming the Soldier immediately. If his clothes are wet, remove them.

Loosen any restrictive clothes. Wrap the victim in dry blankets or a sleeping bag. Another person can get into the sleeping bag as an additional heat source. Get medical help immediately.

If the Soldier is unconscious, cold to the touch and appears to have no pulse or breathing, don't assume the Soldier is dead! Normal body temperature is 98.6 F. When body temperature gets down to 90 F, it tries to save energy and heat by trying to

"hibernate." It also decreases blood flow to the Soldier's arms and legs, and his pulse and breathing become shallow. A Soldier may appear dead and his heart rate and breathing so low that untrained personnel miss it. Medics have resuscitated people with body temperatures as low as 82 F. Get the Soldier to a medical facility as soon as possible!



Working in cold weather is a fact of life for Soldiers. At some point, nearly every Soldier will be shivering in a tent somewhere in the world. And, as surely as winter comes, Soldiers will choose to heat their tents by means of a space heater, stove or other heating device.

No Seconds to Spare

CHRIS FRAZIER
U.S. Army Combat Readiness/Safety Center
Fort Rucker, Ala.

Heat on a cold winter night provides many advantages for Soldiers. One major benefit is that Soldiers will lose less body heat and conserve more energy while sleeping, potentially improving their performance during the next day.

Despite the advantages inherent with the use of heating devices, fire and carbon monoxide poisoning create unique hazards to Soldiers in tents and other enclosed areas. Fire can engulf a tent in 10 seconds and destroy it in 60 seconds, giving Soldiers very little time to react. Likewise, carbon monoxide is odorless, colorless and tasteless and can quickly kill Soldiers while they are sleeping, as was the case in a previous accident where two Soldiers died while sleeping in their tent.

While commercial off-the-shelf heaters and stoves may seem to be a good solution for heating problems in the field, leaders must ensure Soldiers receive proper training before using a piece of COTS equipment. For example, locally procured COTS heaters that are unflued or unvented (i.e., no smokestack) vent exhaust fumes, including carbon monoxide, directly into living spaces. In addition, none of the COTS heaters meets Army requirements for field environments. On the other hand, the designs of standard military heaters include testing for specific military operation and vent combustion fumes to the outside to prevent the build up of deadly gasses.

To keep Soldiers warm and safe this winter and in all

cold weather environments, follow these tips:

- Operate all heaters and stoves in accordance with the applicable technical manual.
- In the event of a tent fire or suspected presence of carbon monoxide, the first and most important task is to evacuate the tent. Testing demonstrates that tent fires can completely engulf the tent in as little as one minute.
- A Soldier should be on fire guard any time a heater is running.
- Do not wear wet clothing while sleeping in sleeping bags in an effort to dry them.
- Do not pile combustible materials such as grass and pine needles on the tent floor for insulation, as they can catch flame easily.
- Place stoves in sandboxes when using them

in tents with wooden floors.

- Always use the specified type of fuel for the heater or stove you are using.
- Clean and thoroughly inspect each heating device and all its components in accordance with the appropriate technical manual before storage and use. Pay special attention to check for leaking valves, holes in gas cans and proper assembly.
- Secure stovepipe opening covers with tie tapes so the covers will not contact the stovepipe.
- Use enough stovepipe sections so one complete section is above the highest point of the tent. Ensure stovepipe sections are vertical and do not contact any part of the tent.
- Be sure to leave enough air space between the tent wall and the heater or stove. If

Soldiers place heating devices too close to the tent wall, they might ignite the tent.

- To prevent explosions any time the stove goes out, wait until the burner cools before relighting.
- Do not store fuel inside a tent warmed by fire. The fuel can for the heater must be located outside

go to sleep with a lantern or candle burning.

- Do not open a stove or heater while it is still hot, even after a flame-up has subsided. Fresh air will feed a fire and reignite it.
- Use the proper fire extinguisher. Never use water to put out a fire.
- Do not remove a hot

the tent as far from the tent as the fuel hose allows.

- Turn off the heater before exchanging the fuel can.
- Do not smoke or drop cigarette butts around combustible materials or

stove or heater from the tent; hot surfaces can contact tent flaps and set them aflame.

- Even in extreme cold, do not operate heaters at full capacity. An overheated stovepipe could ignite the tent, and high temperatures

can warp grates and damage other components.

- Provide sufficient ventilation for fresh air to enter the tent at all times.
- Ensure fire extinguishers are available in every tent that has a stove or heater.
- Have a fire plan ready and rehearsed!
- Ensure emergency agencies such as fire departments and paramedics have access to all structures using heaters and other flame sources.
- Do not leave stoves or heaters unattended. As fuel levels decline, pressure drops and the drip valve must be readjusted to maintain the proper flame.
- When lighting a heater or stove, always turn your face away from the chamber door. If a flash occurs, it will most likely happen when the fuel first ignites.
- Keep stoves clean, but always practice safety

when doing so! The practice of hitting a stovepipe and pouring in a little water to clean out soot is extremely dangerous; throwing blanks into a burning stove to clean out carbon buildup in the stovepipe is even worse.

- Do not touch heater or stove metal parts when temperatures are below freezing without protective gloves. Skin may freeze upon contact and tear from the flesh.
- Use caution when handling sharp-edged pipes to avoid cuts.

In any dangerous situation, the first response is to save Soldiers' lives. In a tent fire, there are no seconds to spare. ◀

Article compiled from the Center for Army Lessons Learned Web site, <http://call.army.mil>, and the October 2002 issue of PS magazine.

FYI

Approved and tested Army personnel heaters include:

■ **H-45 space heater (NSN 4520-01-329-3451):** The H-45 replaces the old potbelly M-1941. The H-45 will heat general purpose and TEMPER tents and burns liquid and solid fuels.

■ **Arctic space heater (NSN 4520-01-444-2375):** The Arctic heater replaces the gasoline-burning M-1950 Yukon heater and is a lightweight, portable heater for five- and 10-man arctic tents. The Arctic heater burns liquid and solid fuels.

■ **Small space heater (NSN 4520-01-478-9207):** The small space heater is ideal for use in smaller tents such as the four-man Soldier/crew tent. It burns liquid fuel and has a built-in tank, precluding the need for an external fuel can and stand.

■ **Thermoelectric fan (NSN 4520-01-457-2790):** The thermoelectric fan is a compact, self-powered unit that fits on top of any military tent heater. The fan uses some of the heat to turn the fan blades, which circulates heated air, improves comfort and saves fuel.

■ **Convective space heater (NSN 4520-01-431-8927):** The convective space heater provides forced hot air for tents and shelters. This heater generates its own power and recharges its battery.





Keep It On The Road

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This year, just about everyone will have a run-in with Old Man Winter. And just as you wouldn't head outside without first preparing for the elements, vehicles also need attention before expecting them to perform in less than favorable conditions. However, by doing a little Preventive Maintenance Checks and Services, you should be able to keep your vehicle where it belongs—on the road.

How well a vehicle responds to cold weather conditions is usually up to the operator. Whether you're driving a privately owned vehicle or a government vehicle, a little PMCS goes a long way. Failing to properly service your vehicle could leave you stranded or, even worse, in a life-threatening situation. By using the checklist below, you can

If the engine turns over slowly, have the battery checked for serviceability by a qualified mechanic.

- Check the oil and oil filter. Use an oil weight recommended for extreme temperatures.

- Check tires for adequate tread and correct inflation and ensure all tires are the same size and type. Do not mix radial and conventional tires.

it can be used to receive information about road conditions and travel advisories. If your car is not equipped with a radio, use a portable radio.

For optimal performance, vehicles should have a tune up for winter. Doing so will aid in easier starting. Extreme cold temperatures will cause your car to start harder, thus wearing down your battery.

For **OPTIMAL** performance, **VEHICLES** should have a **TUNE UP** for winter.

prepare your vehicle for the upcoming cold winter months. (If you're driving a military vehicle, follow the maintenance checklist provided by your motor pool).

- Check radiator hoses for leaks and cracks and ensure clamps are tight. Replace cracked or brittle hoses.

- Check the antifreeze level and ensure it is rated for temperatures at least 30 below zero.

- Check headlights, taillights, parking lights and turn signals, as well as interior lights such as map or dome lights. Ensure headlights are properly aligned. Adding extra weight to the trunk to increase traction may affect headlight alignment.

- Check the battery to ensure proper fluid levels, connections are tight and cables and cable ends are not corroded.

All-season radials will provide some degree of traction; however, tires with snow tread are better. Studded snow tires are best but have limited use and should be used only when the road is packed with snow or ice.

- Check the heater and defroster for proper working order.

- Check wiper blades. Wipers designed for winter use help prevent them from icing.

- Check the windshield washer to ensure the washer motor is working and the nozzles are properly aligned.

- Check the exhaust system for leaks. Any evidence of fumes may indicate carbon monoxide is present. Replace a faulty exhaust or tighten to stop leaking.

- Check the engine thermostat to ensure it's working properly.

- Check the radio, as

It's also a good idea to carry some survival items in your vehicle. Some items that might come in handy should you become stranded include a shovel, traction mats, flashlight, tow chain or strap, tool kit, first aid kit, flares, dry sand, tire chains, sleeping bags or blankets, ice scraper, candles and matches.

Periodically recheck your vehicle to ensure it is properly maintained. If you're mechanically challenged, have a qualified mechanic complete the work that is beyond your abilities. When traveling in extreme conditions, you may have to depend on your vehicle for survival. Don't let your negligence be the reason it lets you down.

Editor's note: This story was compiled from information provided by the Public Safety Business Center, Fort Bragg, N.C.

THE SILENT DEATH

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The children ran into the living room to kiss their parents good night. They had already eaten and taken their baths. Now they were ready for bed. Mom and dad are also tired from the day's activities and are not far behind. Unfortunately, no one in this family realizes they are saying good night to each other for the last time. Tragically, this is their eternal sleep. Death does not come at the hand of an intruder or the flames and smoke of a fire, but by an equally deadly and silent killer – carbon monoxide.

This is a familiar scenario every year as the weather cools down. Because of a faulty home heating system, a family dies in their sleep—victims of carbon monoxide poisoning.

What is CO?

Carbon monoxide is a poisonous, colorless, odorless

and tasteless gas. It is produced as a result of the incomplete burning of natural gas and other carbon-containing materials such as kerosene, oil, propane, coal, gasoline and wood. At high concentration levels, CO can kill an individual in minutes. When breathed into the body, CO enters the blood and

deprives the heart, brain and other vital organs of oxygen.

What are the signs?

Low levels of CO can result in shortness of breath, mild headaches and nausea. These symptoms are often confused with food poisoning, influenza and other illnesses. At moderate

levels, individuals exposed to CO may experience tightness across the chest, severe headaches, dizziness, drowsiness and nausea. Prolonged or high exposures may result in vomiting, confusion, muscle weakness and collapse. While the effects of CO vary from person to person, people with heart or lung disease, elevated CO blood levels (smokers), the elderly, young children and fetuses are the most susceptible.

- Never sleep in a room with an unvented fuel-burning space heater.
- Never use a gas oven to heat your home—even for a short period of time.
- Never idle your vehicle inside your garage—even if you have the door opened. Doing so can allow CO to build up and enter your home. Also, be sure not to operate other devices powered by combustion engines such

a victim of CO poisoning. The physician can verify any CO poisoning by a blood test.

About those CO detectors

The EPA advises against being lulled into a false sense of security because you have installed a CO detector, as they are not considered as reliable as smoke detectors. According to the EPA, while various types of laboratory-tested detectors are

“ When **BREATHED** into the body, **CO ENTERS** the blood and **DEPRIVES** the heart, brain and other **VITAL ORGANS** of **OXYGEN.** ”

What can you do?

To reduce the chances of CO poisoning, take the following precautions:

- Have your fuel-burning appliances such as furnaces, water heaters, ranges, ovens, dryers, space heaters, fireplaces and wood stoves inspected and serviced by a trained professional before the onset of cooler temperatures.
- Purchase appliances that vent fumes to the outside of your home. Have those appliances installed and maintained by professionals. Ensure you read, understand and follow the safety precautions for each of these appliances.

as generators, chain saws, lawn mowers, etc., in an enclosed space.

Treating an exposure

According to the Environmental Protection Agency's Web site, people who experience CO poisoning symptoms should take the following steps:

- Get fresh air immediately. Open all doors and windows to allow for ventilation, turn off the combustion appliance or device and leave your house.
- Go to an emergency room for treatment. Tell the attending physician you believe you are

available on the market today, they should never be considered as a replacement for properly using and maintaining fuel-burning appliances. If you decide to purchase a CO detector, use resources such as the American Gas Association or *Consumer Reports* to make an informed decision and be sure to look for the Underwriters Laboratories certification when you buy. For more information, visit the EPA Web site at <http://www.epa.gov> or the Occupational Safety and Health Administration Web site at <http://www.osha.gov>. ◀

SUAS AIRCREW TRAINING

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The RQ-11 Raven Small Unmanned Aircraft System is a tremendous asset over the battlefield. However, the Raven SUAS occasionally suffers from loss of link, sporadic signal interference, loss of communication feed or loss of live video link. When this happens, the Raven should come back home because the system is programmed to return to rally. However, due to interference, that's not always the case. Lost aircraft degrade combat power, and missions to recover them can interrupt combat operations, drain critical resources and expose Soldiers to additional risk.

Raven operators have two tactics, techniques and procedures to reduce the incidence of link loss: key their global positioning system before flight and replace the GPS batteries quarterly. The biggest key to other link loss conditions are vigilance and situational awareness. Operators should monitor their signal strength and video for any degradation, as continued flight in a degraded mode can adversely affect the operator's ability to recover the aircraft. In addition, reacting to the situation in an untimely manner can also result in loss of aircraft.

Before flight, operators should ensure rally waypoint coordinates and altitudes are correctly loaded. Additionally, operators should ensure the tail boom is fully seated to reduce the chance of a weak radio signal. Operators also should make sure the magnetic compass and altimeter are calibrated and operating properly to aid in dead reckoning in case of GPS loss. Finally, operators should ensure air vehicles and ground control

station/ground control unit batteries are fully charged. If a battery swap is required, it's important that the fully charged battery is connected and the voltage is increasing before disconnecting the low battery.

Operators should set up the GCS/GCU in a location that will afford the best line of sight for the entire mission. Operators should ensure higher headquarters has coordinated SUAS operations so there is only one operator on any given channel.

If loss of link of any type is encountered, follow the proper emergency procedures for the link that is lost. Also, ensure all pertinent data (video, screen capture and mission data) are captured for investigation and recovery operations. Sometimes all the UAS requires is to command a climb. Refer to Aviation Safety Action

Message RQ-11-07-ASAM-01, DTG 082030Z MAR 07. This ASAM includes a required addendum available at <https://asmprd.redstone.army.mil>.

Operators should understand the wind limitations, know how to determine when there are high winds and ensure those winds don't exceed the limitations listed in the operator's manual during the mission. If the operator is unable to maintain safe control of the aircraft or winds exceed the limitation, the operator should bring the air vehicle home and land.

Master trainers should emphasize operators use proper Raven emergency procedures, site survey/setup, principles of line of site and troubleshooting procedures. The minimum crew to operate a SUAS is one TRADOC-approved school trained operator and an untrained

“Lost aircraft **DEGRADE** combat power, and missions to **RECOVER** them can **INTERRUPT** combat operations, drain critical resources and **EXPOSE SOLDIERS** to additional **RISK**.”

assistant. It is strongly recommended both operators are qualified and current to ensure the safe operation of the Raven.

Training Circular 1-611, *Small Unmanned Aircraft System Aircrew Training Manual*, outlines the SUAS aircrew training program. The key to a successful training program is the master trainer. The MT is the commander's designated representative for SUAS operations. He manages the overall aircrew training program and ensures operators are trained to standard, records are in order and operator currency is maintained.◀



FOD PREVENTION

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Foreign object damage is a constant hazard to Army aircrew members and one that can increase the likelihood of accidents, possibly resulting in aircraft damage, injuries and/or fatalities.

Foreign object debris is created from an endless variety of sources, including dropped parts, tools, trash, deteriorating pavement and other extraneous material

that could interfere with aircraft operations. Army Aviation is greatly concerned about this matter. The U.S. Army Combat Readiness/Safety Center Air Task Force recently conducted research on all FOD incidents from fiscal 2002 through 2006. The analysis showed 87 aircraft were damaged, of which:

- 41 were located in CONUS.
- 51 were H-60 type.
- 30 instances were

a result of debris blown up from the ground.

- 20 were inside the engine from an unknown source.
- 17 were due to tools or maintenance materials left in the aircraft.
- 67 accidents resulted from failure to keep areas clean or account for materials.

We determined FOD costs have increased two-and-

a-half to three times during the previous two years. From fiscal 2002 to 2004, FOD costs were approximately \$1 million per year. In 2005, FOD costs increased to about \$3 million, and in 2006, \$2.5 million.

What is the reason for all these incidents? Human factors appear to be the primary root cause. Maintenance personnel are not accounting for tools, parts or debris created during maintenance operations. Some reports indicate Soldiers are not properly maintaining landing zones. We need to remind aircrews to conduct FOD

walks and secure all materials on the flight line. All aircraft components must be secured and/or stowed properly.

We have developed two tools to assist aviation units with their FOD prevention programs. First, a FOD management audit tool template that Soldiers can modify to reflect a unit's unique circumstances and use to check their FOD prevention programs. Second, there is a Microsoft Office Excel®-based hazard-tracking system template that Soldiers can modify to reflect a unit's needs and track FOD hazards. Soldiers can also use the

hazard-tracking template to track FOD trends within their units.

The templates aren't mandatory for your unit's use; however, they are available to assist you. Consider these tools a 90-percent starting solution, and tailor them to your unique situation. If the template's information is not applicable to your unit, delete it. Likewise, if you need to add information or expand it, you are encouraged to do so. For more information on the FOD study and unit FOD prevention management, go to the USACRC Air Task Force Web page resources area

(<https://crcapps2.crc.army.mil/atf/resources.asp>). Soldiers need an Army Knowledge Online account to enter the area.

Most FOD accidents are preventable. It's true that occasionally a materiel failure results in an engine ingesting parts of the aircraft, but far more often someone, somewhere simply did something or failed to do something and FOD was the result. Everybody in the unit must be on the lookout and take responsibility for removing hazards that can cause FOD. FOD is everybody's business.◀



Riding Safely Into Fall

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One of the most beautiful times of the year to ride is during the fall as the colors reach their full brilliance. However, despite the season's beauty, fall can be an especially dangerous time for riders. With days getting shorter and temperatures falling, motorcyclists need to adjust their riding techniques accordingly.

See and be seen

As the days shorten, you'll be spending more time riding in the dark. While you'll be able to enjoy some beautiful sunrises and sunsets as you ride to and from work, you'll also have to deal with the sun's glare. That glare, especially when the sun is low on the horizon, can make it hard for drivers to see you or you to see the road. You have probably experienced this many times in a car. Despite leaning your head back, pulling down the sun visor and wearing your sunglasses, you're still partially blinded by the glare.

This problem can be worse for

motorcyclists. Even if your helmet has a visor or tinted shield to reduce the glare, you'll still have problems seeing oncoming traffic. If you can't reduce the glare, you'll have to hold your head so you can see the road while trying to keep the sun out of your eyes. This usually means riding with your head in an awkward, tucked position.

To be seen, you need to position yourself in your lane where you'll be as visible as possible to oncoming traffic. This is particularly important when approaching intersections, where the bottom-line rule is to ALWAYS assume someone will pull out in front of you. You need to prepare yourself for that by adjusting your speed accordingly, being ready to maneuver quickly and always leaving yourself a way out. While these tips apply year round, they're especially important in the fall when the sun's glare makes it harder for others to see you during sunrise and sunset.

Slip-sliding away

Falling leaves present their own

hazards. Wet leaves reduce traction and can make riding to work or taking weekend trips on twisty, two-lane roads more dangerous. Smart riders adjust their speed going into curves and look well ahead to choose the best line to avoid any wet, slick leaves. As temperatures drop, smart riders will be on the lookout for ice in shaded curves, where the lack of sunlight has kept the ice from melting. Whether you ride in the Smoky Mountains, Cascade Mountains, Adirondacks or the foothills of the Alps, it's up to you to be aware of the road conditions before you ride. Every morning, I check the weather, dress accordingly and mentally prepare myself before starting my motorcycle.

Speaking of dressing for the ride, there's nothing worse than having cold hands and feet. Not only is being cold uncomfortable, it can impair your ability to control your motorcycle. Whenever my hands begin to feel a slight chill, I begin adding layers of clothing. I put my summer gloves away and wear my

winter set without the liner. When my hands start feeling cold again, I add the liners and I'm good until the spring. I do the same thing with my jacket and pants. Because my boots provide excellent protection from the

spilled diesel fuel until it was too late to avoid it. Luckily for him, he was wearing the appropriate personal protective gear and only suffered a broken left arm and some ruffled pride. Regardless your level of riding experience, being cold and not having your head in the game can bite you.

When the riding season ends, you'll definitely want to protect your motorcycle by properly winterizing and storing it. Some of you will put up your bikes in November, so now is the time to start thinking about the proper storage techniques. Your owner's manual, coupled with the T-CLOCS

- Follow the instructions in your owner's manual to disconnect and remove the battery.
- Plug the exhaust and air cleaner openings to keep out any critters.
- Make sure you conspicuously mark any plugs you install so you don't embarrass yourself in the spring with a motorcycle that won't start.
- Use a cover that will breathe, such as light canvas, to protect your motorcycle. A plastic cover can create condensation and cause rust.
- Attach a check sheet to the throttle or make a note in your owner's manual to remind you of what you did when you stored your motorcycle.

“Wet **LEAVES** reduce traction and can **MAKE RIDING** to work or taking weekend **TRIPS** on twisty, two-lane roads more **DANGEROUS.**”

elements, I just wear thicker socks in the late fall and early winter.

The cold not only affects your body, it can also affect your ability to make good decisions. A friend with many years' riding experience crashed during an early winter morning when he failed to recognize slippery road conditions ahead of him on an exit ramp. Being cold, he was less alert to dangers and didn't spot the

(Tires, Controls, Lights, Oil, Chassis and Stand) inspection checklist, will guide you through the proper steps. For easy reference, here are some tips to help your bike survive its winter hibernation:

- Change the oil.
- Fill the fuel tank and add fuel stabilizer.
- Properly inflate the tires.
- Wash and wax the painted and chromed surfaces.

Winter—and the snowplow that buried your driveway with two hour's worth of snow to shovel—will soon be gone. By following the steps in your owner's manual, T-CLOCS checklist and the check sheet you made, you'll save money on maintenance costs and get on the road quicker in the spring.

Live to ride and ride safe! ◀

Stay Alert, Stay Alive

1LT ERIK JOHNSON
Indiana Army National Guard

Unit commanders and their subordinate leaders naturally want to prepare Soldiers to a combat proficiency as near as possible to that of the combat veteran. This can be accomplished only through rigorous, realistic combat training. As part of that training, leadership must address one of the great challenges to small unit success in a combat zone—sleep.

In combat, as well as in combat training, the directions leaders give should be simple, clear and complete. However, they must recognize that if Soldiers are tired, they might have to repeat those directions and double-check to ensure Soldiers follow their instructions. At the same time, leaders will also eventually require sleep, and they must take time for rest too.

We can hardly expect another “Christmas truce” in contemporary warfare, and we can’t call a “timeout” with an enemy. Unfortunately, the reality of modern warfare is its characteristic 24-hour cycle. Enemies can attack at any moment, day or night. Therefore, Soldiers must be on guard every waking moment. After a while, this becomes exhausting. And once exhausted, Soldiers become more vulnerable to enemy actions.

As a leader, be especially attuned to Soldiers who show an inability to concentrate, perform complex operations,

understand instructions or clearly remember events. These Soldiers could very well be sleep deprived. While no Soldier in combat can expect a normal sleep schedule, there are limits to what the body can tolerate over a prolonged period.

Consider the human need for sleep in all training and combat plans. Encourage sleeping when the opportunity arises. Severe problems develop after several days if Soldiers cannot get at least four hours of sleep every day. But even this is a much abbreviated sleep plan and cannot be effectively sustained for weeks on end.

The best countermeasure to an abbreviated sleep plan is taking naps at every opportunity, even for brief periods. Remember, falling asleep quickly and waking up quickly and alert—necessary components of Soldiering in combat—are skills that will improve with practice. So, by all means, practice them!

But the commander’s responsibility to develop a sleep plan remains. Battle conditions

will impose constraints on any ideal notion of a sleep plan. However, the commander can make this job easier if he integrates one critical concept into his training scheme: a rigorous program of company-level cross-training.

The commander will find making a reasonable sleep plan is easier if he has cross-trained his subordinates. This technique may be resisted by those Soldiers disdainful of other specialties, uninterested in

any other work but their own or too lazy to want to learn anything new. However, this resistance must be overcome.

Keep this in mind: many units may never have enough members to fully staff two or three shifts for every duty position. Therefore, a need exists to have enough people cross-trained to allow the primary duty Soldier to sleep while the secondarily trained (read cross-trained) Soldier performs the job in his absence.

This technique of sleep management will also serve to make productive use of the down time Soldiers may experience when their primary section is not working. To explain, once the Soldier of a certain section has been cross-trained to a secondary section, his NCO can coordinate with another NCO in the Soldier’s secondary section to gainfully employ him during a spate of down time. As rare a circumstance as this might be in a combat zone, leaders should address the issue proactively. Therefore, the NCO in-country should seek to take advantage of this downtime, especially when the other section

has a Soldier needing relief. But, again, without cross-training, this system of sleep management is less effective than it might otherwise be.

Thinking and reasoning abilities suffer in the Soldier who is deprived of sleep. In the wrong situation, this deprivation could cause catastrophic damage to a unit in the field. Therefore, leaders must take actions in training and combat to reduce the rate of decline in their Soldiers’ combat proficiency due to sleep loss. Always ensure Soldiers get as much sleep as the tactical situation permits. When preparing for combat operations, remember to train—and sleep—as you fight. ◀

TRAINING ABOVE AND BEYOND

BRUCE WILLIAMS
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The mission of today’s Army National Guard and Army Reserve safety officers requires safety training above and beyond the norm. Safety officers are routinely deployed with their units and are being tasked with increasingly greater safety responsibilities. As safety advisers to their commanders, additional duty safety officers must have the prerequisite safety knowledge to enhance the unit’s accident prevention initiatives and facilitate the integration of composite risk management needs.

To help fulfill those needs, 21 Guardsmen and Reservists recently

participated in the Ground Safety Officer Course at the U.S. Army Combat Readiness/Safety Center. The students were the first to graduate from the class.

The Ground Safety Officer Course produces the skills necessary to establish mission-focused, safety-qualified additional duty safety officers and safety NCOs for the ARNG and USAR. The course curriculum includes training in CRM, explosives safety management, accident investigation and reporting, range safety and OSHA 501. Upon completion of training, ARNG and USAR students receive an Additional Duty Skill Identifier.

The training is available as a six-week

resident course or two-year phased training. Students must complete a series of prerequisite online courses before attending the six-week resident training. The training encompasses four phases that must be completed over a two-year period. The first and third phases are online prerequisite courses. The second and fourth phases consist of 13 days of resident training.

For more information regarding ground safety officer training, contact the Ground Safety Officer Course, U.S. Army Combat Readiness/Safety Center at (334) 255-0247 or DSN 558-0247. To apply for the Ground Safety Officer Course, U.S. Army Reserve personnel should contact the USAR Safety Office at (404) 464-8841, while U.S. Army Reserve National Guard personnel should contact the ARNG Safety Office at (703) 607-7349 or DSN 327-7349. ◀



Inside the Wire

U.S. ARMY COMBAT READINESS/SAFETY CENTER
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In the Iraq and Afghanistan combat theaters, our units are faced with missions so challenging that success might seem impossible. Yet the great leaders and Soldiers of our Army step up and meet these missions every day. Leaders pour out their best to ensure they identify every risk, account for every contingency and address every possible enemy action in the planning, while Soldiers do their best to ensure they are vigilant, alert and represent all that is right about our Army.

In the safety community, and especially at the U.S. Army Combat Readiness/Safety Center, we have come to believe most units seem to do the hard things well. However, the easy things—the low-risk missions, the things that happen inside the wire—seem to lead us to disaster. Outside the wire, when all our senses are alert, there isn't a force that can defeat us. But inside the wire,

where the risks and threats are low, we let our guard down. We accept the routine and don't apply the principles of composite risk management to the everyday things that jump up and bite us in ways that we don't expect.

The bottom line is that when a unit focuses on a mission with all the leadership and brain power available, the mission goes as planned, the risks are

minimized and success is achieved. Unfortunately, recent accidents indicate that when the mission is more routine—when it's the same thing, different day, or when everyone takes for granted that everything will be fine—tragedy strikes and we lose Soldiers from our formations. A recent accident inside a forward operating base is the perfect example.

The accident sequence

A transportation company was given the challenge of transporting concrete barriers to a strategically important location to erect a barrier between hostile factions of the populace. Every time the trucks left the FOB, they faced the challenges of improvised explosive devices, small arms fire, rocket-propelled grenades and car bombs. The chain of command identified these risks and used all of its resources to ensure mission accomplishment. They did it well and pushed mission accomplishment to the limit. Unfortunately, in the preparation for these missions each day outside the wire, they failed to see the risks that they faced inside the wire.

In order to prepare the unit for success on the missions outside the wire, the barriers had to be loaded and the trucks prepositioned for the nightly mission to deliver them to the engineers who would emplace them. Because the unit was focused on the mission outside the wire, limited resources were assigned to the daily preparation. A single NCO was assigned to supervise the preparation and loading of up to 20 vehicles for movement. The 20-plus privates and specialists he was challenged to supervise were all young,

eager and willing, but they lacked the experience to execute the missions without appropriate supervision. Their training was limited and their driving experience was often limited to Advanced Individual Training and a few turns around the FOB. The two Soldiers involved in this particular accident arrived in theater as individual replacements and had been in the unit for less than three weeks. They were motivated and wanted to accomplish the mission, but they were not experienced enough to recognize the risks associated with the daily routine.

The Palletized Loading System truck and trailer being used by the unit were only capable of carrying two barriers—one on the truck and one on the trailer, according to the manuals. The chain of command made a decision to carry two on each and overload the vehicles by 6,000 pounds to accomplish the

mission. While this decision was supportable based on mission assessment, the young Soldiers who drove the vehicles inside the FOB did not realize the changes to the handling characteristics of the truck. This led to the driver not anticipating the altered stopping and cornering characteristics of the vehicle. As he was driving, he failed to negotiate a 45-degree turn and the vehicle overturned.

The driver and assistant driver demonstrated individual indiscipline by driving too fast for the conditions and exceeding the posted speed limit. They also failed to wear the advanced seat belts provided in the vehicle. As a result, when the vehicle overturned, the assistant driver was ejected and crushed to death as it rolled over him. The question leaders have to address is what allowed these Soldiers' indiscipline to lead to this accident?



Why the accident happened

The chain of command placed so much emphasis on the mission outside the wire that they failed to apply CRM to the preparation for the mission inside the FOB. A single NCO was required to oversee not only the Preventive Maintenance Checks and Services of the 20 vehicles by 20 young Soldiers, but the loading and positioning of the vehicles for the night crew who would drive the vehicles to the mission location. He was faced with a challenge beyond his

control. Eventually, single vehicles with two young Soldiers in the cab were moving around the FOB, fully loaded and without supervision. One of them became involved in an accident. The chain of command did not put the controls in place to ensure that the young, eager Soldiers of the unit were able to accomplish the mission without exceeding their limitations.

Using the tools for success

How do we avoid this situation and the potential loss? We must

“The chain of command **PLACED** so much **EMPHASIS** on the mission **OUTSIDE** the wire that they **failed** to **APPLY CRM** to the preparation for the mission **INSIDE THE FOB.**”

address the low-risk, routine mission the same way we evaluate what we perceive to be high-risk missions. We must apply the same concepts of CRM to the preparation as to the mission. Leaders must ask, “Where is the most likely point of failure? Do my subordinate leaders have the tools and the span of control that will lead to success? Am I putting too much emphasis on the tactical risk and not enough on the accidental risk?”

The challenges our units face are significant. The combat

environment our Soldiers work in every day presents challenges no prior force has ever faced. Leaders must address the risks associated with the missions outside the wire to ensure mission accomplishment—our future depends on it. Leaders must also remember that what happens inside the wire presents its own challenges that must be addressed to prevent unnecessary loss to our force. Army Safe is Army Strong! ◀

HEALING WOUNDED WARRIORS



As in past wars, Soldiers returning from combat today are subject to suffering both physically and psychologically from the rigors of battle. The emotionally jarring experiences of war can lead to Post Traumatic Stress Disorder, while the physically jarring experiences of battle can lead to mild Traumatic Brain Injury. Recognizing

the cost to Soldiers, their Families and the service, the Army recently launched an online program to help identify the symptoms of PTSD and mild TBI. Available on the Army Knowledge Online Web site at www.us.army.mil, the program provides two versions—one for leaders to use while training their Soldiers and a separate version for use by family readiness groups. Symptoms common

to PTSD and TBI include difficulty concentrating, memory problems and irritability. Symptoms specific to TBI include headaches, dizziness and balance problems. Soldiers suffering PTSD may also experience nightmares and increasing anxiety. In the past, Soldiers were often reluctant to seek help for these problems for fear it would damage their careers. Consequently, not

getting help sometimes led to the problems worsening. The AKO online training is a step in reshaping the Army's culture to encourage Soldiers to get the help they need, according to COL Elspeth Ritchie, a psychiatry consultant to the Surgeon General of the Army. Healing wounded warriors is another way for the Army to invest in its most important resource—Soldiers. ◀

ASO Shares Secrets of Success

PAULA ALLMAN
U.S. Army Combat Readiness/Safety Center
Fort Rucker, Ala.

CW5 Mark Grapin, a Kentucky National Guardsman, has been awarded the Director of Army Safety Composite Risk Management and the James H. McClellan Aviation Safety awards for his work as the brigade aviation safety officer for the 63rd Aviation Group, Udairi Army Airfield, Kuwait.

Grapin has lived his state's motto, "United We Stand, Divided We Fall," through the challenges of the conflict in the Middle East. Although assigned as the brigade ASO for the 63rd Aviation Group, Grapin touched more than those wearing Army green. Reaching across service lines to his partners in the Coalition Forces Land Component Command, he took responsibility for aviation safety at the airfield, group

and theater level. He also expanded safety concerns to include ground accidents and even those off-duty accidents that touch Soldiers and their Families. The 27-year veteran aviator sees his role to protect Soldiers as complementing his commander's efforts. As a safety officer, he believes in asking the tough question of "how to fight safe" and understanding fighting safe is important to fighting smart.

There were many issues to overcome as Grapin worked at Udairi with his Air Force, Marine, Navy and Coast Guard counterparts. Part of the challenge was language—trying to understand the buzz words used by each service. Finding a common mode of communication linking safety personnel between the service branches was critical. Fortunately, the Army already had a built-in answer. The

Army's Aviation Safety Officer e-mail list server reached across service boundaries to get safety specialists talking to each other and sharing ideas. The list provided an ideal "meeting place" where Grapin developed contacts and working relationships even before he arrived in Kuwait.

Grapin's approach worked and he became the hub between the services after arriving in Udairi. Because Army tours in theater are longer than those of the other services, it made sense a Soldier could offer better continuity to the joint

service safety programs there. Grapin accepted that challenge, supporting CFLCC safety efforts by authoring five theater-level, inter-service safety and standardization publications. Additionally, he helped develop ground safety and even off-duty programs. Recognizing that accident reporting is essential to recognizing trends, he worked to improve the process so lessons learned wouldn't be lost.

Fundamental to his success, he explained, was having commanders clearly define their missions and share that

information across service lines as safety plans were being developed. For example, an artillery unit could safely conduct a fire mission just as an Air Force fighter unit could safely execute a ground attack mission. However, if both missions occurred at the same time over the same target, what were individually low-risk events would be extremely dangerous. Grapin understood the light illuminating risks had to have a "purple" tint.

"Connectivity"—finding out where U.S. forces were operating and developing effective



COL Benjamin F. Adams III (left), 63rd Theater Aviation Brigade Commander, presents CW5 Mark Grapin the DASAF Composite Risk Management Award at the annual state aviation safety and standardization stand-down in Frankfort, Ky.



GEN Richard A. Cody, Vice Chief of Staff, Army, presents CW5 Mark Grapin the James H. McClellan Aviation Safety Award at the 2007 AAAA Annual Convention in Atlanta. Pictured above are (from left): BG (Ret) Thomas J. Konitzer, BG William H. Forrester, Cody, Grapin, MG Virgil L. Packett II and CW5 Randall Gant. (Photo Credit: AAPI Photo by Rene Bidez)



“Mentor others. **PASS ON** your **LESSONS LEARNED** so others don't have to **LEARN** them the **HARD WAY.**”

communication—was essential. As multi-service operations were planned, liaison officers used e-mails to keep everyone on the same sheet of music.

Grapin took the Army's CRM principles and blended them across service lines to overspread the battlefield. Doing so enhanced not only the safety posture of

Army Aviation in the U.S. Central Command area of responsibility, but also that of other service flight safety programs in theater. His demonstrated vision, leadership and technical skills shaped safety doctrine at various complex levels spanning

two continents and earned him the honor of receiving both of these distinguished awards.

Editor's note: The DASAF CRM Award is presented annually by the Director

of Army Safety. The James H. McClellan Aviation Safety Award is an Army Aviation Association of America National Award presented at the AAAA Annual Convention.

TIPS FOR SUCCESS

CW5 MARK W. GRAPIN
Kentucky Army National Guard

Because being successful with safety programs is no accident, CW5

Mark Grapin offers the following suggestions to help make those programs effective:

- **Walk around.** Do you know what's in the hazardous materials locker or hanging in the ALSE lockers? Could you complete your Semiannual Aviation Accident Prevention Checklist with confidence without ever leaving your desk? Be active in your organization to head off operational hazard reports.
- **Mentor others.** Pass on your lessons learned so others don't have to learn them the hard way.
- **Standardize your programs.** This will lift

rocks out of the rucksacks of every operations officer, commander and safety officer in the echelons below you.

- **Go for a ride.** Take a ride with the new and old drivers to see if they wear their seat belts, reach for their identification cards and dim their lights before going through the entry control point. If the old guys do it right, it sets a model for the news kids in the command.

- **Make some noise when you catch someone being safe.** Put a bunch of CW5 coins in your pocket and keep some DA Forms 1119-1, *United States Army Certificate of Achievement in Safety*, in your wallet. Pass them out when appropriate—but don't cheapen them.

- **Make some things "sergeant's" business.**

Not everything has to hit the HAZLOG. Let senior NCOs do their jobs, correcting errant safety behavior at their discretion and in their manner.

- **Record the reward.** Find the master driver trainer and get that entry on the DA Form 348. Sit down in front of the individual aircrew training folder and record the safety award on the 7122. Get good at filling out DA Forms 638. Nothing beats hanging a driver's badge on a kid who's been busting his butt tugging aircraft across a flightline for a year without so much as scraping the green paint.

- **Get the 0-6 to sign some awards.** The full-bird's signature is worth five points at a promotion board.

- **Make your files**

magnificent. The better you are at managing safety files, the easier the ARMS will go—which will make things easier for the standards and maintenance guys, along with the training manager in the S3 shop. A safe program is standardized, and a standardized program is safe.

- **Hit a home run.** Look up what it takes to earn a meritorious service medal in your job and do it. Always have another home run project on the back burner, ready to pull up at a moment's notice, and keep working on it.

- **Love safety.** If you don't love safety, do something excellent by getting out of it.

- **Have the courage of your convictions.** Stand your ground, but don't push other people away or be disrespectful.

- **It's OK to cry at funerals.**

Remember what the sting of those tears feels like.

- **Shake the hand of a greasy mechanic.** Tell him how much you appreciate what he's doing. Tell your Safety NCOs you see them as a partner in your effort. Respect the contractor and civilian supporting you.

- **Carry a 3-by-5 card in your pocket or wallet.** On one side, have bullets for a hip-pocket safety briefing you'd like to give. On the other side, have a prayer or blessing jotted down from your favorite scripture—maybe something from Isaiah or I or II Corinthians. You never know when you'll need one or the other side of that card.

- **Learn how to type and spell.** Your credibility is your stock in trade. If you can't get the "e" in the right place in "safety," why would anyone want to hear what you have to say about it?

- **Don't make up answers.**

The same response you gave as an "E-onederful" when you didn't know anything works just as well when you're a CW5 on the theater commander's staff. Say, "I don't know, sir, but I know where I can find out. Will you give me a moment to get that?"

- **Put it back better than you found it.** That not only goes for the vehicle you just drove, it goes for the pubs on your office shelf and the SOP you were supposed to update.

- **Don't throw sand in staff meetings.** Sometimes you may need to throw a dart—you'll know when it's the right place and time. Carefully pick your battles as you wage your war.

- **Train WHILE you fight.** Letting your "Fort Living Room" safety skills go to seed while you're in the "shooting gallery" will get you killed after you come back. <<

WATCHES AND RINGS

CW5 MARK W. GRAPIN
Kentucky Army National Guard

Wearing watches, rings or other jewelry while onboard aircraft is asking to leave a piece of yourself behind.

During a recent preflight inspection, a UH-60 aircrew member hooked his wedding band on the rain gutter above the pilot's door after retrieving the Pitot tube cover. This thin piece of aircraft sheet metal found its way between the crewmember's ring and finger—even though he was wearing gloves. The crewmember's finger was no match for the full weight of the rest of his body!

Recommendations

1. Maintainers. Empty or zip pockets and remove all watches, rings and necklaces before conducting any work on aircraft. A metal watch face or band, necklace or dog tags might provide a conduit

for electrical circuitry and could leave you with a nasty wrist or neck burn—and a grounded aircraft.

2. Quality Control Inspectors and Line Supervisors. Spot check your Soldiers for compliance during any maintenance on the flight line or hangar floor with the "no exception" policy to remove all jewelry all the time!

3. Aircrews. Follow the same guidance as maintainers. Clearly, gloves are no help in shielding your fingers from this hazard. Consider the practice of keeping your wedding band laced inside your watch band, and remove it before starting your preflight. Should you have to perform an emergency egress of the aircraft, every part of you should make it out safely! <<

Adapted from 07-005 Kentucky ARNG Safety Alert dated May 17, 2007.



The delicate skin structure of your hand is simply no match for your full body weight. Remember to remove all jewelry before boarding the aircraft.

TRIPS

It's Online for You!

DEREK KOVACS
U.S. Army Combat Readiness/Safety Center
Fort Rucker, Ala.

The Travel Risk Planning System, better known as TRiPS, is an online automated risk assessment tool specifically designed for personnel using their privately owned vehicles or motorcycles during pass, leave or TDY.

For fiscal 2006, Army personnel using TRiPS (formerly known as ASMIS-2) were 2.5 times less likely to have been involved in a fatal POV accident. Since the beginning of fiscal 2007, Army personnel have completed more than 598,500 Army TRiPS POV assessments. Because TRiPS has been effective in reducing Army fatalities, it has been adopted by all the military services.

The key to the program's success is the way it involves leaders with their Soldiers' pass, leave or TDY travel plans. The TRiPS program not only provides leaders with important information about their Soldiers' travel plans, it provides recommended actions to reduce hazards and also calculates the trip's overall risk. Armed with vital facts, leaders may then elect to approve or disapprove the online assessment. Taking into account the current high operating tempo, TRiPS provides leaders the information they need to draw intelligent conclusions and make valuable recommendations before approving a Soldier's request for leave or absence. This leader-to-

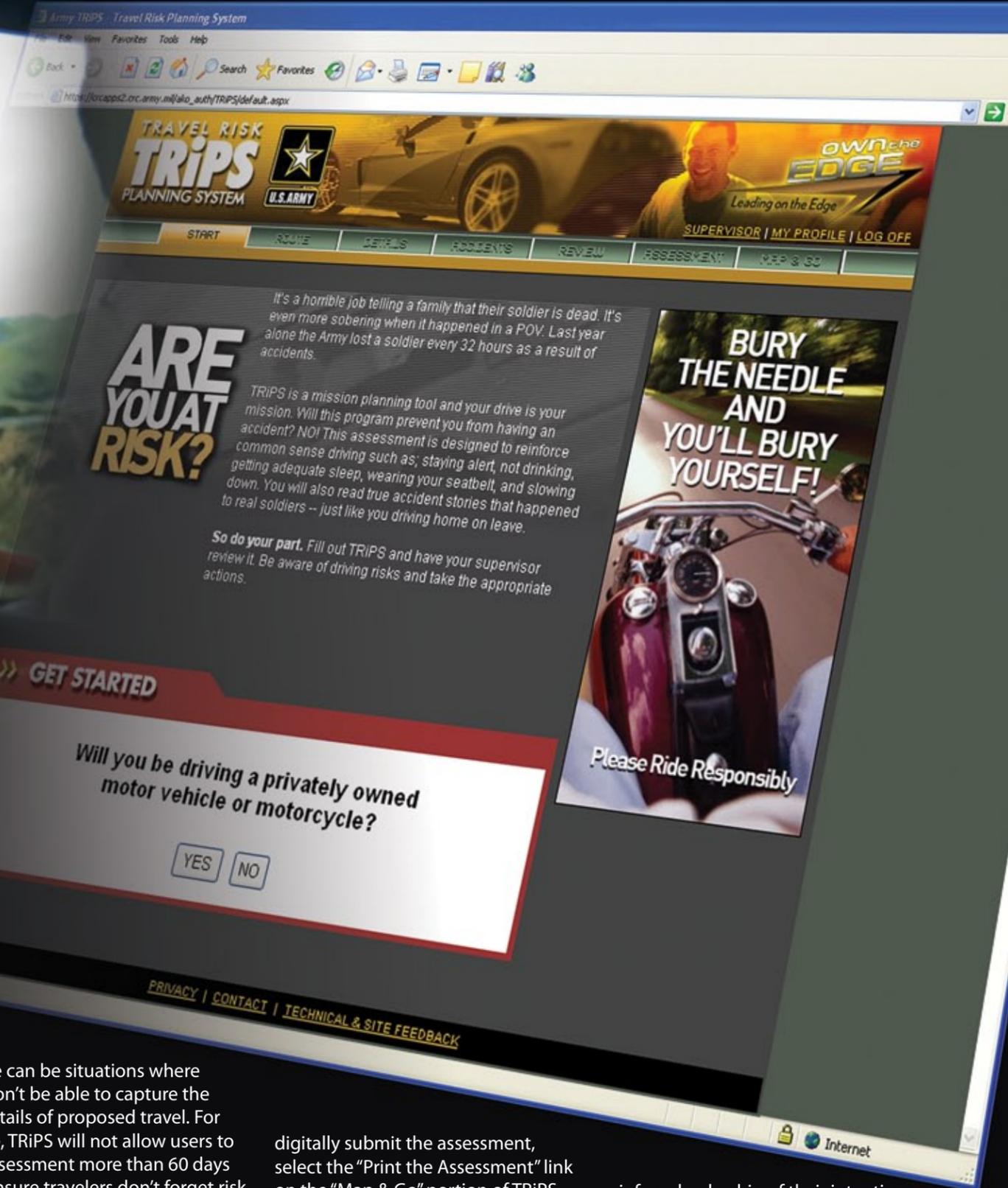
subordinate interaction, fostered by TRiPS, is crucial to the tool's success. How does TRiPS work? Users provide risk-related information, including the type of vehicle they are using, departure time, distance to travel, driver's age, driving

“The INTENT of TRiPS is to INVOLVE LEADERS in their Soldier's TRAVEL PLANS and give them an EFFECTIVE TOOL to PROTECT the Army's most valuable asset—IT'S PEOPLE.”

courses attended and seat belt use. Other information includes vehicle safety inspections, driver rest prior to travel, driver medication or alcohol use, checking weather forecasts, whether the driving will be during day or night, the type of road traveling on and planned rest stops. TRiPS also advises the user to be cautious when towing a trailer because a trailer affects the handling characteristics of the tow vehicle.

Based upon the selected parameters, TRiPS provides accident summaries reflecting similar travel information, a calculated risk level for the trip and recommendations to reduce hazards. Those recommendations may include being aware of the effect medications have on drivers and informing the chain of command of those effects, checking the weather before traveling and taking precautions for driving at night or on two-lane

roads. In addition, to prevent driver fatigue, the assessment may suggest periodic rest stops or sharing driving responsibilities. Users perform a final risk calculation based on the mitigation measures taken, and then the tool provides them with driving directions and a map. TRiPS enables users to electronically submit their assessments to their supervisors and also fill out a partially completed leave form.



There can be situations where TRiPS won't be able to capture the exact details of proposed travel. For example, TRiPS will not allow users to do an assessment more than 60 days out to ensure travelers don't forget risk reduction measures before traveling. However, TRiPS can be flexible. For example, Soldiers separating from the Army may need to complete a TRiPS assessment more than 60 days before their separation to have their leave approved. In such instances, Soldiers simply need to complete an assessment for a similar timeframe,

digitally submit the assessment, select the "Print the Assessment" link on the "Map & Go" portion of TRiPS, and then write in the changes and reasons for the deviation. Soldiers should clearly address this with their supervisors and complete a new, more accurate assessment closer to their actual travel date. Also, to avoid driver fatigue, additional drivers should complete a separate assessment for the same trip and

inform leadership of their intentions. TRiPS is not intended to replace the supervisor's role in approving leaves, nor should it become a check-the-block system to provide a paper trail after an accident. The intent of TRiPS is to involve leaders in their Soldier's travel plans and give them an effective tool to protect the Army's most valuable asset—it's people. ◀

TOSSING THE ULTIMATE FRISBEE

MAJ RICHARD ARNOLD
1st Battalion, 1-145th Aviation Regiment
Fort Rucker, Ala.



FYI

The "Ultimate" Pre-game Warm-up

- Take two laps around the playing field at a comfortable pace. Mix in some cuts, jogging backward and karaoke steps.
- Spend 10 minutes stretching out, working from your upper to lower extremities. Spend extra time on the hamstrings, groin and calf muscles.
- Spend five minutes throwing the disc with a team member. Start with short throws and gradually increase the distance. Make sure you practice different types of throws, including the forehand, flick and hammer.

The player looks to his left and sees a teammate in the clear. With a flick of the wrist, he tosses the Frisbee to his teammate, who deftly snatches it from the air. The receiver looks for an open teammate as opposing team members try to block him and any receivers downfield. He can't carry the Frisbee; he can only advance it by tossing it to a teammate. The pressure is on. With only 10 seconds to advance the Frisbee before having to turn over possession, he's got to act quickly. At the far end of the field is the goal. To win, his team must get the Frisbee to a receiver inside the end zone.

Ultimate Frisbee is the game of choice for many students attending the Aviation Captains' Career Course at Fort Rucker, Ala., and it's also gaining popularity at other installations and colleges nationwide. A combination of

soccer, basketball and American football, it's a welcome relief for students spending several weeks learning the Military Decision Making Process and doing computer exercises. However, relief can turn into several weeks of pain if a player suffers a pulled hamstring or torn anterior cruciate ligament. The secret to avoiding injuries is preparing yourself for the rigors of this game the same way you'd prepare equipment for deployment.

Conditioning and preparation

About 75 percent of Ultimate Frisbee injuries involve muscle damage, according to a University of Wisconsin health study published in SafetyLitSM, a safety-related Web site at <http://www.safetylit.org> provided by San Diego State University. The most common injuries, strained hamstrings, quadriceps, groins and

calves, can be prevented through proper preparation. Many of the injuries we see occur near the start of the course, so it's important to be in good physical condition before playing Ultimate Frisbee. The game requires speed, agility and endurance because you have to run patterns, make cuts to get open and jump higher than your opponent to get the disc. So, if you have weak ankles or knee problems, prepare yourself by wearing a sturdy brace or high-top cleats for support. I strongly recommend a good set of football or soccer cleats. Running shoes, unfortunately, don't provide the traction you need to keep from sliding and tearing muscles in your lower extremities.

Another great way to prevent injuries is good pre-game preparation. One of the first things to consider is the weather. If it's hot and humid, like most mornings at Fort Rucker, your preparation

begins the day before. Obviously, you want to drink plenty of fluids to ensure proper hydration and eat a decent carbohydrate and sodium-balanced meal. Also, don't forget foods rich in potassium can help prevent cramps. On cold days, not only are hydration and diet crucial, it's important to raise your heart rate and spend more time stretching. Cold muscles are more vulnerable to tearing, so make sure you warm up thoroughly. Prepare your upper body by spending at least five minutes practicing the different Frisbee throws, which will loosen your shoulder, arm and wrist muscles. Baseball and football players almost always loosen up in this fashion.

A little CRM, please

The other injuries I've seen were caused by accidents. Just as conditioning helps prevent muscle injuries, composite risk

management helps prevent accidents and the injuries they cause. For example, I'm not the youngest and most coordinated Ultimate Frisbee player, so I refrain from diving to make a play for the disc. I identified and assessed the hazards and made the decision to play the game within my limits. Also, if a teammate or opponent tends to play recklessly, I try to stay out of their "sphere of influence." I'd rather spend my time on the field having fun than on the sidelines nursing a twisted ankle.

With the proper preparation, Ultimate Frisbee can be a safe and

great workout. Just remember to prepare yourself by being in shape, having the proper equipment and warming up according to the weather conditions. Also, know your limits and avoid lunatics. Applying these simple principles to Ultimate Frisbee will keep you in the game and out of your troop medical clinic.◀

For more information on Ultimate Frisbee, check out the following Web site: <http://www.whatisultimate.com/>.



LOSS

AVIATION



CLASS A **A Model**
 The aircraft was ground taxiing when it entered an uncommanded left turn. The crew retarded power levers, but the main rotor blades flexed down and contacted and damaged the canopy, tail boom and pilot night vision system.

CLASS B
 The aircraft sustained damage after contacting electrical tower support wires during flight.



CLASS C **D Model**
 Upon returning from a daytime readiness level progression training flight, the aircrew was in the process of engine(s) shutdown. The pilot inadvertently retarded both engine control levers beyond ground position. The instructor pilot realized the ECLs went beyond ground and advanced them slightly forward to properly seat them in the ground position. The aircrew noticed the power turbine inlet temperature on the No. 1 engine had risen to 1,000 C for two to three seconds and the PTIT on the No. 2 engine had risen to 1,150 C for 18 seconds.

The aircraft was shut down and the No. 2 engine was replaced.

ARE YOU FOLLOWING THE REQUIRED PROCEDURES DETAILED IN THE AIRCRAFT OPERATOR'S MANUAL AND CHECKLIST?



CLASS A **H Model**
 The flight crew of a UH-1H was flying up a draw in the mountains at 60 knots and 350 above ground level when the aircraft struck a high set of wires and crashed. The aircraft was destroyed and two personnel received serious injuries and seven personnel received minor injuries.



CLASS A **A Model**
 During ground taxi, the aircraft's main rotor blades struck a stationary hoist.

CLASS C
 The aircrew inadvertently released the sling load (Bambi bucket) during flight.

DO YOU HAVE A CHECKS-AND-BALANCES SYSTEM OF PERFORMING TASKS WITH ANOTHER PERSON DOUBLE-CHECKING FOR VERIFICATION?

CLASS C **L Model**
 While descending from 8,000 feet mean sea level, Chalk 1 in a flight of two felt a bump in the flight controls and vibrations throughout the airframe. The pilot in command assessed that the aircraft was flyable and flew to the nearest forward operating base without further incident. A thorough inspection was performed, revealing damage to one main rotor blade, two tail rotor blades, the vertical fin and horizontal stabilator. The left-side APU door on the aircraft was missing.

UAS



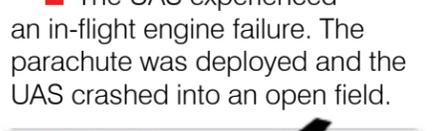
CLASS C
 The aerial vehicle operator lost link with the system while under the Tactical Automated Landing System, resulting in the UAS crashing.



CLASS B
 The UAS crashed shortly after takeoff, resulting in a total loss.

CLASS C
 The UAS descended shortly after takeoff, landing 100 feet from the launch site. Damage was reported to the payload and landing gear.

CLASS C
 The UAS experienced an in-flight engine failure. The parachute was deployed and the UAS crashed into an open field.



CLASS A
 The UAS lost GPS link with the ground control station and crashed, resulting in significant damage.

CLASS B
 The UAS descended and hit the ground when the crew lost link. The UAS landing gear was torn from the vehicle.



CLASS C
 The AVO lost signal with the Raven. Search efforts were unsuccessful.

CLASS C
 The UAS descended following a battery failure, resulting in a total loss.

CLASS C
 The UAS lost GPS link and crashed, resulting in a total loss.

GROUND



CLASS B
 A Soldier suffered a permanent partial disability after an M1A1 struck him.

CLASS B
 Two M2A3 Bradley Fighting Vehicles sustained engine and electronics damage when they became stuck while attempting to cross a creek.



CLASS A
 A Soldier died from injuries after she was pinned between an M985A2 HEMTT and a trailer while ground guiding.

ARMY AIRCRAFT LOSSES

FY02 to Present
thru August 22, 2007



AH-64A/D	12/55
U/MH-60A/L	9/26
C/MH-47	7/16
OH-58D	11/24

TOTAL 39/121

ARMY GROUND LOSSES

FY07
thru July 2007



AMV	22/20
ACV	13/7
PERSONNEL INJURY <small>includes weapons handling accidents</small>	46/44

FIRE/EXPLOSION 2/0

PROPERTY DAMAGE 1/0

TOTAL 84/71

CLASS B

Three Soldiers were injured when the light medium tactical vehicle they were riding in overturned when the driver swerved to avoid cattle in the road. Seat belt use was not reported.

DOES YOUR DRIVER'S TRAINING PROGRAM INCLUDE HANDS-ON TRAINING FOR REACTING TO A HAZARD OR EMERGENCY?

CLASS A

A Soldier was killed when the 5-yard front loader he was operating contacted an unmarked natural gas line, causing an explosion.



CLASS A

A Soldier was a passenger in a Pontiac Grand Am when it overturned on an interstate highway. The Soldier, who was sitting in the right-rear seat, was not wearing his seat belt and was ejected and killed.

CLASS B

A Soldier's left arm was crushed when it was trapped beneath his car during a vehicle rollover accident.



CLASS A

A Soldier was killed on his Suzuki GSX-R1000 sport bike when he entered the driveway to his residence and struck the side of the garage door. The Soldier had attended Motorcycle Safety Foundation training, was properly licensed and was wearing his helmet and personal protective equipment.

CLASS A

A Soldier was riding with a motorcycle club and operating

his Kawasaki ZX-12R above the posted speed limit when he lost control, crashed and suffered fatal injuries. The Soldier was wearing his helmet and PPE.

CLASS A

A Soldier was operating his BMW R1200 touring motorcycle on an interstate highway when he struck a car that pulled onto the interstate from the emergency lane. The Soldier who was thrown from his bike and later died at a hospital, was a certified MSF course instructor and was wearing his helmet and protective eyewear.

CLASS A

A Soldier was operating a friend's Kawasaki ZX-6R sport bike when he lost control in a curve, went into a ditch and struck a barbed wire fence. The Soldier, who had a DUI-restricted license and wasn't wearing his helmet or PPE, died.

CLASS A

A Soldier was operating on his Suzuki GSX-R1000 sport bike when he crested a hill and struck an oncoming vehicle. The Soldier completed MSF training and was wearing his helmet. Speed was a factor.

CLASS A

A Soldier stopped his Suzuki Hayabusa GSX1300R sport bike at an intersection and then rapidly accelerated after the light changed. The Soldier was killed when he attempted to move to the inside lane and collided with another vehicle. The Soldier was wearing his helmet and PPE.

CLASS A

A Soldier was operating a Suzuki Hayabusa GSX1300 sport bike when he lost control in a turn, struck a sign and was killed. He was wearing his PPE.

CLASS B

A Soldier was operating his Yamaha R6 sport bike when he was struck from behind by another vehicle and catapulted into the vehicle's windshield. The impact injured the Soldier's right foot, which had to be amputated.

PERSONNEL INJURY

CLASS A

A Soldier died while participating in the Warrior Leader Course-sponsored Land Navigation Course. The Soldier's death was determined to be heat related.

POV DRIVING LOSSES FY07

thru July 2007 Class A accidents/Soldiers killed

CARS	31/34
SUV/ JEEPS	15/12
TRUCKS	14/13
MOTORCYCLES	32/30
OTHER*	3/3

92 TOTAL DEATHS

FY06: 99 3 year average: 104

*Includes: vans and ATVs

WEAR YOUR SEAT BELTS!



A Soldier was killed when the Mitsubishi Eclipse he was driving on a rural road crashed for unknown reasons. Seat belt use was not reported.

WHAT DOES YOUR HEAT INJURY PREVENTION PLAN LOOK LIKE? HAVE YOU IDENTIFIED YOUR AT-RISK SOLDIERS AND PUT CONTROLS IN PLACE?

CLASS A

A Soldier died while participating in the land navigation exam portion of the WLC. The Soldier failed to report upon conclusion of the exercise. His body was located during search efforts. The Soldier's death was determined to be heat related.

CLASS A

A Soldier was participating in Combat Divers Qualification Course training when he submerged for unknown reasons. He was pulled from the water and transported to a medical center where he later died.

CLASS A

Three Soldiers were fishing at 1:30 a.m. when their canoe capsized. Two of the Soldiers were able to make it to shore. The third Soldier became fatigued and drowned. His body was found later. All three Soldiers had been drinking and none were wearing their personal floatation devices.

CLASS A

A Soldier, a civilian and another Soldier were in a rented rowboat when he stood up, lost his balance and fell overboard. The other Soldier attempted to reach him; however, the Soldier submerged. Although PFDs were available, the Soldiers did not wear them. Alcohol was reported as a contributing factor.

CLASS A

A Soldier jumped headfirst into the water and struck his head. Although other Soldiers immediately got him out of the water, he was unresponsive. The Soldier was medically evacuated to a local facility, where he was pronounced dead.

CLASS A

A Soldier and eight other Soldiers rented a pontoon boat and docked it at a public lake. When the Soldier failed to arrive back at the boat at the designated time, water patrol officers searched and found his body at another location on the lake. Alcohol was reported as a contributing factor.

CLASS A

A Soldier jumped from a rock ledge into a river and was unable to get out of the water. Although other Soldiers who were also swimming at the site attempted

to rescue him, the Soldier was caught by the undercurrent and drowned. Installation officials where the Soldiers were assigned had placed the swimming site off-limits.

CLASS A

A Soldier died from a head injury he received when a bicyclist knocked him down while he was jogging.

CLASS B

Six Soldiers were admitted for treatment for heat-related injuries they suffered while participating in a battalion-level 12-mile road march. Fifty Soldiers were reported to have suffered heat-related injuries during the march.

CLASS B

The tip of a Soldier's pinkie finger was amputated while guiding a stringer (a panel of portable bridge) into place with his hands.

CLASS B

A Soldier suffered a permanent partial disability when his privately owned .45-caliber weapon fell out of its holster and discharged a round into his finger. The finger was later amputated.

CLASS B

A Soldier slammed a HMMWV door on his finger, resulting in the amputation of his pinkie to the first knuckle.



'Tis the Season for Driving Safely



**ARMY SAFE
IS ARMY STRONG**



U.S. ARMY

ARMY STRONG.



U.S. ARMY COMBAT READINESS/SAFETY CENTER
<https://crc.army.mil>



With days getting shorter and temperatures falling, motorcyclists need to adjust their riding techniques accordingly.

HIT THE ROAD!

Seeing is Believing

To be seen, you need to position yourself in your lane where you'll be as visible as possible to oncoming traffic. This is particularly important when approaching intersections, where the bottom-line rule is to ALWAYS assume someone will pull out in front of you.

Make Like a Tree and...

Leaves on the road present their own hazards. Wet leaves reduce traction and can make riding on twisty, two-lane roads more dangerous. Look ahead and avoid any wet, slick leaves. As temperatures drop, be on the lookout for ice in shaded curves.

What Type of Dressing?

Not only is being cold uncomfortable, it can impair your ability to control your motorcycle. So start thinking about adding layers of clothing before you ride.



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