

ARMY GROUND RISK-MANAGEMENT INFORMATION

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Accountability & You



Countermeasure

CONTENTS

- 3** Why Accountability This Month?
- 6** Line of Duty Determinations: An Underused Tool
- 8** Reports of Survey
- 10** A Soldier's Last Ride
- 12** A Little Luck and a Little Learn
- 14** What's It's About Composite Risk Management
- 18** Investigator's Forum Execute COA 1. Any Questions?
- 20** The Importance of Firing-line Safeties
- 22** Additional Duty Safety Course Online Now!
- 23** Accident Briefs
- 24** Coming Soon

Top features



8



14



18



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Why Accountability This Month?

LTC CINDY GLEISBERG
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Soldiers and civilians at all levels must be held accountable for their actions or inactions that lead to accidents. The Army regulatory and statutory structure offers commanders many tools for dealing with damage to Government property or personal injury. This month's *Countermeasure* highlights ways leaders can motivate their subordinates to be more careful through the application of adverse actions to reckless individuals.

The Army Safety Campaign requires that leaders consider accountability for their units' accidents and that those actions be publicized. The need for Army-wide dissemination was recently articulated by a battalion commander. After reading a

string of e-mail messages about two units' actions—an adverse line of duty determination and financial liability under report of survey—the commander wrote:

“The problem is visibility. Here are two units with generally equal cause and

effects. These units are far distant from one another, but who knew what was happening within them? The net results are the same. Soldiers will test you every chance they can.

As the Soldier moves from one unit to the next, or in the case of the National Guard where we have people for years, the Soldiers will test the system to see what is acceptable. Unfortunately, for these units the ‘disciplinary action’ that

Why Accountability This Month?

perpetuated 'disciplined Soldiers' came after some significant event. Nonetheless, the end justified the means. These are programs we've

had available to us for years, and I think they went by the wayside back when we started issuing time-out cards to basic trainees. When Soldiers don't abide by the rules, they must be held accountable.

"Here's the problem. Although these are Army-

wide standards, commands tend to prevent 'disciplinary action' as a sign of taking care of our troops. Obviously, that ideology has gotten us nowhere. When you talk to other troops not directly involved in a situation, they generally expect disciplinary

RANK	CHARGES	ACCIDENT DESCRIPTION	RESULTS
SPC	Assault with a dangerous weapon, negligent discharge of a loaded firearm, and carrying a concealed weapon	Bullet from Soldier's gun struck acquaintance in the back and severed her spinal cord, causing permanent paralysis below her upper waist	Pending
SPC	Drunken and reckless operation of a vehicle and negligent homicide	Soldier struck a pedestrian Soldier with his vehicle during an early-morning road march	Guilty verdict and dishonorable discharge, confinement for 3 years, and total forfeiture of pay and allowances
SGT	Negligent homicide	Soldier was operating an armored vehicle that struck and killed two pedestrian girls	Not guilty verdict
SGT	Negligent homicide	Commander of armored vehicle that struck and killed two pedestrian girls	Not guilty verdict
SGT	Charges pending	Soldier was driving his POV when he ran a red light at an intersection and collided with another vehicle. The Soldier fled the accident scene. One occupant of the other vehicle was killed, and four were injured.	Pending
SPC	Involuntary manslaughter	Soldier lost control of his vehicle and a passenger was killed when the vehicle hit a tree. The Soldier's blood alcohol content was .21.	Soldier was found guilty of negligent homicide. Sentence included 30 months confinement, total forfeiture of pay and allowances, reduction to the rank of private, and a bad conduct discharge.
PVT	Driving under the influence	Soldier lost control of his vehicle, crashed, and broke his neck and back.	Guilty verdict and not in line of duty-due to own misconduct determination. The Soldier was required to pay all civilian and military hospital bills and was discharged from the Army.

action. We leaders lose more credibility by not exerting our authority than when we 'take care of the troops' because they will test you and take advantage of that generosity. We live, breathe, and die by discipline whether for combat, pecuniary, or safety reasons. For far too long we have witnessed events where Soldiers knew, but disregarded, the standards. Why? It's not because they don't know the standards or have some level of logic that leans toward self-preservation. Soldiers know the limits—otherwise, we wouldn't see them committing offenses out on the fringes of the standards. They are the 'counter-culture' who want to be seen as trendsetters or seek attention for their own egos. When the trends don't go in the correct direction, the hierarchy perceives the offenders are ignorant of the standards and we must provide more 'training.' On the contrary, I feel that Soldiers across the globe are not in touch with the consequences. How do we get out of this rut?

"Word-of-mouth is not working. Safety and accident statistics don't cut it, and training is just like every other time you sit the masses down. They automatically have an aversion to the idea of being gathered together and preached to about things they shouldn't do. The group influence takes on a life of its own and has a greater impact on individuals to not take

We leaders lose more credibility by not exerting our authority than when we 'take care of the troops' because they will test you and take advantage of that generosity.

the subject seriously. Since all these factors are common Army-wide, disciplinary action is not as prevalent or as visible to the individual Soldier because no one understands what action is taken from unit to unit.

"I feel there should be a section added to *Countermeasure* and *Flightfax*, similar to the accident briefs in the back, which highlights disciplinary action taken for various events. The word gets around when someone reads, 'Soldier was caught drinking and driving; the command did....' This won't have the same effect on Soldiers as their buddy dying or them being so close to an investigation they grow concerned they will be implicated. However, they will begin to understand the relative consequences and realize that we, as an Army, won't stand for their lack of discipline! Action=reaction—if I do X, then Y will happen.

"We have enough to do out here in the field. We don't need to research the UCMJ and put together another briefing for our troops. But if we give visibility to what disciplinary action is taken, then perhaps Soldiers will begin to realize

this is not a local commander's or safety officer's philosophical beliefs. Rather, it's the Army's values and culture."

The Army Safety Center applauds this commander's frank and on-point comments. Although most of our Soldiers are disciplined and follow the standards, we must be firm and fair with the minority that break the rules. We want to add an accountability section to our magazines, but gathering the substance for such a section is difficult since no central Army repository exists. We want to know the actions taken against members of your unit after, or even before, an accident occurs. Speeding that doesn't kill is still speeding—it should be dealt with *before* some dies. Please contact us at countermeasure@safetycenter.army.mil or flightfax@safetycenter.army.mil to tell your stories, and remember that anonymous submissions are welcome. We look forward to hearing from you soon! 🇺🇸

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“A Soldier in my unit a few years back decided to go out and drive after drinking, even after MANY control measures were put into place—to include a free cab ride program paid for out of MY pocket. The young Soldier took a 90-degree, 30-mph corner at 90 mph. The end result was a broken back and neck. He spent several months in a civilian hospital and several more in a military hospital. In the end, the line of duty investigation officer found him not in the line of duty. He was charged for all civilian and military hospital bills AND discharged from the Army for not being able to pay his debt.

“The end result was that the Soldiers in the unit took notice, and in the next 2 1/2 years I was there, there were no more DUIs in the battalion. This may or may not have been a contributing

factor to keeping the Soldiers from drinking and driving, but holding them accountable and not letting them off the hook for driving while tired and DUIs, in my opinion, goes a long way toward getting their attention and making them think about doing stupid stuff.” —Excerpt of an e-mail from a CW4 to Flightfax

Line of duty (LD) determinations are essential for protecting the interests of the individual concerned and the U.S. Government in situations where service is interrupted by injury, disease, or death. LD investigations are conducted to determine whether misconduct or negligence was involved in the disease, injury, or death and, if so, to what degree. Depending on the circumstances of the case, an investigation may or may not be required to make this determination. Except for slight injuries of no lasting significance (e.g., superficial lacerations, abrasions, or mild heat injuries), an LD investigation must be conducted.

The only possible LD determinations are: in line of duty; not in line of duty—not due to own misconduct; and not in line of duty—due to own misconduct. A person who becomes a casualty because of their intentional misconduct or willful negligence never can be determined as in line of duty. For most accidents a determination of not in line of duty—due to own misconduct is proper, and the Soldier stands to lose substantial benefits. Thus, the LD determination is critical. Not in line of duty determinations can be made only through a formal investigation. Some of the circumstances requiring a formal investigation include:

- Injury, disease, or medical condition that occurs under strange or doubtful circumstances or apparently is due to misconduct or willful negligence.
- Injury or death involving the use of alcohol or drugs.
- Death of a U.S. Army Reserve (USAR) or Army National Guard (ARNG) member while participating in authorized training or duty.

Line of Duty Determinations: An Underused Tool

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- Injury or death of a USAR or ARNG member while traveling to or from authorized training or duty.
- In connection with an appeal of an unfavorable finding of alcohol or drug abuse.

A formal investigation usually begins with completion of DA Form 2173 by the medical treatment facility. The form then is annotated by the unit commander as requiring a formal investigation. The appointing authority, on receipt of DA Form 2173, appoints an investigating officer (IO). The IO completes DD Form 261 and attaches appropriate statements and other documentation to support their findings, which are submitted to the General Court-Martial Convening Authority for approval.

Many commanders hesitate to complete the required LD investigation when a Soldier is severely injured. They often cite manpower constraints and “taking care of the Soldier” as their reasons—both baseless. There is no prohibition against using the same IO to conduct a report of survey or other investigation in conjunction with an LD investigation. When a Soldier wrecks his HMMWV and breaks his legs because he was driving too fast and not wearing his seatbelt, the same IO can find the driver not in line of duty and liable for repairs to the Government vehicle. This process conserves manpower, but also sends the message to others that “taking care of Soldiers” includes holding them accountable for their actions.

If a Soldier is found to be in line of duty, he may be entitled to Army disability retirement or separation compensation; Veterans’ Administration (VA) compensation and hospitalization benefits; and incapacitation pay (USAR and ARNG). A Soldier found not in line of duty—not due to own misconduct or due to own misconduct loses many benefits, including:

- Disability retirement or separation compensation for active duty Soldiers.
- VA disability or hospitalization benefits if disabled after leaving active duty.
- Civil service preference.
- Incapacitation pay for USAR and ARNG members.

If the determination is due to own misconduct, the Soldier’s service obligation is extended 1 day for each duty day lost, including hospital and recuperation time. Those lost days may be excluded from computations for pay and allowances, and the findings may result in loss of pay where disease (not injury) immediately follows intemperate use of alcohol and drugs. It is a common misconception that a not in line of duty determination will cause a Soldier to forfeit his Servicemen’s Group Life Insurance (SGLI). This is not true—LD determinations have no impact on SGLI payments.

Commanders at all levels are urged to use this tool. As the opening e-mail states, Soldiers pay attention when someone is held accountable. None of our young Soldiers seem to think they could die in an accident. They do, however, believe their commander can ruin their day with administrative or UCMJ action. Take that action when necessary to curb their unsafe behavior. 🚗

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In line of duty determination circumstances requiring a formal investigation include:

- Injury, disease, or medical condition that occurs under strange or doubtful circumstances or apparently is due to misconduct or willful negligence.
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- Injury or death of a USAR or ARNG member while traveling to or from authorized training or duty.
- In connection with an appeal of an unfavorable finding of alcohol or drug abuse.



Reports of Surveys *reports of*

"My unit had a rash of AMV accidents. Laziness and just not giving a crap about the standards were the common factors. Two of the unit's company commanders soon had enough and charged the responsible Soldiers \$1,800 total for the next two mishaps. Guess what? It sent a ripple through the battalion that I personally heard people grumbling about, but we haven't had a similar mishap since. I applaud those two commanders because they had what it took to hold the Soldiers accountable for their actions."—A senior warrant officer regarding accountability

When Government items under your control are lost, damaged, or stolen, you may be held financially liable for them. The report of survey (ROS) is the Army's administrative tool used to establish financial liability. Under Army Regulation (AR) 735-5, financial liability ordinarily will not exceed 1 month's base pay. In certain situations, however, such as the loss of personal arms or equipment or damage to Government quarters, liability may equal the full amount

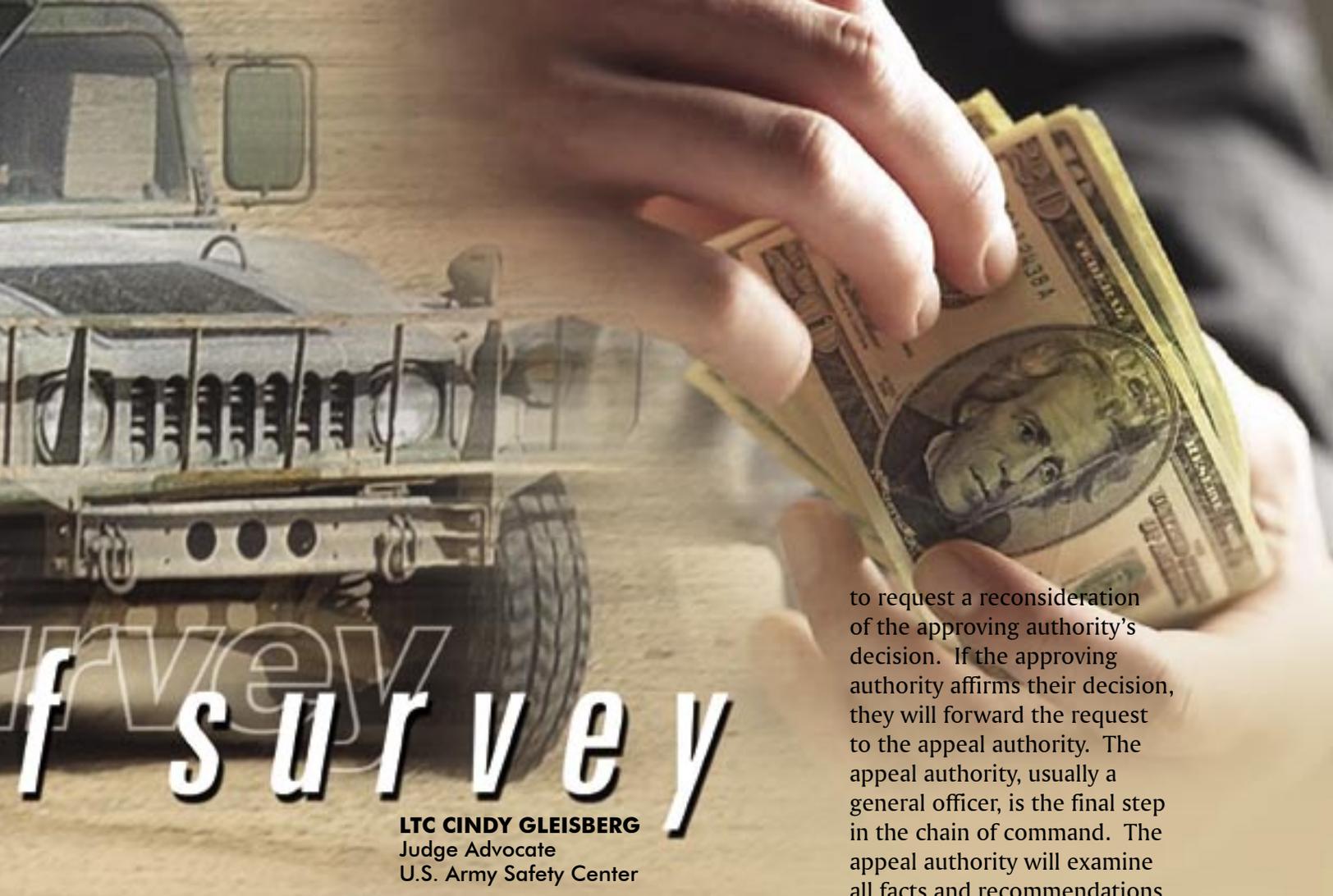
of loss. The following are some recent examples of ROS findings:

- Two NCOs failed to properly supervise HMMWV drivers' training and encouraged radical behavior such as donut turns in the sand and jumping over dirt mounds. One HMMWV suffered substantial damage, and the two supervisors were charged for the repairs.
- An Army civilian was backing a passenger van from a parking space when he struck a parked tractor-trailer behind

him. The civilian was held liable for \$1,385.84 in repairs, even though he insisted he did all he could do to avoid the accident. The survey officer found the civilian was negligent because he had good visibility of the parked trailer and had to cross a two-lane road to hit it.

- An Army civilian backed a Government vehicle into a concrete barrier at a fueling station. Based on the ROS, the civilian was held liable for \$311 in repairs.

Every situation involving loss or damage doesn't warrant



survey

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an ROS. If the damage or loss is less than 1 month's base pay, the responsible party can sign a DD Form 362—essentially an acknowledgment of liability and agreement to pay. An ROS must be performed in situations where responsibility or the amount of liability is in question.

An ROS begins when a survey officer is appointed to investigate the facts and make initial findings. A copy of the initial findings is given to the individual so they can prepare and submit their rebuttal within 7 days. The survey officer then makes recommendations regarding liability and loss amount. To issue a finding of liability, the

survey officer must show the person being held liable had a duty or responsibility to care for the property but acted negligently, causing financial loss.

Recommendations then are submitted to the appointing authority for review and comment before being forwarded to the approving authority. The approving authority, generally a colonel or above, approves or disapproves the recommendations. Before making a final decision, the approving authority receives a legal opinion stating the findings are legally sufficient and the survey was completed in accordance with AR 735-5.

The individual has 30 days

to request a reconsideration of the approving authority's decision. If the approving authority affirms their decision, they will forward the request to the appeal authority. The appeal authority, usually a general officer, is the final step in the chain of command. The appeal authority will examine all facts and recommendations before making a final decision.

If you are responsible for Government property or equipment, treat it as your own—but remember you don't have insurance to cover your mistakes. If you are a leader, hold those that operate or use the equipment responsible for the damage they cause through negligence. The ROS often is used for lost, but rarely for damaged, property. However, you can change unsafe behavior by using the ROS to its full potential. 🚛

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pposing Force (OPFOR) Soldiers at the Joint Readiness Training Center (JRTC) in Fort Polk, LA, are some of the best trained and most respected troops in the armed forces. Confident and skilled, they consider themselves invincible in combat. One cold, rainy night, however, the OPFOR found they are not invincible, even at home, when they lost one of their own in a preventable accident.

Earlier that day, two OPFOR Soldiers in a scout platoon erected an 11-row, double-strand concertina wire barrier across a road. One of the Soldiers had an OPFOR motorcycle—the Army 23AH08, a one-person bike designated for off-road use only. The motorcycle's off-road tires were not

designed for travel on asphalt or other hard road surfaces because of their decreased traction and increased braking distance. Despite these restrictions, the Soldier, a staff sergeant, offered the other Soldier, a specialist, a quick joyride before they reported to the unit for the night. Neither Soldier was wearing a helmet.

The two Soldiers got on the motorcycle and headed in the darkness toward the obstacle on the slick, wet asphalt road. The driver, who reportedly was driving faster than the nighttime speed limit of 10 mph, lost control of the bike about 100 feet from the obstacle. The motorcycle crashed into the obstacle so forcefully that it bent an 8-foot metal engineer picket at a right angle and ripped most of the others from the ground. The specialist was thrown from the bike into the concertina wire and hit his head on the asphalt, fracturing his skull.

Soldiers in the area heard the motorcycle's loud revving just before the accident and tried to warn the driver about the obstacle, but they were too late. When the Soldiers arrived at the scene, they started cutting the concertina wire and administered first aid. The driver never lost consciousness, but the specialist did immediately. Moments later, he regained consciousness and was deceptively coherent and responsive. An individual

with a serious head injury can appear uninjured for a short time before their brain starts to swell. Once the specialist's brain started swelling, however, he lost consciousness again and never regained it.

Emergency personnel arrived within 15 minutes and transported both Soldiers to the local emergency room. The driver was treated and released, but the specialist was evacuated to another hospital. He died later that night.

There were three important factors these two highly trained Soldiers failed to consider. First, the motorcycle was designed to carry only a driver. The specialist's additional weight exceeded the motorcycle's weight capacity and significantly decreased its controllability.

The second factor the Soldiers should have considered is perhaps the most important. Neither

A Soldier's

Soldier was wearing a helmet, even though helmet use is a strict requirement at JRTC and is mandated by standing operating procedures and Army regulations. When used properly, helmets greatly decrease the risk of head injury, even in serious accidents. The National Highway Traffic Safety Administration reported in March 2003 that over a 10-year period, helmets saved more than 7,800 lives and could have prevented 11,915 deaths.

The Soldiers also did not consider the third factor, the environment. Rain had fallen sporadically that cold day and into the night, leaving the asphalt road slick. The weather, speed, and darkness, combined with the passenger's extra weight, caused the driver to lose control.

These type situations may be punishable under the Uniform Code of Military Justice, Article 134, for negligent homicide if the defendant's actions or failure to take action amount to simple negligence. The explanation section for negligent homicide states, "[s]imple negligence is the absence of due care, that is, an act or omission of a person

Last Ride

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Judge Advocate

SCOTT A. KEITH
Safety Specialist

who is under a duty to use care which exhibits a lack of that degree of care of the safety of others which a reasonably careful person would have exercised under the same or similar conditions.” A conviction of negligent homicide carries a maximum penalty of dishonorable discharge, forfeiture of all pay and allowances, and confinement for 3 years.

A Soldier can be charged with a violation of Article 119 for involuntary manslaughter if evidence shows the conduct causing the death constitutes culpable negligence. The explanation section for involuntary manslaughter states,

“[c]ulpable negligence is a degree of carelessness greater than simple negligence. It is a negligent act or omission accompanied by a culpable disregard for the foreseeable consequences to others of that act or omission.” The offense carries a maximum penalty of dishonorable discharge, forfeiture of all pay and allowances, and confinement for 10 years.

A fine Soldier lost his life that night because he and his leader used poor judgment. If either Soldier had paid attention to

the significant risks and probable consequences of their actions, that young specialist likely would be alive today. 

Comments regarding this article may be directed to LTC Cindy Gleisberg, U.S. Army Safety Center Judge Advocate, at (334) 255-2924, DSN 558-2924, or by e-mail at cynthia.gleisberg@safetycenter.army.mil.

Thus far, this issue of Countermeasure has focused on the legal aspects of Soldier accountability. The following two stories illustrate real-world situations where disciplinary action wasn't necessary because the Soldiers involved learned from their mistakes and stopped their negligent behavior. If you have a similar story you would like to share with other readers, please e-mail countermeasure@safetycenter.army.mil. Anonymous submissions are welcome.

A Little Luck and

Initiative vs. Procedures

Several years ago, a Soldier was assigned to the land combat support system (LCSS) section within his unit's division support command. His section repaired antitank missile test equipment, a job that required an alternate power source provided by a 60 kW generator. The generator required a daily preventive maintenance checks and services (PMCS) in accordance with its technical manual.

One morning during the before-operation PMCS, the Soldier noticed excessive corrosion on the generator's left-side battery positive terminal. He tried to find a mechanic from the motor pool to fix the problem, but they all were busy doing other things. Instead of waiting for a mechanic, the

Soldier used initiative and decided to remove the terminal, which was adjacent to the generator's mainframe. It wasn't long before the Soldier's wrench arced against the frame, providing

a ground path to the start switch. The wire connecting the start switch to the positive terminal immediately began burning toward the switch, located about 3 feet from the battery.

The equipment suffered minimal damage, but the Soldier came very close to receiving a permanent career setback. The motor pool's NCOIC recommended that the company commander take UCMJ action against the Soldier to cover the repair costs. The Soldier got a lucky break when the unit's technical warrant officer rewired the generator and returned it to fully mission capable status.

The Soldier learned a valuable lesson that day that he's shared many times over the years. Initiative is a great thing, but not following procedures can jeopardize important things like your career or even your life. Follow the standards and protect yourself and your buddies. 

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Hot HMMWVs

I left post after work one afternoon and got on the highway to head home. The speed limit was 65 mph, but I set my cruise control on 72



d a Little Learn

to keep up with the traffic flow. About a quarter-mile ahead, I noticed two HMMWVs traveling together. I passed them both, but I couldn't help but notice how fast they were going. I guessed my speed was only 3 to 5 mph faster than theirs.

About 5 minutes later, both HMMWVs passed me. I hadn't changed my cruise control since I got on the highway, and I estimated their speed to be between 75 and 80 mph. Although surprised at first, I became concerned a few minutes later. I remembered my early days in the Army, when I was training to drive the HMMWV. I recalled the tire ratings and the catastrophic failure that could happen if their maximum rated speed was exceeded.

The HMMWVs were a few car lengths ahead of me now. I caught up to them and flagged down the lead to follow me. We pulled into a convenience store parking lot, where I found a sergeant in charge of the trucks.

After getting his military license, I asked the sergeant about their mission, and he replied they were returning their vehicles for the weekend. I then asked the sergeant what speed his tires were rated for and got "I don't know" in reply. I told him the tires were rated to only 55 mph and asked him why he was doing 75 mph. He claimed to be going only 62 or 63 mph, but I explained to him that my cruise was set at 72 and they passed me.

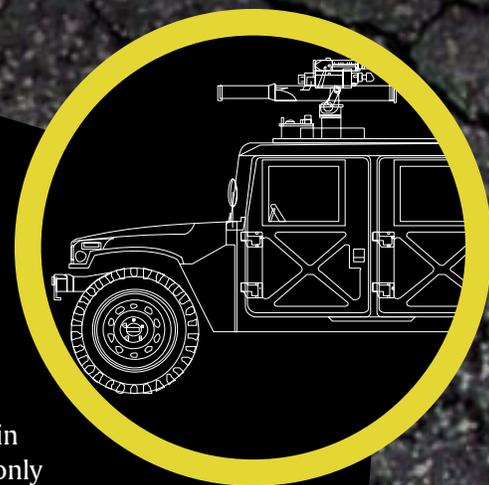
I was determined to educate this Soldier on his vehicle's limits and inform him of the danger to himself and his troops. What is the emergency

procedure for a blown tire at 75 mph anyway? I explained to him I wasn't interested in busting his rank or calling his commander, but he was accountable for what happened in those HMMWVs. I only wanted to prevent a tragic accident that could take the lives of his Soldiers and maybe civilians on the highway.

The sergeant and I looked through his operator's manual, where I found the passage stating the vehicle's 55-mph rating. Even the Soldier's stated speed of 62 or 63 mph was too fast. Not only are HMMWV tires unable to withstand excessive speed, but the transmission as well. So, even if an accident never happened, the possibility of extensive equipment damage was very real. We briefly discussed the situation, and I turned them loose.

In the end I justified my point—75 mph or 62 mph, they were still going too fast. Did I save lives and equipment, or just ruin a sergeant's day? Maybe I ruined that sergeant's day, but I bet he got over it. The effect of just one of his Soldiers dying in a preventable accident would last his lifetime. Take responsibility when you're entrusted with Army equipment and your Soldiers' safety. The consequences are too great to let rushing to get home a couple of minutes early keep you from getting there. —

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We are an Army at war that is also transforming. Amid these significant activities we are challenged to preserve and protect our combat power. Using traditional risk management methods, we have made some progress toward this goal, yet much improvement remains. We need a breakthrough approach that will maximize our combat readiness.

What It's About

Composite Risk Management

DR. BRUCE JAEGER
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More effective risk management requires a cultural change. We must move beyond compartmentalized thinking that stresses the “big operation” and main movements. We must recognize that tactical or accidental, in the center or on the perimeter, bad results are the same: Dead is dead, and every loss decreases combat power. This is the notion of composite risk management, and it is at the heart of a cultural change.

Composite risk blends tactical, threat-based risks with accidental, hazard-based risks to create a more thorough evaluation of danger, thus enabling highly effective risk mitigation. Summarized from the standpoint of the Soldier, composite risk asks, “What’s going to kill me and my buddies?” This simple, results-oriented view depicts a transformed mindset that realizes the enemy and tactical operations are not the sole concern, but there is also potential for fatal mishaps due to the environment, systems issues, and human error. Composite risk management, then, combines such sources into a holistic assessment of exposure (Figure 1).

How important is it to view

tactical and accidental risks together? Consider that for FY03 and FY04, the Army suffered 1,155 fatalities, with 46 percent (530) due to accidents. Historically, the data are even worse: During all conflicts since the Spanish-American War, about 55 percent of Army deaths were due to accidents. Hence, losses from mishaps have degraded combat power on par with losses from enemy action. Statistically, we clearly see the whole problem and can acknowledge the need for composite risk management. Yet many Soldiers still suffer from tunnel vision, focusing on one source of risk and discounting others. The recent true story below illustrates the point.

Company-level leaders were planning a convoy operation in Iraq. Their primary decision revolved around which route to take, and their main data gathering consisted of color-coded route alternatives that assessed the enemy threats. With a quick analysis, they chose a “green” route for the mission—that is, one with no enemy threat. Having mitigated the tactical, threat-based risk they gave only cursory

Tactical threat-based risk management



Figure 1. Composite Risk Management

planning to the hazard-based risks that also were embedded in the mission:

- The green route's distance vs. distances for unchosen routes
 - Road width, bridges and bridge width, climbs and descents
 - Road condition, type of shoulder, drop-offs or embankments
 - Sharp curves, intersections, limited sight areas, surrounding terrain
 - Traffic, speed, following distances
 - Fatigue and rest stops, checkpoints, communications
 - Number of vehicles, types of vehicles, loading, handling characteristics
 - Drivers' skill levels, crew pairing
 - PPE (vests, helmets, seatbelts)
 - Emergency procedures and breakdowns
- To be sure, no one wants to be killed by

the enemy. However, it is noteworthy that each of the factors above was also responsible for FY04 fatalities in theater, but these hazards did not seem to faze the junior leaders. The mission, the enemy—HOOAH! Let's saddle up and charge! This is a narrow and often fatal view.

Composite risk management supplements the focus on the main operation with consideration of other hazards to give a complete picture of exposure. There is no separation of tactical or accidental, deployed or garrison, on duty or off duty—it is risk management 24/7, because Soldiers are vital Army assets whether engaging the enemy, recocking back home, or on block leave. This holistic view says, "Based off everything we know, what hazards

will we face and how can we mitigate the risk?" (Figure 2) The enemy, materiel, the environment, and human factors—during a mission or outside of it—interact to pose composite risk to the Soldier.

Composite risk management does not paralyze through fear of all that can go wrong; it does not foster risk aversion. Rather, by mitigating the known hazards to acceptable levels, the approach emboldens Soldiers to act confidently. Composite risk management does not guarantee no harm will come, but it lessens the probability significantly. Such knowledge bolsters courage and increases unit effectiveness.

And what of safety? Up to this point no mention has been made of the term, on purpose. As part of the cultural change, the

concept of composite risk management includes safety but supersedes the term and transcends the practice. In many circles, safety is seen as a hindrance to mission accomplishment, a litany of "can'ts" and caveats. Others, particularly young Soldiers, scoff at the term "safety" because it does not relate well to why they joined the Army. Safety has become a four-letter word and is shackled by a negative connotation. On the other hand, composite risk management deals with preserving combat readiness and protecting combat power. The approach says that we value our people, so we control risk wherever and whenever it exists to keep our Soldiers in the fight. We teach our Soldiers what they CAN do to stay ready, willing, and able. Composite risk management, therefore, is more comprehensive and positive.

The notion of composite risk management is much easier to grasp than it is to execute. Indeed, the real cultural change occurs not by espousing the new idea but by practicing it. To that end, we must overcome several

Briefbacks enable commanders and NCOs to verify that their subordinates understand their intent. Failure to perform a briefback can cause a misunderstanding of intent, ultimately leading to inappropriately planned missions.

e X e C U t e

COA

Any quest

MAJ STEVEN VAN RIPER
Investigation Division
U.S. Army Safety Center

The platoon had only one more objective after 2 weeks of combat operations, but there was a problem. One of their vehicles was disabled, and they could no longer tow it using organic assets. The platoon leader and platoon sergeant developed three courses of action (COAs). Each COA allowed the platoon to transport the disabled vehicle to a wrecker link-up point and prepare for their final operations in sector.

The COAs were briefed to the company commander over the radio, and the platoon leader was instructed to execute COA 1. He and the platoon sergeant task organized the platoon into two elements to complete the mission. No briefback was offered by the platoon leader, nor did the company commander require one.

Tragically, an unplanned route change and an ambush on the platoon's elements resulted in the fratricide deaths of one U.S. Soldier and one host nation soldier. After reviewing the platoon leader's plan, it was evident he had not acted in accordance with

his commander's intent. Had an effective briefback been completed before the mission, the commander probably would have recognized the differences between his intent and the platoon leader's plan.

The company commander's and platoon leader's failure to perform a briefback was not the only factor that led to this accident, but greatly contributed to it. We must ask two important questions here: Why do experienced leaders choose not to perform briefbacks? Why must briefbacks never be omitted from the mission planning process?

I'm confident you understand my intent... I don't need a briefback.

As time goes by, commanders and subordinate leaders develop confidence in each other. Commanders have to be confident that subordinate leaders will execute missions to standard. After working together in combat, confidence is enhanced as mission success rates climb and casualties are kept low.

At a certain point this "steady state" confidence might give way to overconfidence. In many cases this overconfidence is revealed by lapses in equipment maintenance or a period of mild indiscipline. At its worst, overconfidence will contribute to accidents similar to the one discussed in this article's opening paragraphs.

In that accident, the platoon leader did not verify his commander's intent using a briefback because both he and the commander had become overconfident in each other's planning abilities. This overconfidence allowed the company commander and platoon leader to conclude they both fully understood the other's concept of the operation. As a result, the platoon was split into two independent, moving elements and encountered unanticipated heavy enemy contact.

Commanders must recognize the signs of overconfidence. In most cases the symptoms are discreet and not easily recognizable. Commanders, NCOs, and junior leaders must rely on outside



A
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ions?

observers, “old timers,” and senior leaders to help them recognize the signs. Once recognized, increased command emphasis on discipline, standards, and internal improvements can quickly return a unit to steady state confidence.

Are briefbacks required?

Briefbacks are required in accordance with Field Manuals (FMs) 7-8 and 100-14, paragraph 2-10-h3 of FM 7-10, and Ranger Handbook SH 21-76. Not performing an effective briefback can cause subordinates to act contrary to their commander’s intent. Therefore, effective briefbacks are an important part of the risk management process. They allow leaders to review a mission’s known risks and also reveal unanticipated risks,

giving leaders an opportunity to develop control measures. Simply put, leaders must always offer their commanders a briefback, and commanders must always require one.

Lessons learned and conclusions

Briefbacks are critical in ensuring leaders and subordinates have a clear understanding of intent and the actions required to turn that intent into an operational plan. Effective briefbacks reveal miscommunication

and misunderstanding before Soldiers find themselves in contact with enemy forces. Briefbacks offer clear understanding of the commander’s intent and allow subordinates the flexibility to make the right decision when the situation changes and there is not time to get the commander’s approval. 🖱️

Contact the author at (334) 255-2131, DSN 558-2131, or by e-mail at steven.vanriper@safetycenter.army.mil.

I recently spent 18 months supervising small-arms ranges in support of the current mobilization with about 20 other Army retirees. Our experience indicated that range safety is directly related to the quality of unit firing-line safeties.

The Importance of Fir

DAVID ROCKWELL
CP-12 Safety Intern
Fort Drum, NY

We observed active duty, Reserve, and National Guard units. One commonality among them was that they often paid little attention to the qualifications of their firing-line safeties. Instead the primary consideration was, "Who is available right now?" Most unit leadership understood that firing-line safeties must be a specialist or higher rank; however, few leaders took time to brief them on their specific firing-line responsibilities. Seldom was anyone designated to

supervise firing-line safeties, although range safety officers and officers in charge are designated by Army Regulation 385-63.

This problem was illustrated on an M16 range. During a 10-day span, three Soldiers left the firing line with a chambered round in their rifles. These Soldiers walked across the range complex to a classroom, totally unaware of the chambered rounds. Fortunately, an alert unit leader or range safety officer spotted the problem and immediately cleared

the weapon in each instance. Three serious accidents with tragic consequences could have occurred had the chambered rounds not been discovered.

All unit leaders, range officers in charge, and range safety officers must be aware of this systemic problem. It is their responsibility to brief firing-line safeties before they assume their duties and supervise them during the range exercise. Also, range standing operating procedures should include a

specific briefing for firing-line safeties. The unit officers in charge or non-commissioned officers in charge should give this brief, to include the following topics:

- Firing-line safeties must know the exact firing positions for which they are responsible. A good ratio, or span of control, is one safety per two or three shooters.
- Firing-line safeties must be aware of any inexperienced shooters on the line. Inexperienced shooters raise the probability



Firing-line Safeties

of an accident and must be supervised accordingly.

- All means of communication—paddles, arm signals, and verbal commands—must be understood clearly. Handheld radios also may be necessary for communication.

- All firing-line safeties must loudly and clearly repeat the tower's firing commands. This process helps each shooter keep their focus downrange. Firing-line safeties

must ensure each shooter stays within the firing commands and that their weapon is pointed up and downrange.

- Firing-line safeties must keep their focus on the firing line and intervene immediately when a shooter has a problem. During M16 qualification, Soldiers must keep their weapons operational;

however, an inexperienced shooter attempting to clear a weapon represents an immediate hazard.

- Firing-line safeties must rod each weapon as the shooter enters and exits the firing line. According to Army Regulation 385-63, the range safety officer is responsible for ensuring all weapons are clear before and after the range exercise.

- Firing-line safeties should be qualified on the

weapon(s) they are supervising.

Being a firing-line safety is one of the most important jobs in the Army today. The loss of a Soldier on the range at home is just as devastating as a combat loss in theater. Show these Soldiers what right looks like and give them the skills to make it home from the fight. 

Contact the author at (315) 772-5352 or by e-mail at david.rockwell@us.army.mil.

Additional Duty Safety Course ONLINE NOW!

DON WRIGHT
Distance Learning Program Manager
U.S. Army Safety Center

The Additional Duty Safety Course (ADSC) is a Web-based, distance learning course designed to provide additional duty safety personnel with the core curriculum needed to accomplish their designated duties. Until recently no standard training for these personnel existed—only a hodgepodge of programs ranging from a couple of hours to 1 week in length. The ADSC was structured to become the Army standard for teaching core safety subjects needed at unit through brigade levels.

Initial prototype testing of the course was completed on 22 and 23 November 2004 at Fort Rucker, AL, with about 45 volunteers. Four primary user groups were included: safety professionals, additional duty safety personnel, joint service safety representatives, and Army Safety Center personnel. User groups were separated in three classrooms, and contractor technical personnel were on site to address operational issues with courseware and presentation concepts. Training personnel from the Safety Center provided classroom oversight, content review, and data collection (to include written and group discussion comments) and analysis.

Participants said the course contains accurate and pertinent content that met their expectations. Post-review group comments confirmed that the course met 100 percent of its goals for key takeaway messages. Feedback supported that the course is highly effective, clearly organized, and well received by the targeted viewing audience.

The remaining efforts to complete the course will focus on the technical aspects of the ADSC and restructuring the exam

based on user feedback. The technical contractor took the comments and immediately began incorporating recommended changes and corrections. The exam was reformatted to provide clarity and effectiveness and optimize user performance.

Released on schedule in early January 2005, the ADSC will provide user-validated information, tools, and resources for additional duty safety personnel Army-wide. Since it was well received in an incomplete state,

the ADSC is anticipated to exceed expectations as a final product. For more information on the ADSC or to register for the course, visit the Safety Center Web site at <https://safety.army.mil>. We look forward to helping you through this course and all our other tools! 🐼

Contact the author at (334) 255-1389, DSN 558-1389, or by e-mail at don.wright@safetycenter.army.mil.



ACV

Class A (Damage)

■ M1 tank was destroyed by fire. The tank was disabled and was being towed by another M1 when it caught fire. The cause was not reported.

Class B

■ Six Soldiers were injured when their Stryker fell over the edge of a cliff. The Soldiers were conducting combat operations at night and had left the roadway to conduct a mission. The injuries included cuts and lacerations, four concussions, and a fractured spine.

■ One Soldier was killed and 24 were injured when the M35A3 FMTV they were riding in ran off the roadway and overturned. The vehicle's driver, who was injured, failed to negotiate a curve, causing the accident.

■ Soldier suffered fatal injuries after his M931 fuel truck overturned during convoy operations. The Soldier was attempting to negotiate a pontoon bridge crossing when the vehicle rolled.

■ Soldier died after the M915A2 he was driving ran off a 10-foot embankment and overturned. The accident occurred during the early morning hours on a dirt road while the truck was towing an M1062 trailer.

■ Soldier collapsed and died after leading a 6-mile physical training run. The Soldier reportedly collapsed after sprinting about 100 yards. The cause of death was listed as elevated core body temperature injuries (heat exhaustion).

■ Soldier died at a local medical facility after collapsing during the APFT. No other details were reported.

■ Soldier collapsed during the cool-down period following physical training. CPR was performed on the Soldier, but he later died at a local hospital.

Class B

■ Soldier's hand was amputated by a 120 mm mortar round. The Soldier was firing the round from an M113 mount launcher system and moved his hand into the round's path as it fired.

■ Soldier's finger was amputated by an M60 round. The Soldier was attempting to clear the weapon when he bumped the manual fire mechanism, causing the round to discharge and strike his finger.



AMV

Class A

■ Soldier died when she lost control of the Government-owned sport utility vehicle she was driving on an interstate. The Soldier overcorrected the vehicle, causing it to flip several times across all lanes of traffic. No other details, including seatbelt use, were reported.

■ Two Soldiers were killed when their M915A3 went over an embankment and caught fire during early morning convoy operations. The driver was killed instantly; the second Soldier died more than a month later from burns suffered in the accident.

■ Two Soldiers suffered fatal injuries when their M915A3 ran off the roadway and overturned during convoy operations. Both Soldiers were ejected from the vehicle.



Personnel Injury

Class A

■ Soldier died after collapsing during the run portion of the APFT. The Soldier reportedly began to slow down before he collapsed. The Soldier was taken to the nearby fire department and then transported to the local hospital, where he died.

■ One Soldier was killed and two others were injured when the AB 216/U Signal Tower they were disassembling collapsed. The three Soldiers fell from the tower as it collapsed.

■ **Soldier suffered fatal injuries after being pinned between an M88A1 recovery vehicle and an M1A2 tank. The truck's driver had finished maintenance and was backing up the vehicle when the deceased Soldier walked between the truck's rear and the tank. The deceased Soldier died at the scene.**



Marks the Spot

Driving
Playing
Working
Living

C o m i n g S o o n



ARMY GROUND RISK-MANAGEMENT INFORMATION

Countermeasure

VOL 26 NO 2

<https://safety.army.mil>

FEBRUARY 2005

Keeping the Drama Out of Theater



HEADQUARTERS
U.S. ARMY
COMBAT READINESS CENTER
4905

Plus, Introducing the
Combat Readiness Center

Countermeasure

CONTENTS

- 3 DASAF's Corner**
Change is in the air...the U.S. Army Combat Readiness Center is headed your way!
- 6 Safety Sends 13**
Transforming to Preserve Combat Power
- 8 What's All the Talk About Composite Risk?**
- 11 Route Clearance Saves Lives**
- 12 Investigator's Forum**
Why Didn't You Tell Me That?
- 14 Words Matter**
- 16 Worse Than You Think**
- 17 A Juggling Fool**
- 18 Weapons Safety: On the Range, Around the Arms Rooms, and In Between**
- 20 Check Your NBC Equipment**
- 21 Best Practices**
Samurais Fight the Safety Battle
- 22 ImpaX Is for You!**
- 23 Accident Briefs**
- 24 Why Are We Changing?**



on the web
<https://crc.army.mil>

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DASAF'S CORNER

From the Director of Army Safety

Change is in the air... the U.S. Army Combat Readiness Center is headed your way!

Thanks for your service to our Nation! We are a team, all working to get the job done—military, civilian, and contactor—in theater and at home. Each and every one of you is an important part of our combat power. High tempo and limited resources make it very difficult to replace you. We simply cannot afford the loss of you or your buddies, because it impacts our combat readiness.

One of the greatest leaders of World War II, GEN George S. Patton was rough around the edges. But he fully understood the importance of protecting combat power to fight our Nation's wars. His words below have more meaning when you consider our recent statistics. Since the beginning of FY04 we've lost a Soldier every 9 hours—nearly a squad each week, a platoon each month, a company each quarter, or a battalion each year! That's combat power we cannot afford to lose. Think of the energy expended to recruit, train, and retain a battalion. We must find a way to "connect the dots" on all these losses (accident + enemy + illness + suicide/other) and preserve our combat readiness. It will require aggressive change in our thinking, processes, and culture.

To enable this expanded approach, the Honorable Francis J. Harvey, Secretary of the Army, and GEN Peter J. Schoomaker, Chief of Staff, Army, signed a mandate directing the Army Safety Center to recast as the Army Combat Readiness Center (CRC) effective immediately. The new focus is on sustaining readiness and managing ALL risks—those posed by the enemy, the environment, materiel and systems, and human error. This broader focus is a logical shift from being accident-centric to Soldier-centric. The Army Safety Office will remain in Washington, DC, and support the accident and safety aspects of the CRC.

Composite Risk Management (CRM) is the fundamental element of the CRC. "Safety Sends 11," published in the January 2005 *Countermeasure* ("What It's About: Composite Risk Management"), explains how training this concept is vital to keeping our forces ready and winning our Nation's wars. We are going to improve and expand our interactive Web-based tools, give you more "There I was" stories through our magazines and Web site, and develop predictive

**"Take calculated risks.
That is quite different from being rash...
No bastard ever won a war by dying
for his country. He won it by making
the other poor dumb bastard die for
his country."**

—GEN George S. Patton

analyses through data mining with other DA agencies and “close call” reporting. Within 48 hours of a reported loss, the CRC will share with the Army the five “Ws,” as well as the trends, tactics, techniques, and procedures, and lessons learned. In short, we are going to connect the dots to help keep you and your team alive at home and in the fight.

Our Army needs your help. We need a cultural shift for the CRC to be successful. The Safety Center’s mobile focus groups and the recent Inspector General’s report confirmed the message must change to one that counteracts the negative stigma the word “safety” now invokes. These studies emphasize that safety has become a four-letter word in many circles because it does not mesh well with the level of risk or exposure. A captain in combat told me, “The first thing that goes in combat is admin, immediately followed by safety.” We want that captain and others like him to shift from compliance to aggressive CRM—to stop thinking of safety as a constraint and use CRM as a combat multiplier. Our leaders must focus on teamwork, unity, mission, risk management for readiness, and proactive planning to preserve combat power...CRM. This change will allow our junior leaders to say, “I know Soldiers depend on me, and I’m not going to let the unit down.”

The Army is fortunate to have a wealth of expertise within the Improvised Explosive Device Task Force, the Army Shootdown Assessment Team, the Center for Army Lessons Learned, and various other DA agencies. However, we can no longer afford to categorize loss by individual areas

such as combat, accident, and medical. The next logical step is to matrix the Army’s knowledge and attack hazards at home, during training, and in combat. This nested information through new processes will facilitate a more comprehensive look at threats, hazards, and controls, and also provide



DEPARTMENT OF THE ARMY
WASHINGTON

31 JAN 2005

MEMORANDUM FOR Commanding General, United States Army Safety Center, Fort Rucker, Alabama 36362-5363

SUBJECT: Transformation of United States Army Safety Center

1. Personnel and equipment losses adversely affect the combat readiness of our Army. The loss of even one member of the Army Team – Soldier, civilian, or supporting contractor – is unacceptable.
2. Transformation is a multi-dimensional process that requires significant organizational, technological, and cultural changes to keep the Army relevant and effective for the future. As we adapt new technologies to war-fighting and business operations, we must also develop better joint operating concepts and business processes that use these technologies. We must integrate our functional initiatives and shape relevant information and trends into actionable knowledge that will preserve combat readiness.
3. To these ends, we are directing the United States Army Safety Center to transform and redesignate itself as the United States Army Combat Readiness Center (CRC) to advance the principles, understanding, and practice of Composite Risk Management (CRM). CRM will focus on sustaining readiness and managing all risks – those posed by the enemy, the environment, materiel and systems, and human error – logically shifting from accident-centric to Soldier-centric.
4. As with the United States Army Safety Center, the CRC will function as a Field Operating Agency of the Chief of Staff, Army. The Army Safety Office will continue to exist but will expand its responsibilities in Washington, DC, focusing on compliance, policy, and field liaison with Headquarters, Department of the Army. The Commander of the CRC will also retain the role of Director of Army Safety, reporting to the Director of the Army Staff. The CRC will be the Army’s focal point for analyzing accident, serious incident, and combat loss reports, identifying lessons learned and tactics, techniques, and procedures (TTPs) to mitigate and prevent future losses. Accident investigation processes remain unchanged. The CRC will establish new processes leveraging information from Army organizations to collect, distill, and distribute knowledge about losses that affect our combat readiness. The prerogative of commanders to investigate losses and other incidents remains unchanged. The CRC mission will include:
 - a. Primary responsibility for investigation of Army accidents, subject to command, criminal, and other investigatory functions;





"Our leaders must focus on teamwork, unity, mission, risk management for readiness, and proactive planning to preserve combat power...CRM."

empirical data to support investment strategies, doctrine, and digital tools. The CRC's focus is knowledge, not empire building. Our goal is for the Army to have a single voice—information we can all share—when it comes to the loss of a Soldier. The CRC will consider a loss as a loss, no matter

what the cause. Regardless of whether that loss was in combat or by accident, we are going to find out why. These new processes will require extensive teamwork and provide commanders with significantly more information about the combination of circumstances that surround our ever-mounting losses.

Tomorrow's mission depends on the readiness of our Army today. GEN Schoomaker has explained that our Army at war will fail without transformation. Accelerating future force capabilities and viewing Army losses holistically will enhance the current force and transform safety culture. The CRC will play a critical role in total Army transformation and will continue to support all of you—our warfighting units, our installation flagships, and our civilian workforce. ★

The Army Combat Readiness Center—transforming safety processes to improve combat readiness and preserve combat power, one boot print at a time.

BG Joe Smith
Director of Army Safety
CG, CRC

SUBJECT: Transformation of United States Army Safety Center

- b. Coordination on selected combat loss investigations;
 - c. Focal point for instigating the necessary cultural changes and developing the processes, structure, and training necessary to implement CRM Army-wide;
 - d. Support to Functional Proponents to develop policy and doctrine for loss prevention through CRM;
 - e. Development, coordination, and facilitation of a single-entry, multiple use automated reporting system for processing loss reports;
 - f. Development of predictive trend analysis using digital technology and data mining (with due regard to protecting private and privileged information) in order to identify loss trends and preventive measures;
 - g. Analysis and prompt dissemination of situation reports to the Army leadership;
 - h. Interaction with other military services; federal, state, and local agencies; and industry to identify best practices and loss prevention strategies.
5. The expanded scope of the new Combat Readiness Center and safety transformation will enable our Army to preserve combat power and enhance combat readiness with cutting edge effectiveness.

Peter J. Schoomaker
General, US Army
Chief of Staff

Francis J. Harvey
Secretary of the Army

CF:
The Director of Army Staff
Assistant Secretary of the Army (Installation and Environment)



SAFETY SENDS

From the Director of Army Safety

13



Transforming to Preserve Combat Power

The U.S. Army Safety Center recently transformed to the U.S. Army Combat Readiness Center. The Combat Readiness Center is a knowledge center that “connects the dots” on all information that pertains to the loss of Soldiers... our combat power!

Knowledge is power. This simple truism is echoed in our adoption of Composite Risk Management (CRM). The more you know about the total hazards you face, the more effectively you can manage the risk. Real power comes from sharing actionable knowledge from the top to the bottom of your formation.

CRM recognizes that a loss is a loss—no matter where it happens—and every loss degrades combat power. During Fiscal Year (FY) 2004, our Army lost a Soldier every 32 hours to

an accident. FY04 was our worst year for accidental fatalities in the last 10. You can see from the red in the FY05 chart below that we are outpacing last year in almost every category.

Curbing this upward trend is a big challenge for our Army. Former President Dwight D. Eisenhower said, “If you can’t solve a problem, enlarge it.” In our case, enlarging the problem translates to viewing accidental and other losses in a larger context...ALL Army losses. We are developing the capabilities to take a more holistic look at how and why we are losing Soldiers.

To date, no single agency collects, analyzes, and reports such holistic data to allow commanders to apply CRM and reduce or prevent losses. In recognition of this void, GEN Peter Schoomaker, Chief of Staff, Army, and the Honorable

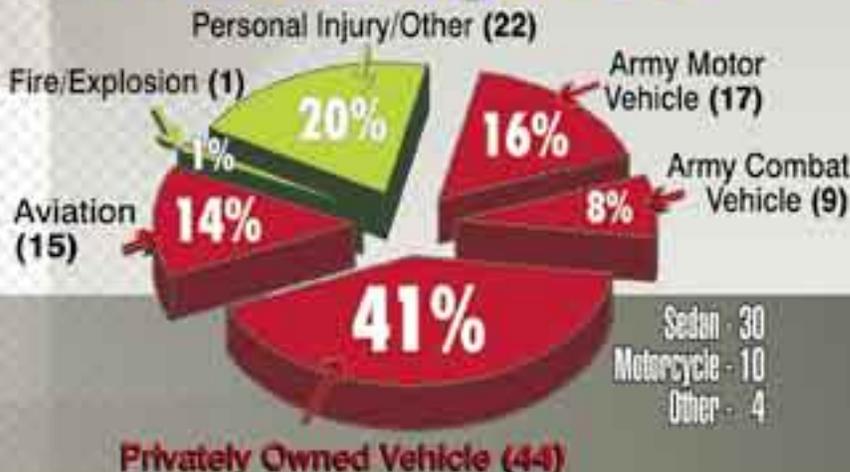
Francis J. Harvey, Secretary of the Army, expanded our mission and redesignated us as the Combat Readiness Center on 31 January 2005.

When we look at ALL losses—accident, combat, medical, and criminal—the true impact on our readiness emerges: We are losing a Soldier every 9 hours. Not only do we lose a precious life and comrade, but we also lose combat power and are required to recruit and train a replacement. This adds to the challenge of an Army at War that is transforming.

This name change signifies our role in enhancing combat readiness and, to be frank, frees us from the negative connotation the word “safety” holds for young Soldiers—those who are at highest risk. We will retain all our core competencies in safety,

If a problem

Total Army: 108



Everywhere Else: 65



FY04 to Present
(13 February 05)

1,325 Total Fatalities



Source: Military Casualties Division, DDP&A, AFM&A

We are losing Soldiers in accidents every 32 hours. When we take a holistic look at Soldier fatalities — ~~combat & non-combat~~ — we find a Soldier dies every 9 hours.

but our emphasis on CRM and readiness will increase. This strategy will be effective since all generations understand the importance of a fully functioning unit and strive toward that goal. What does this mean to you?

efforts, we will have the capabilities to report actionable knowledge back to you. Our goal is to be fast, holistic, digital, preventive, and predictive. Knowledge is power, but sharing this knowledge is what makes it actionable and powerful. We will gather data on all losses, but our primary attention will be on accidental

do. We also are collaborating with other organizations to connect the dots, not own them or do their jobs.

Shortly, we will go hot on a new program of quick-turn situation reports. These “preliminary loss reports” will contain a brief summary of losses and a near real-time synopsis of what we know so you are aware of the issue quickly. Whenever possible, we will alert you to trends as well. This service is in its infancy, and I look forward to your feedback as we refine it. We also have ambitious plans in the coming weeks and months to look at those things beyond fatalities that lead to lost workdays for both our Soldiers and DA civilians.

We continue to evolve to meet the needs of our transforming Army. When asked, “What can you do to enhance readiness?,” we want to be there with the knowledge and tools to help. Knowledge IS power ... combat power! ★

Joe Smith

BG Joe Smith
Director of Army Safety
CG, CRC

cannot be solved, enlarge it.”

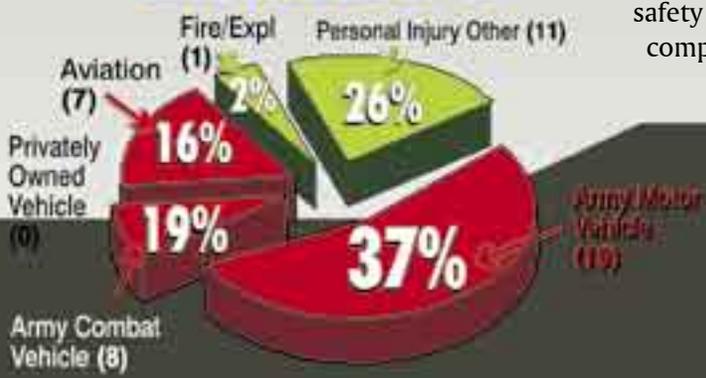
Dwight D. Eisenhower



We are taking a more holistic look at loss and providing you with a greater awareness of its overall impact on readiness. We also are accelerating our reports to you on what we know after a loss occurs. We are gearing up as your knowledge broker and data warehouse. By collecting loss information from disparate sources to distill and pass on, and along with our data mining

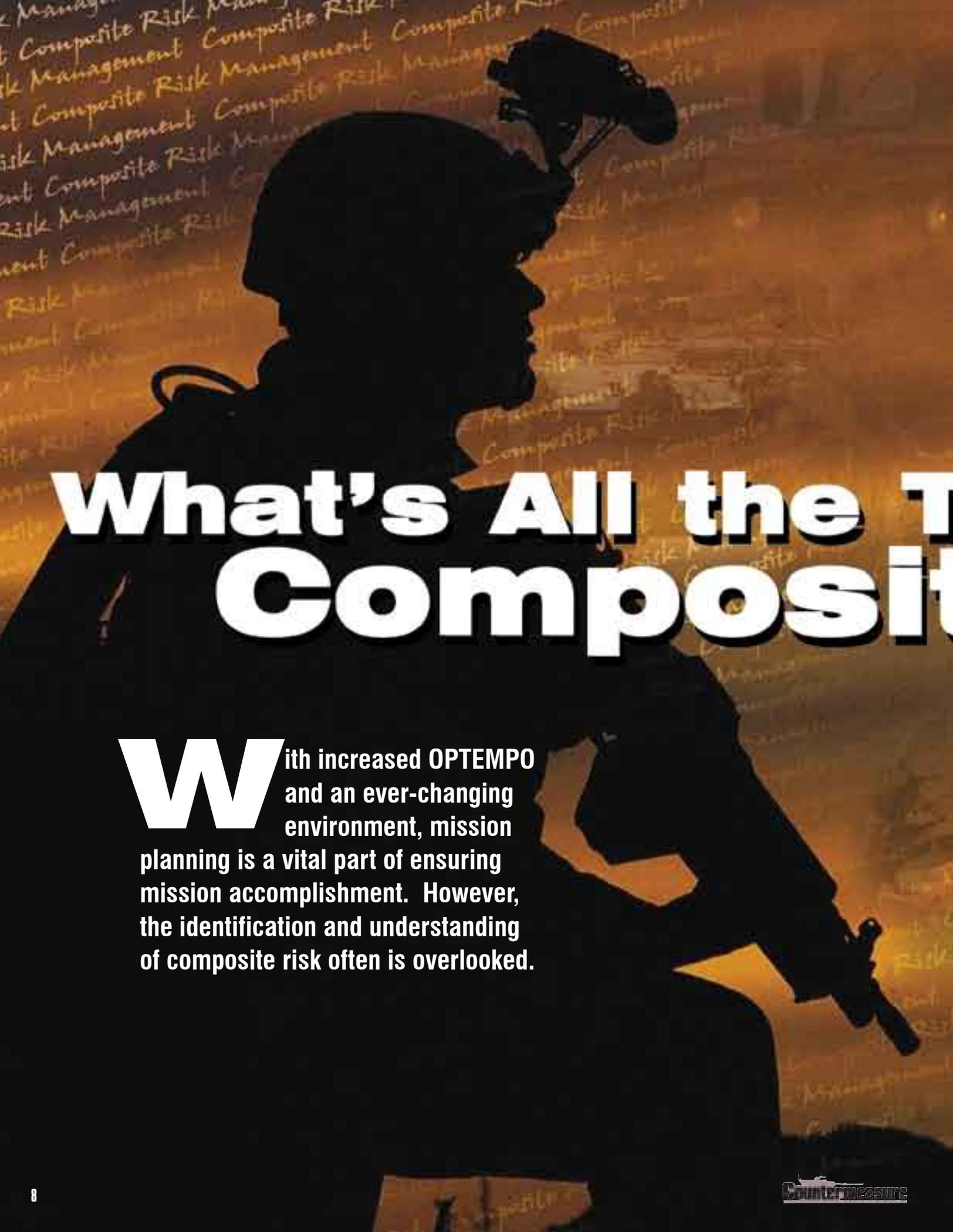
and selected combat situations where the specific cause or reason for the loss is unknown. The Combat Readiness Center will apply its own assets and leverage the capabilities of other relevant organizations to provide you with trends; lessons learned; applications for tactics, techniques, and procedures; and usable tools. Two items of note: We are not throwing the baby out with the bath water—safety is still a strong component of what we

CENTCOM AOR-43



FY05 Soldier Accidental Fatalities

As of 13 February 05



What's All the T Composite

With increased OSTEMPO and an ever-changing environment, mission planning is a vital part of ensuring mission accomplishment. However, the identification and understanding of composite risk often is overlooked.

Risk management is an integral part of mission planning at all levels. As part of the planning process, leaders and staff sections continuously try to identify hazards. Historical accident data provide planners with tools to assist in identifying hazards and implementing controls to mitigate those risks. But what about tactical hazards? Does tactical risk outweigh accidental risk? Or is there a composite of both tactical and historical hazards that can better prepare Soldiers for mission execution?

A review of combat and accident fatalities across the Army since the beginning of the Global War on Terror reveals an alarming trend. Accidents caused 57 percent of all Army fatalities, while combat-related activities accounted for the remaining 43 percent. Soldiers and Army civilians understand combat loss is a potential

us well. However, we must emphasize the need to assess all risks associated with any given mission. CRM does just that and builds upon the risk management process by including combat threats with accidental hazards. Mitigating existing hazards is not possible if they are not first identified, and individual Soldiers are a vital part of this process. CRM presents the question, “What’s going to kill me and my buddies—the enemy or an accident?” The CRM process allows commanders to choose another course of action when faced with excessive composite risk.

How can identifying composite risk aid Soldiers and leaders during mission execution? First, you must understand hazard-based risks versus threat-based risks. For example, the decision to operate Army motor vehicles without requiring all occupants to wear seatbelts

Talk About the Risk?

MAJ RON JACKSON
Accident Investigator

BRETT BLOUNT
Safety Specialist
U.S. Army Combat Readiness Center

outcome during war. Accidental fatalities are a different matter altogether—we must consider accidental loss of life as preventable and without purpose or merit. We experience a decrease in combat readiness whenever a Soldier or civilian is killed or injured, regardless of whether the loss is due to accident or combat. Does it matter if the death or injury was the result of combat or an accident? No—we only see the turmoil that accompanies the loss.

Composite risk management (CRM) is the next step in protecting our readiness. CRM gathers all hazards into one package and enhances combat power by enabling leaders and individuals to identify risk in all endeavors that could cause injury or death. The Army adopted the 5-step risk management program years ago and incorporated this process into our warfighting curriculum. This process produces excellent results and serves

represents a hazard-based risk. Although the use of seatbelts in and of itself does not cause an accident, by not using seatbelts Soldiers run an increased risk of flail injuries or being ejected from the vehicle during an accident sequence. Threat-based risks are those risks where enemy action has been reported and generally can be categorized by color-coding routes and locations within the area of operation. These areas are designated as high, medium, and low, with each category representing a composite risk factor.

Here’s an example. A convoy is required to upload and transport equipment within Forward Operating Base (FOB) X and then, when finished, relocate to FOB Y. The entire mission is expected to take 6 hours, with 2 hours at FOB X and 4 hours en route to FOB Y. Soldiers are required to wear seatbelts at all times while operating in the FOB areas; however, the unit instructs the Soldiers not to use seatbelts once they depart

Composite Risk Applications

“CRM gathers all hazards into one package and enhances combat power by enabling leaders and individuals to identify risk in all endeavors that could cause injury or death.”

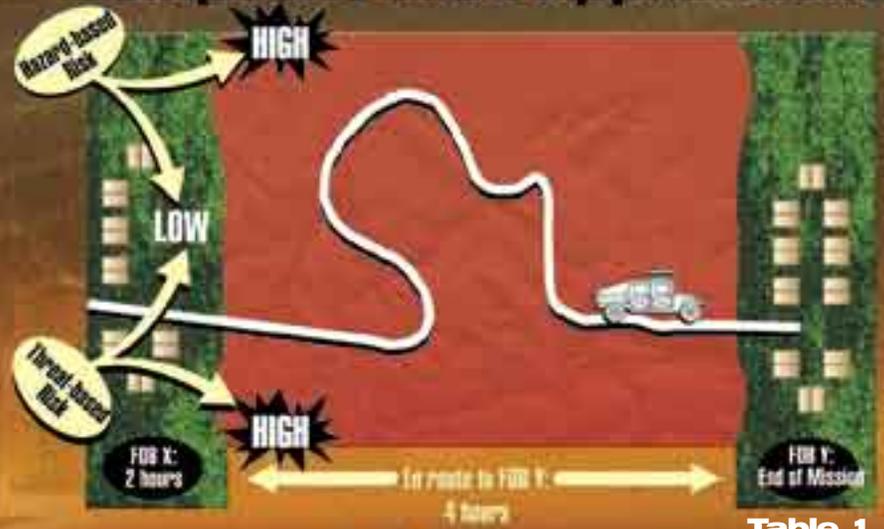


Table 1

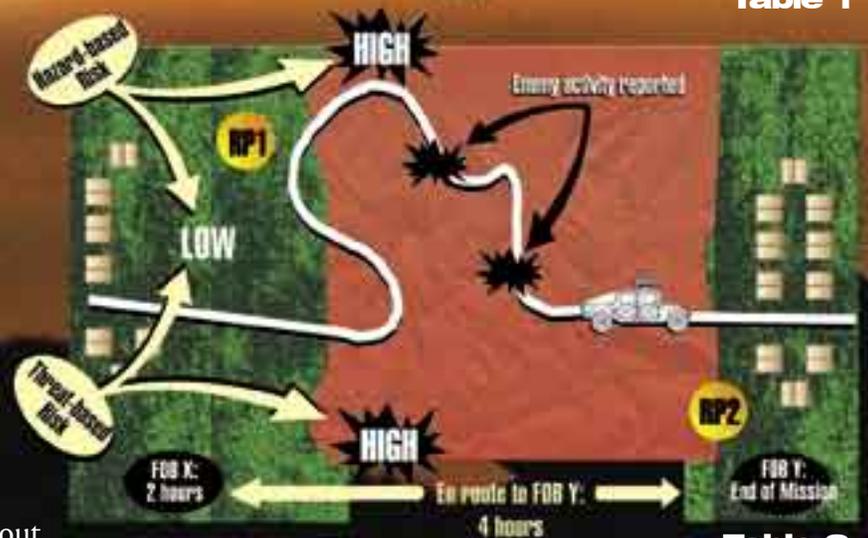


Table 2

the FOB. The decision to operate without seatbelts is based on the necessity to egress the vehicle in the event of an ambush. However, additional accidental hazards facing the vehicle occupants—accidental rollover or collision—are not considered. This decision places the convoy in a high risk-based operating environment, even without considering the tactical risks.

By analyzing the hazard-based and threat-based risks, we can determine that only certain areas of the route are known to have enemy activity. After applying threat analysis to route selection and mission planning, we can determine an alternate route or identify release points where the Soldiers can fasten or unfasten their seatbelts versus continually operating without them. As a result of combining these two elements, only a small segment, if any, of the mission might be conducted with a high hazard-based risk factor.

In the big picture, knowing and understanding composite risk assists leaders

and planners in applying risk management throughout the planning process. CRM provides adequate safety from the threat environment and also minimizes the impact of hazard-based risks encountered during operations. Combining these elements enables leaders to analyze mission parameters and helps to reduce all risk factors, thereby preventing Soldiers from continually operating in high risk-based profiles. Leaders should not limit risk assessment to combat threats; rather, they must expand their scope to include accidental hazards. Remember, CRM preserves combat power! 🚗

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Route Clearance Saves Lives

CPT CHRISTOPHER BUDIHAS
Brigade Assistant S-3
2nd Brigade, 25th Infantry Division

Improvised explosive devices (IEDs) are to Soldiers in Iraq what booby traps were to Soldiers in Vietnam. The popularity of these devices has spread among insurgents for a number of reasons. It's easy for the enemy to plant these devices and blow them up from a distance. IEDs are relatively easy to construct from the ordnance found all over Iraq, left from the fall of the former regime. All it takes to build an IED is a simple radio or electronic controlled device such as a cell phone; a blasting cap or fuse; and some type of explosive. Also, our Army is bound by the highways and roads that move our supplies, personnel, and equipment. We are often predictable targets on main supply routes (MSRs) and alternate supply routes (ASRs).

One of the ways to prevent or reduce IEDs from being employed in your area of operations is route clearance. What is route clearance? Generally, route clearance looks something like this: driving at a slow rate of speed (10 to 20 mph), scanning for suspicious items along the route, and then dismounting to clear those suspicious items or areas. Soldiers also must

dismount and clear all bridges, overpasses, signs, culverts, and guardrails.

To protect the dismounted troops, it's important that the force clears the area of any hiding ambushers. Always clear far to near. Keep your Soldiers in overwatch to cover the clearing element. If the clearing element is engaged, the Soldiers on watch can react quickly. Also keep the enemy's other weapons in mind. A 152 mm artillery shell has an effective casualty radius of up to 50 meters, so it's important for vehicles to stay at least 150 meters or further from the area being cleared.

While in Iraq, our company performed route clearance on all major MSRs and ASRs in our sector at least once a day. We also had Iraqi National Guard (ING) troops execute route clearance operations at sunrise, mid-morning, 2 hours before sunset, and in the evening to supplement overall coverage of the main roads. Because of the frequency and thoroughness with which we cleared the roads, we were attacked zero times in 5 months and found less than 10 IEDs in our sector. The police, ING, and locals said we cleared the roads so often

that insurgents did not want to risk being caught.

Sometimes even the best screening can't prevent an IED attack, however. We were fortunate, but keep the following tips in mind. Soldiers in a vehicle hit by an IED should drive through and get out of the area, if possible. If the vehicle is disabled, the Soldiers should provide immediate perimeter security and then spread out to a safer-size perimeter.

Rehearse these patrols, because they will save the lives of your fellow Soldiers in the end—and maybe your own. IEDs have taken far too many of our Soldiers already. Be smart, be safe, and make it home from the fight! —

Editor's note: This article originally appeared in its entirety under the title "So, You're Going to Iraq?" in the September-October 2004 issue of Infantry and was edited for content before its publication in Countermeasure.

Comments regarding this article may be directed to the editor at (334) 255-1218, DSN 558-1218, or by e-mail at julie.shelley@safetycenter.army.mil.

The accident sequence

The platoon was returning to their forward operating base when they received a follow-on mission to clear a route of possible enemy ambushes. It was midnight, and they proceeded along unimproved roads under blackout conditions. As the convoy began to cross an aqueduct, the platoon leader noticed a 20-foot drop-off into a spillway to his right. He did not feel it was necessary to pass this information on to the other vehicles in the convoy.

Behind the platoon leader, the driver and platoon sergeant in the trail vehicle were focusing on the vehicle in front of them. The seven Soldiers riding in the HMMWV's cargo area were scanning their sectors for enemy insurgents. They did not notice the drop-off as the vehicle began to cross the aqueduct. Their HMMWV drove too close to the aqueduct's edge and rolled over into the spillway. The vehicle landed upside down and trapped four of the seven Soldiers. Two Soldiers were freed and evacuated immediately, but the other two were not removed until a wrecker lifted the vehicle 3 hours later. One Soldier was fatally crushed by the weight of the vehicle.

Why the accident happened

- The platoon leader did not conduct a risk assessment for the mission, which should have included driving over unimproved roads during limited visibility.
- The platoon leader did not tell the other vehicles' crews about the drop-off.
- The driver and senior occupant were not scanning the road for hazardous conditions.

Why the severity of the injuries

- An armor plate added to the back of the cab during the unit's deployment was missing three bolts before the accident. Checking the plate for loose or missing bolts is not included in the normal preventive maintenance checks and services (PMCS) for the HMMWV. The plate broke off when the vehicle hit the bottom of the spillway and was lodged on top of the deceased Soldier.
- A 70-pound, locally manufactured armor plate that slid onto the cargo rail fell off during the

accident and landed on another Soldier. The unit fitted the cargo beds of their HMMWVs and LMTVs with these plates, but did not bolt them to the vehicles.

Why the recovery took 3 hours

- The platoon sergeant was trapped upside down in the passenger's seat. The vehicle could not be lifted until he was removed from his compartment. The unit did not have a pre-accident plan that listed who to call in case Soldiers were trapped in their vehicles. The brigade tactical operations center summoned an Air Force downed rescue aircraft team from a distant base, where the local firefighters had Jaws of Life equipment.
- The unit chain of command was on top of the aqueduct coordinating evacuation and security. Once the platoon sergeant was removed from the vehicle, medical personnel did not tell the wrecker crew it was safe to lift the vehicle. Instead, they were focused on treating the two remaining Soldiers who were trapped under the HMMWV. This lack of a central point of command and control overseeing the recovery and evacuation at the spillway's bottom resulted in a 40-minute delay in lifting the vehicle.

Recommendations

- Commanders and leaders must conduct a risk assessment for each mission, including follow-

Why Didn't

LTC JOSEPH MILLER
 Ground Accident Investigator
 U.S. Army Combat Readiness Center



on missions. They must conduct a composite risk assessment and incorporate tactical, threat-based risks with accidental, hazard-based risks. This composite risk assessment is a living document that will become the commander's running estimate for each mission.

- Convoy commanders must relay hazardous road conditions to their subordinate leaders. Losing a vehicle and Soldiers to a rollover is a loss of combat power that jeopardizes the mission.

- Senior occupants in the passenger seat must continually scan for hazardous road conditions. This is especially true while driving in blackout conditions, where night vision goggles can affect depth perception.

- Supervisors and drivers must ensure all armor, including add-on armor plates (level II) and locally manufactured armor plates (level III), are bolted securely to their vehicles. They must incorporate a bolt check in their before-operation PMCS.

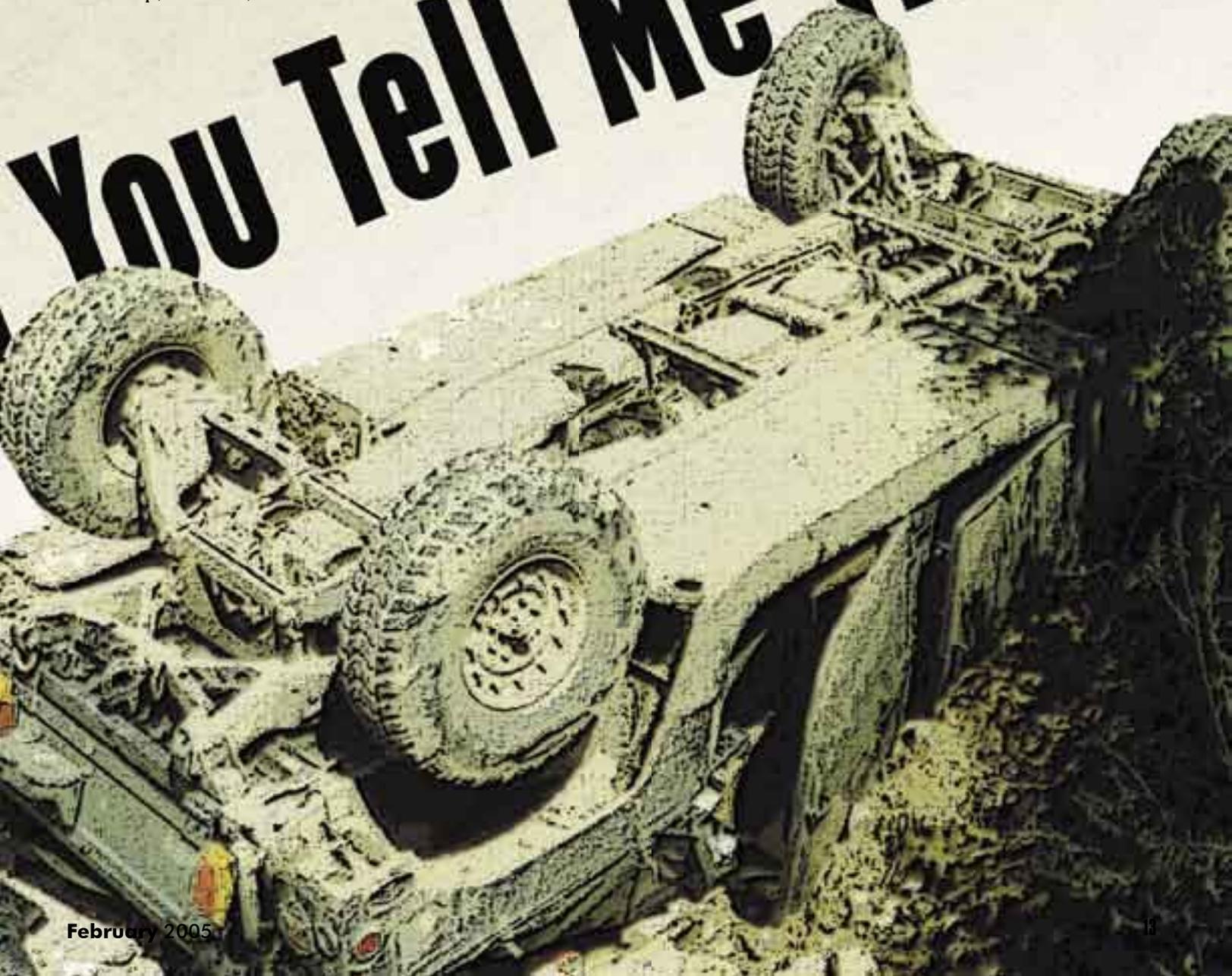
- Units at all levels must develop, rehearse, and

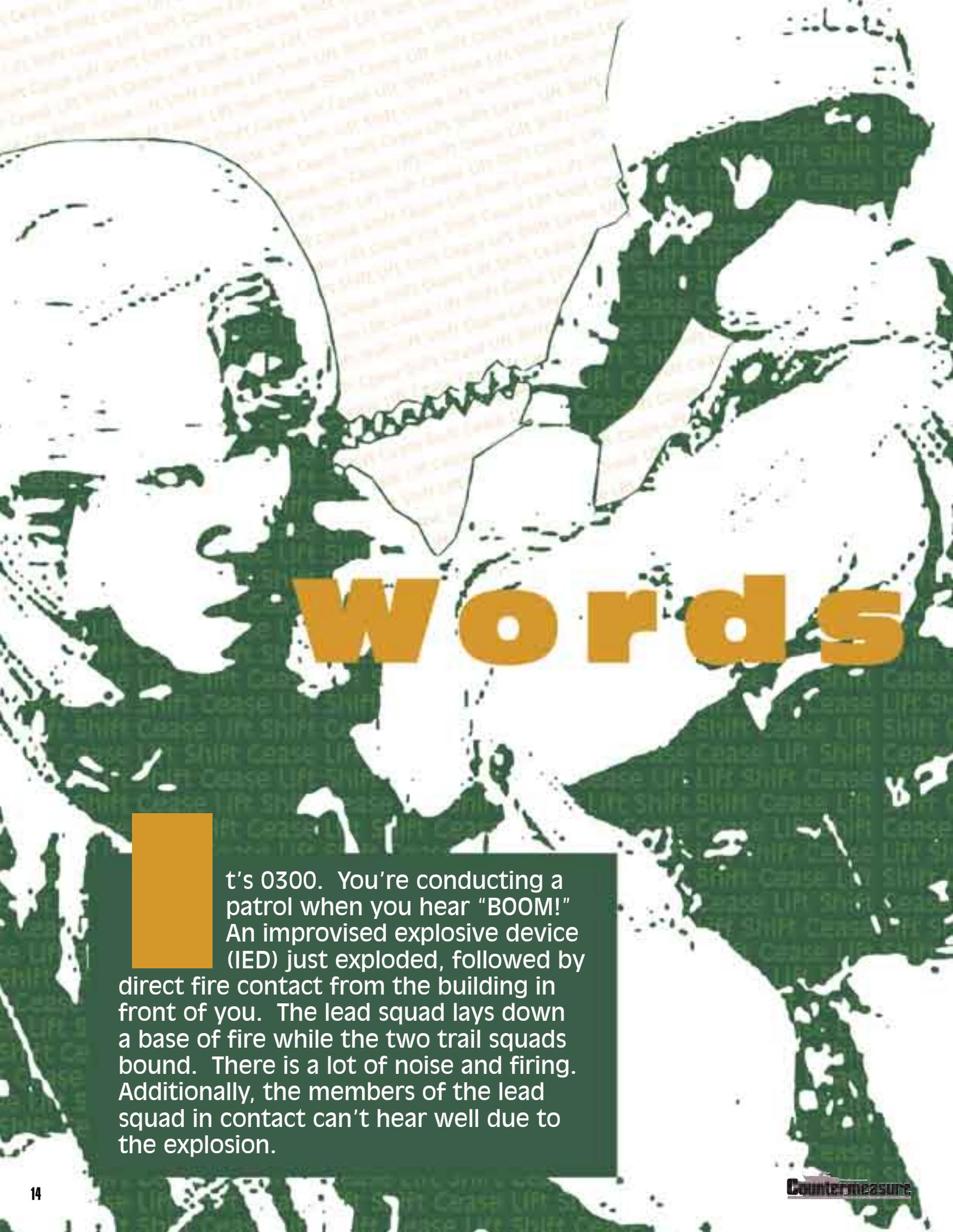
evaluate their pre-accident plan. The executive officer or battle captain of a unit without a pre-accident plan must think off the top of their head as to who should be notified, and vital support may be omitted unintentionally. A unit with a pre-accident plan, however, has a checklist to follow with all necessary points of contact listed. The pre-accident plan then can be passed to the next deploying unit.

Be safe and make it home from the fight!

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YOU Tell Me That!





Words

It's 0300. You're conducting a patrol when you hear "BOOM!" An improvised explosive device (IED) just exploded, followed by direct fire contact from the building in front of you. The lead squad lays down a base of fire while the two trail squads bound. There is a lot of noise and firing. Additionally, the members of the lead squad in contact can't hear well due to the explosion.

You move with the assault element. As you approach the objective, you radio the base of fire squad leader and ask him to shift fire. The squad leader yells “shift fire,” but several of his squad members mistake his words for “lift fire”—the prearranged signal to stop firing—due to the noise and their damaged eardrums. As a result of this miscommunication, two of the assault element’s members are killed.

What went wrong? Did the base of fire confirm the signal? Could they see? Were they receiving effective fire? Here’s another question: Why did the platoon leader use “lift fire” instead of “cease fire?”

The bottom line is that words matter. About every 3 years we discuss the topic of “lift” and “shift” fires. It has come to our attention, and we believe it is necessary to highlight some key definitions to clear up a few fairly ingrained misconceptions.

Field Manual (FM) 101-5-1, *Operational Terms and Symbols*, provides common language for all Army forces to use. As long as these terms are used correctly, there are few problems.

However, when these terms are used incorrectly—or worse, when we don’t know we’re using them incorrectly—we run into problems.

Shift, lift, and cease fire are defined in FM 101-5-1 as follows:

Lift fire—In direct fire, “lift fire” is the command to raise the cone of fire so the beaten zone strikes the target, but the space between the target and the firing weapons is safe for maneuver by friendly forces.

Shift fire—“Shift fire” is the command to

move the cone of fire in a direction away from a friendly maneuvering force so enemy forces continue to be struck by the beaten zone at the same time the friendly unit moves.

Cease fire—“Cease fire” has two purposes. One is a command given to any unit or individual firing any weapon to stop engaging the target. The phrase also is given to air defense artillery units to refrain from firing on, but continue to track, an airborne object. Missiles already in flight will be permitted to continue to intercept.

You might be thinking this is just language and not important. But let’s look at some practical reasons for keeping your words straight. “Shift” sounds a lot like “lift,” and the two could be confused during noisy combat operations. We use “cease fire” on the range in training. Therefore, it makes sense to use the same terminology in combat that every Soldier hears in training. Also remember the value of visual signals in training. FMs 7-0 and 7-1 contain excellent guidance on visual signals.

Matter

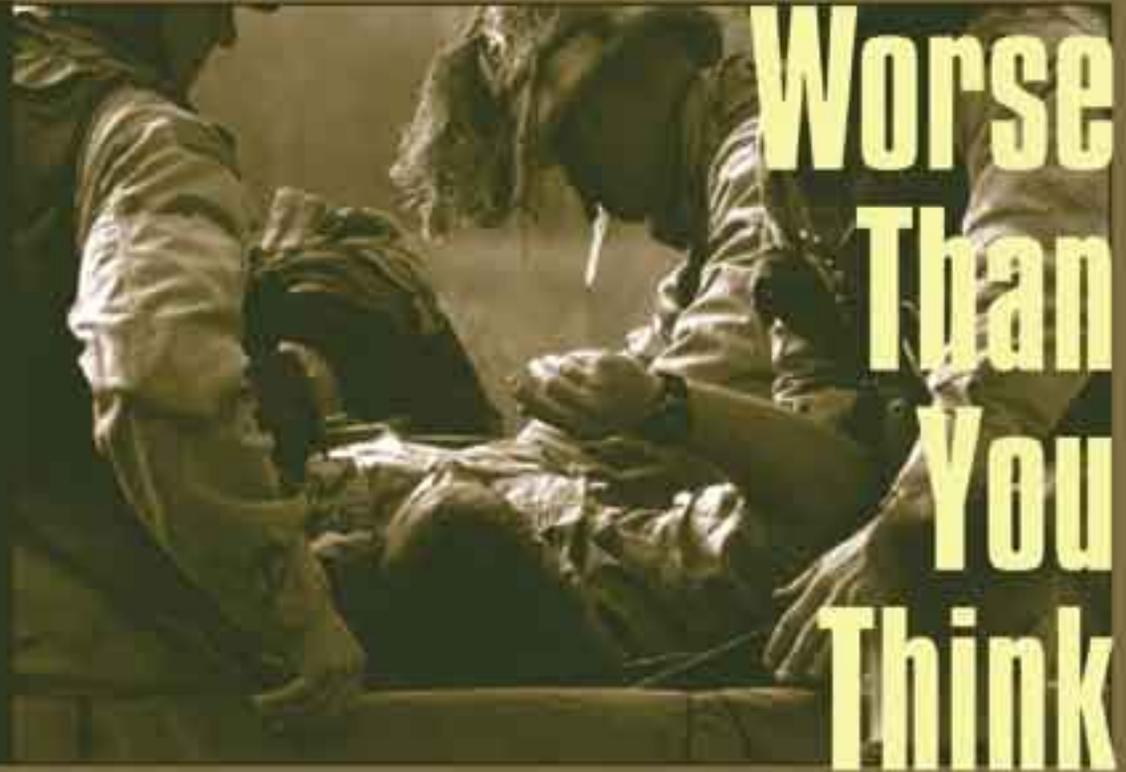
MAJ MICHAEL ACORD
C Co., 2-11 Infantry
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Be careful with the words you choose, especially in combat. And remember to enforce the wearing of the yellow-red earplug during combat operations to protect your Soldiers’ hearing. Your life and the lives of your Soldiers depend on good communications. Words matter! 

Editor’s note: This article originally appeared in its entirety in the May-June 2004 issue of Infantry and was edited for content before its publication in Countermeasure.

Comments regarding this article may be directed to the editor at (334) 255-1218, DSN 558-1218, or by e-mail at julie.shelley@safetycenter.army.mil.

With traumatic injuries, such as those seen in combat or vehicle accidents, it's hard to know which injured Soldier needs care first. However, sometimes the Soldier that looks okay is the one who's in most desperate need of help. Although the situation below didn't occur in combat, it happened on duty and under circumstances similar to many accidents in theater—a vehicle rolled over while the driver was speeding. Read on for the lessons this Soldier learned the hard way.



Worse Than You Think

ROBERT WOODHAM
Safety Specialist

It was a cold, windy day in November, and the snow was blinding as we drove downrange on an ammunition training mission. Everything was running smoothly, and the weather was actually normal for that time of year in Alaska. However, things were about to take a tragic turn.

As my partner and I were rounding a curve on a steep grade, we noticed a vehicle from another company had rolled over at an apparent high rate of speed. We saw that two young Soldiers—the vehicle's only occupants—had been thrown clear of the vehicle, which was beginning to burn. One of the Soldiers was trying to help the other, who was bleeding badly and screaming in obvious pain. I covered and dressed that Soldier's injuries as best I could. The other Soldier did not appear to be as badly injured and was walking and talking clearly. However, there were two things about him I will never forget. He had several deep cuts, but they weren't bleeding

badly. Additionally, his eyes were big, black, and vacant. However, since he was walking and talking, I didn't think he was hurt badly.

Our radio wasn't working well enough to give emergency personnel our location, so we loaded the men into our vehicle and headed for the emergency room. Both men were placed on gurneys and rushed inside. The doctor treated the screaming and bloody Soldier first. The other Soldier was told to wait.

My partner and I went back to work. Later that day we returned to the emergency room to check on the men. We were shocked to learn the Soldier who hadn't appeared badly injured died while waiting for treatment. The other Soldier was doing well in the recovery room.

I was crushed. What did I do wrong? What happened? I knew that man—we weren't great friends, but he was a fellow Soldier. One of the nurses took me aside and explained what had happened. Apparently the

Soldier died from internal bleeding,

trauma, and shock. If the doctors had known he wasn't bleeding from his wounds, they would've treated him differently. I told the nurse I knew he wasn't bleeding, but I didn't think it indicated anything serious. A man died because I didn't know what to tell them.

I was a young, impressionable buck sergeant then. In the 30 years after that accident, I never failed to share this story with my Soldiers in the hope they wouldn't repeat my mistake. Many of you are in combat now and will see things even worse than I did that cold winter day. Learn the signs of shock and basic first aid for combat injuries. Take care of yourself and your fellow Soldiers, and remember that sometimes things are worse—much worse—than they appear. 

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Editor's Note: The following narrative is one of the first stories submitted to the Combat Readiness Center's new Warrior Stories Web site. This site allows Soldiers to share their "war stories" and near-miss experiences with other Soldiers just like them, whether they are in combat or in garrison. Selected Warrior Stories submissions will be published in each month's *Countermeasure*. Please visit the site at https://safety.army.mil/warrior_stories/ and share your story today!

A Juggling Fool

ANONYMOUS

The mission was simple: drive to Baghdad from Kuwait. All necessary preparations were made, stop and rest areas were mapped, and alternate drivers were designated and appointed. However, one topic that was omitted from the safety briefing was "driver distraction."

I was tired when I began my 0300 to 0700 driving shift. I was only somewhat rested from riding in the HMMWV's backseat, waiting for my turn to drive. It was pitch black when I started driving, so when the sun came up between 0530 and 0600 my eyelids were beginning to get heavy. I fought to stay alert, and my "shotgun" (truck commander) was helping me by keeping the conversation up.

It was then that I realized I'd left my 30-round magazine lying on top of the SINCGARS. But it wasn't there now! I tried to find the magazine while at the same time attempting to drive and maintain a safe convoy distance between vehicles. I looked around the radio and between the gear shift level and floor for my magazine, but without success. In a blink of an eye, I looked up and saw that the vehicle in front of me was now on my left and someone was waving at me. I realized I'd inadvertently sped up and the

driver had swerved to the left so I wouldn't hit him. My highway juggling act had almost ended in disaster. I decided to stop looking for the magazine and focus on driving until the next stop.

The 30-round magazine was right where I'd left it—between the radio and the radio support bracket. I'm grateful that as I searched for the magazine I unknowingly steered slightly to the right. If I hadn't, I would've slammed into the vehicle ahead of me and compromised the mission or, even worse, put my life, my truck commander's life, and the lives of the other guys in jeopardy. I was already tired, and when my focus shifted to finding the magazine, I very nearly did just that. Imagine an accident in the middle of nowhere with a 57-vehicle convoy carrying more than 200 Soldiers (and my lost magazine!). That situation definitely is not acceptable anytime. Stay alert to stay alive! 🙌

Comments regarding this article may be directed to the editor at (334) 255-1218, DSN 558-1218, or by e-mail at julie.shelley@safetycenter.army.mil.

Weapons Safety:

On the Range, Around the Arms Room, and In Bet

2LT ERIK JOHNSON

Safety Officer, Task Force Protector

Camp Bondsteel, Kosovo

Weapons safety is a big issue in our Army today for every Soldier, whether in garrison or in theater. Negligent discharges and range accidents continue to kill and injure far too many of our irreplaceable troops. 2LT Johnson recognized this trend and wrote the following article for his unit's newsletter before passing it on to *Countermeasure*. Please read on for a good lesson in the "basics" of weapons safety.

On the range

The first priority in range operations is to assign an officer in charge (OIC) and range safety officer (RSO). Ensuring safe operations on the range is the OIC's primary responsibility. The OIC, who is required to be qualified on the weapon system being fired, must be present during firing. Ultimately, the OIC determines when it is safe to fire, and also supervises misfire and cook-off procedures. The OIC also ensures standard communications are maintained during the range exercise.

A commissioned officer typically serves as OIC and designates the RSO.

The RSO may be an officer, warrant officer, or E6 and above. A qualified civilian also may serve as an RSO. The RSO must complete a range safety program of instruction developed by the battalion. Like the OIC, the RSO must be qualified on the weapons being fired. Both the OIC and RSO must be certified by range control and receive a safety briefing before assuming command of range operations.

Several important "housekeeping" items must be completed by the OIC before the range exercise begins. A current copy of the technical manual for the weapons being fired should be on hand and easily accessible for Soldiers who might encounter a problem with their weapon. All personnel must be briefed on MEDEVAC and cease-fire procedures, and vehicle operators must be trained in radio operations to call for help in an emergency. Medical personnel also should be briefed on the best route to the nearest hospital.

etween

At the conclusion of range operations, the OIC and RSO must ensure weapons are cleared of ammunition and that ammunition is turned in properly to the ammunition point. Once the range is cleared, it's back to the unit arms room for weapons turn-in. The arms room requires as much attention to detail and safety as the range.

In between

Three primary dangers exist between the range and arms room: fratricide, physical injury, and poor weapons maintenance. Horseplay must be prohibited at all times. Weapons should be kept on safe, and Soldiers must consider their weapons as loaded at all times. Soldiers also should practice

“Weapons should be kept on safe, and Soldiers must consider their weapons as loaded at all times.”

Around the arms room

High-explosive ammunition—along with flame-producing items such as blow torches, flammable clothing or linens, and combustible liquids including gasoline—should never be stored in the arms room. A serviceable fire extinguisher must be available in the arms room at all times. The extinguisher's chemical agent should be rated for the appropriate categories of fire that could erupt in the room—ABCD-category is the preferred chemical agent.

Ammunition containers should be marked properly. A complete inventory of items stored in the arms room should be on hand for review at all times. If hazardous chemicals are stored in the arms room, the appropriate hazard symbols must be posted in plain view.

safe weapons lifting, carrying, and balancing techniques, which are especially important with heavier weapons like the medium machine gun. Rest halts should be scheduled and taken on time; heavy loads should be rotated among the unit's troops. A weapon should never be used as a supporting or pulling device, and muzzles should be covered to prevent clogging. The OIC and RSO must establish a weapons lubrication policy and enforce cleanliness standards.

Working with weapons is an inherently dangerous job. Consider all the risks involved, and perform your missions with due precaution. By doing so, you will help ensure the safe return home of not only yourself, but your fellow Soldiers as well. Be safe! 🖱️

Contact the author at DSN 781-6352 or by e-mail at erik.n.johnson@us.army.mil.

No weapons of mass destruction may have been found in Iraq, but that doesn't mean they're not there. Nuclear, biological, and chemical (NBC) weapons from many different countries continue to proliferate throughout the Middle East and Southwest Asia.



The possibility of an NBC attack is an ever-present threat to our Soldiers in these regions. As such, it is very important that Soldiers know how to inspect, clean, and store their respirators in the event of an NBC attack.

Every Soldier in the Iraq and Afghanistan theaters is issued NBC protective equipment prior to their deployment, including a mask and respirator. The full-face negative pressure respirator is the most common respirator found in theater. With this type respirator the Soldier's face is covered with a shield, but they must use their own lung power to bring air through the filters. These filters allow the user to breathe "clean" air by removing specific contaminants from the air that passes through the filter cartridge.

The desert environment in Iraq and Afghanistan can cause problems with NBC equipment. Soldiers must ensure they keep their respirators protected from the environment. Filters can become clogged with sand, which reduces their effectiveness in an attack situation. Besides clogging, the filters also are susceptible to environmental damage, with the end result being a reduction in their effectiveness. Basically, wearing a respirator with a damaged or clogged filter is like not wearing any protection at all.

How does a Soldier keep their respirator safe? First, the Soldier must inspect their respirator and

Check Your NBC Equipment

LINDA ORDING
Safety Specialist
Corpus Christi Army Depot, TX



mask on a routine basis, perhaps daily. All the straps should be in good repair, and the Soldier should look for any cracks or breaks in the plastic and face shield. This step is very important—in the event of an NBC attack, those cracks and breaks could provide an avenue of exposure to the Soldier.

Once the structural integrity of the mask has been inspected, the Soldier should check the filters. Each filter comes with a plug that protects it from environmental damage and "loading." The filter is designed to hold a specified amount of contaminant (including sand), and anything over that load will result in the contaminant reaching the Soldier. The Soldier should inspect the filter for visible signs of damage such as cracks, and also breathe through the filter to determine difficulty caused by loading. If the respirator or filter is damaged in any way, the Soldier should immediately be issued a new respirator.

The Soldier also should perform a fit test along with the above checks. The Soldier should put the respirator on, place their hands over the cartridges, and inhale. The mask should collapse slightly upon inhalation. The Soldier then should place a hand over the exhalation valve and exhale, at which time the mask should bulge slightly. There should be no leakage around the mask's edges—no leaks indicate the Soldier is wearing the mask properly.

Proper storage, in combination with these checks, will ensure the respirator provides the best possible protection for the Soldier wearing it. If you're not sure how to correctly perform these checks or have questions about storing your equipment, ask your unit's NBC officer or NBC NCO. NBC equipment is a vital part of bringing our Soldiers home safe from the fight. Make sure yours is up to standard!

Contact the author at (361) 961-2326 or by e-mail at linda.ording@us.army.mil.

Samurais Fight the Safety Battle

CPT DANNY REICHARD
Commander
HHD, 35th S&S BN
Camp Zama, Japan

Most leaders will tell you that one of the most difficult parts of their job is getting safety through to their young Soldiers. To combat this challenge, the 4-23 Infantry in Fort Richardson, AK, implemented the Unit Mission Protection Council (UMPC) in 2004 with much success. The program involves young Soldiers in the risk management process and gives them responsibility for their own safety. Building upon the achievements of the 4-23, the 35th Supply and Service Battalion at Sagami Army Depot, Japan, developed their own version of the UMPC—the Samurai Protection Council (SPC). CPT Danny Reichard, commander of the 35th’s Headquarters and Headquarters Detachment, discusses the SPC’s achievements in the article below.



The SPC also performs risk assessments for barracks, Government housing areas, and Morale, Welfare, and Recreation grounds and facilities frequented by Samurai Soldiers. Any hazards or findings are discussed during the SPC’s monthly meetings and formally documented. Recommendations then are forwarded to the appropriate office for resolution.

It’s difficult to pinpoint when an SPC recommendation specifically prevented an accident. However, our unit has gone over 365 days without a DUI. We haven’t experienced any military vehicle accidents since the SPC began, nor has a single Soldier been injured in a training accident. These facts show that Samurai Soldiers are thinking safety. These programs work—try one in your unit today! 🚗

Contact the author at DSN 268-4384 or by e-mail at danny.reichard@us.army.mil.

The SPC is described best as a “council of Soldiers designed to protect Soldiers.” We accomplish this by fostering “life skill” changes within each of our Soldiers. These changes arm every Soldier with the “weapons” to protect themselves both on and off duty. For example, we teach our Soldiers—particularly the junior enlisted—the value and necessity of conducting risk assessments for off-duty tasks. Whether the assessment is performed mentally or formally written out, the idea is the same—every task has risks, and they must be recognized. This “protect myself” mindset is necessary whether a Soldier is

on the battlefield in a convoy or simply changing a light bulb at home.

The SPC is involved in conducting risk assessments for all operations conducted by the unit. The SPC meets collectively each month and reviews the unit’s quarterly training brief for potential hazards. After the review is complete, the council begins risk assessments for each of the upcoming training events and identifies risk mitigating actions. Company leadership then steps in and gives the council recommendations based on the previously recognized hazards and risk mitigating actions.

Do you love to roll on the throttle, dig deep in the turns, and feel the road on a motorcycle? What about driving? Do you enjoy cross-country trips, or do you get a kick out of squeezing every ounce of performance from your car? How about sports? Do you like team sports such as basketball, football, or soccer? Or are you into extreme sports such as snowboarding or Moto-X? How about when you're at home? Do you enjoy partying, relaxing in your pool, or firing up your barbecue? And on the more serious side, do you work at a job where the real threat is not enemy action but an accident? Wherever you are and whatever you enjoy doing on your off-duty time, *ImpaX* is about getting the best out of life

that, *ImpaX* is the perfect place for you to talk about how you've learned to enjoy your favorite sport or off-duty activity safely. *ImpaX* is also a great place to share your stories if you've had a close call and gained some good lessons learned. After all, why not share the wealth and keep someone else from getting injured? Just e-mail your story to **robert.vanelsberg@safetycenter.army.mil**. Don't worry if you're not a trained journalist—just send the facts as if you were sharing your experience with a friend.

ImpaX is for you! It was created and designed with you in mind. If you're a member of the Army family and want to try *ImpaX* on for size, send your e-mail request to **sharrel.forehand@safetycenter.army.mil**, or mail your request to: U.S. Army Combat Readiness Center, ATTN: *ImpaX*, Bldg. 4905, 5th Avenue, Fort Rucker, AL 36362-5363. 

impaX IS FOR YOU!

while avoiding the painful accidental "impacts" that can ruin your day.

So exactly what is *ImpaX*? *ImpaX* is the Army's newest safety magazine and is intended to complement *Flightfax* and *Countermeasure* by addressing non-tactical safety themes such as driving, sports and recreation, and home and industrial safety. Because vehicle accidents pose the biggest threat for accidental death to the Army's people, *ImpaX* will place a special focus on driving safety. Inside the magazine you'll see automotive safety articles including crash test results, proper vehicle maintenance, driver skill improvement, new safety developments, and more.

Because *ImpaX* is not just a magazine for the people of the Army but also by them, it will be chock-full of true-life stories from the people you rub elbows with every day—fellow Soldiers, family members, and Army civilians. Because of





ACV

Class C

■ Two Soldiers suffered fractures to their legs when the Strykers they were driving collided during a mission in blackout conditions. One of the Strykers rear-ended the other during the accident sequence. Both Soldiers were hospitalized for their injuries.



AMV

Class A

■ Soldier was killed when the HMMWV he was riding in overturned. The Soldier was ejected from the vehicle when its door separated during the rollover. The HMMWV was operating in blackout conditions at the time of the accident.

■ Soldier suffered fatal injuries when the HMMWV he was driving rolled over. The HMMWV was towing another HMMWV down a hill when it jackknifed, ran off the roadway, and overturned. The truck commander suffered minor injuries.

■ Soldier died when the 5-ton truck he was riding in ran off the roadway and overturned into a 15-foot culvert. Two other Soldiers in the truck suffered serious injuries. The Soldiers were returning to base from a rest and relaxation break at the time of the accident.

■ Soldier was killed when the armored non-tactical vehicle he was riding in ran off the roadway and overturned. The foreign contractor

driving the vehicle reportedly lost control of it, causing the accident.

■ Soldier suffered fatal injuries when the up-armored HMMWV he was riding in overturned. The driver swerved the vehicle to avoid colliding with a truck immediately before the rollover. Two other Soldiers in the HMMWV were injured. The deceased Soldier was acting as the vehicle's gunner and was ejected during the rollover.



Personal Injury

Class A

■ Two Army contractors were killed when an explosion occurred in the propellant storage bunker in which they were working. No other details were reported.

■ Soldier collapsed and died near the finish line of his deployed camp's Army Ten Miler. The Soldier was participating in the ruck walk portion of the event. Numerous medical personnel, including doctors, were on site and administered first aid to the Soldier, who was airlifted to a military hospital. The Soldier was pronounced dead at the hospital.

■ Soldier collapsed and died during the Army Physical Fitness Test. The Soldier was transported to the local medical center, where he was pronounced dead.

■ Soldier suffered fatal gunshot wounds when he was caught in the crossfire during a firefight. The Soldier was wounded by enemy fire and attempting to return to a friendly position when he was hit by 5.56 mm (M16) rounds.

Class B

■ Two of Soldier's fingers were amputated when a munition exploded in the back of a HMMWV he was clearing out. An M42 submunition is suspected to have detonated and caused the injury.

■ Soldier's fingers were amputated when an unidentified munition exploded in his hand. The Soldier was clearing bunkers when another Soldier handed him the metal object, which subsequently detonated.

Class C

■ Soldier suffered fractures and other injuries to both feet when a HMMWV ran over them. The Soldier was acting as a ground guide for the HMMWV at the time of the accident. The accident was attributed to the Soldier walking too close to the front of the vehicle.

Transformation of U.S. Army Safety Center (USASC) to the U.S. Army Combat Readiness Center (USACRC)

Why Are We Changing?

★ The current Army safety structure and policy is not postured to meet the challenges of a transforming Army at War and the new Soldier generation.

★ Our immediate action is needed to attack the climbing fatality rate, both accidental and combat, using the expertise at the U.S. Army Combat Readiness Center and other agencies in the Department of the Army.

★ Currently, there is no normalized collection of threat data in a holistic, composite manner, which allows lessons to be immediately learned and rapidly applied across the Army.

★ Our transformation will allow focus on sustaining readiness with a cultural shift to managing all facets of risk and hazards at every level by improving training in Composite Risk Management, implementing interactive Web-based tools, marketing personal messages, collecting mishap data, and developing predictive analyses through data mining.



U.S. ARMY COMBAT READINESS CENTER

Making a Difference
for the
Soldier.

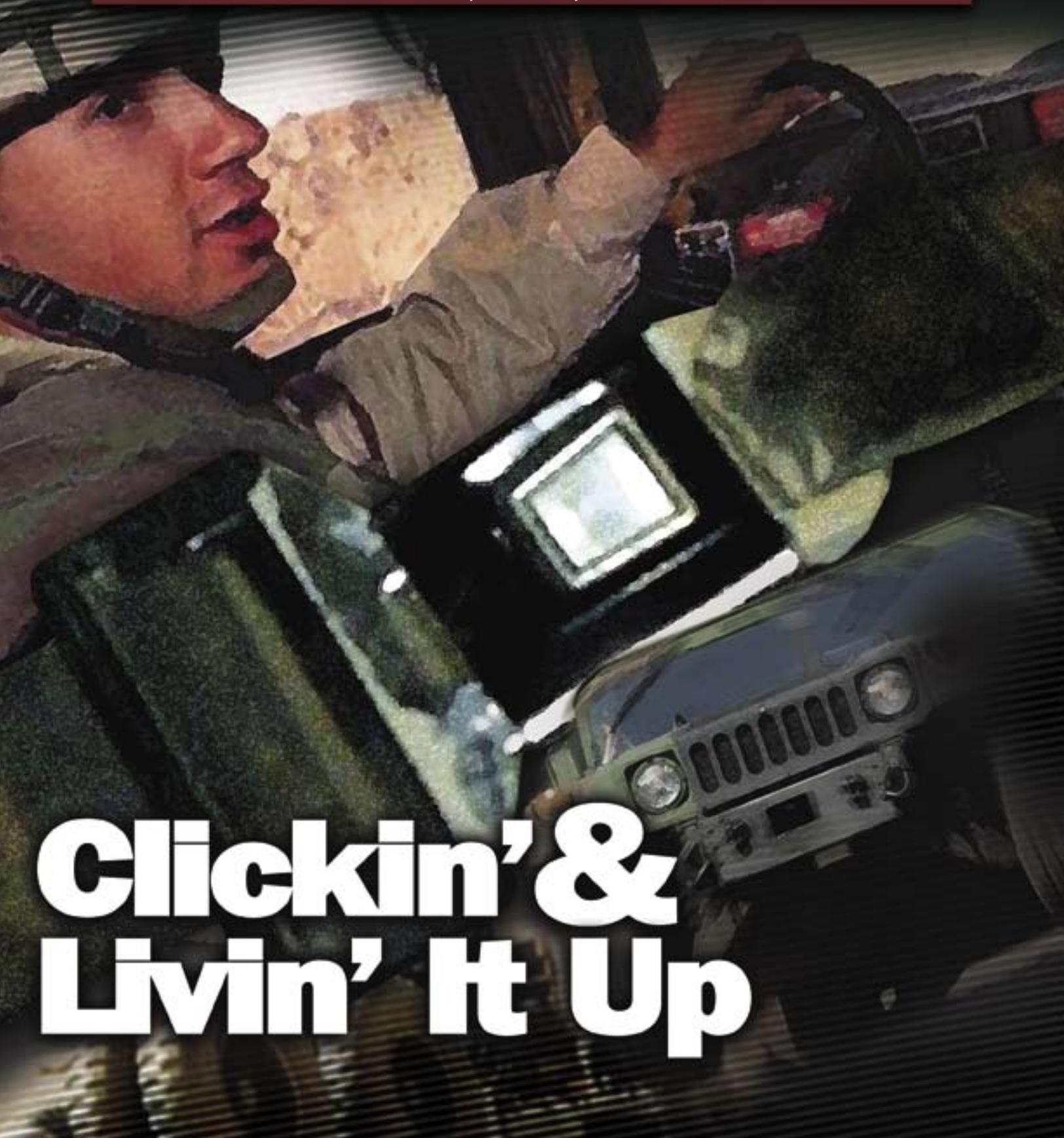
ARMY GROUND RISK-MANAGEMENT INFORMATION

Countermeasure

VOL 26 NO 3

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MARCH 2005



Clickin' & Livin' It Up

Countermeasure

CONTENTS

- 3** Why Should I Wear My Seatbelt?
- 8** On a Roll to Die
- 10** Danger Lurks in Combat's Shadow
- 12** Investigator's Forum
It Was an Easy Range
- 14** Missing Something?
- 16** Your Training, Your Way
- 18** That's Not the Way We Do It!
- 19** Accident Briefs
- 20** Every 9 Hours

Special Insert:
Composite Risk Management Poster
Rollover Poster

Top 5 features



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Commander/Director of
Army Safety

COL John Frketic
Deputy Commander

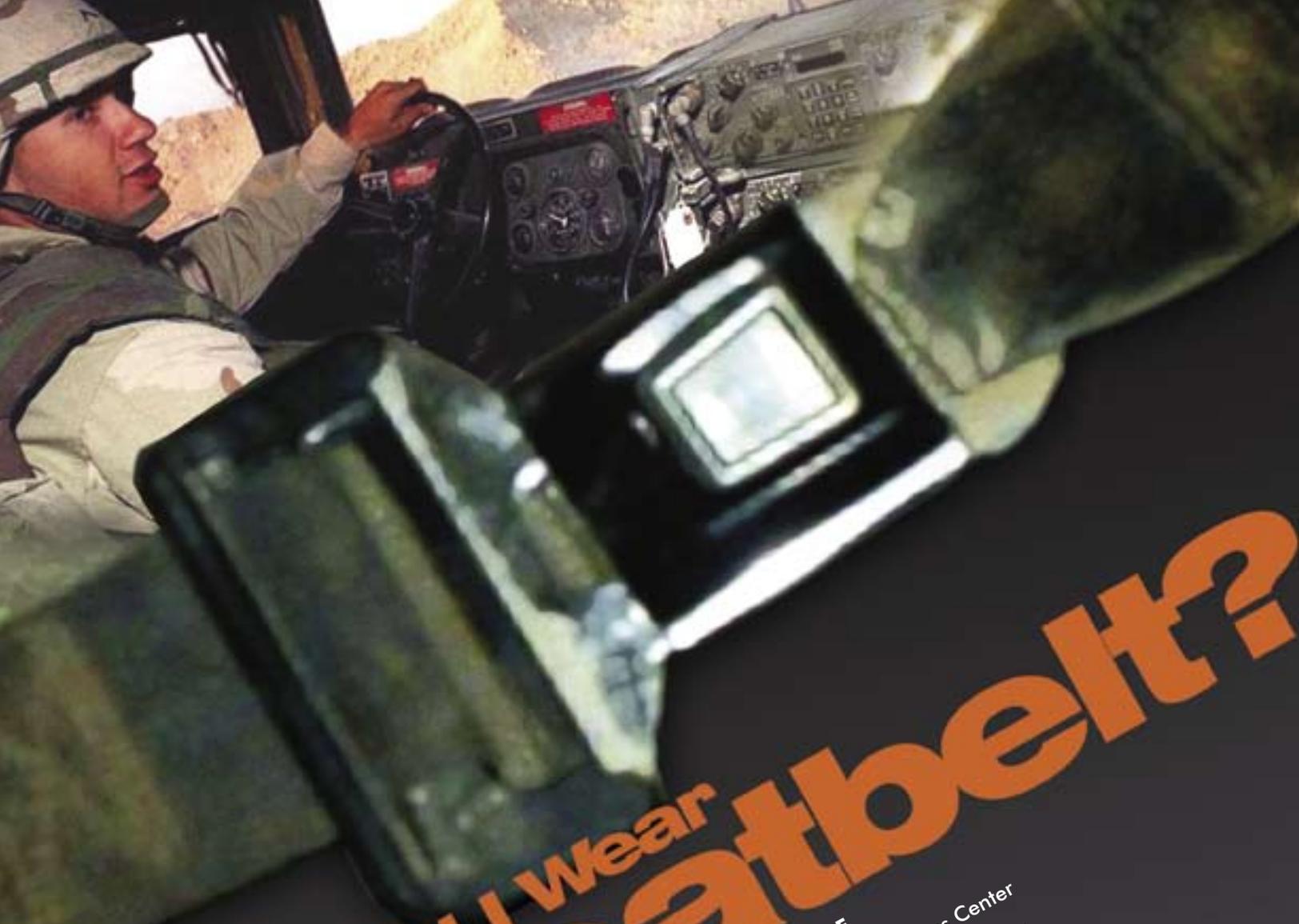
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Why should I wear my seatbelt?

SFC JOHN TEMPLE
Accident Investigator
U.S. Army Combat Readiness Center

I've been assigned to the Army Combat Readiness Center (CRC) for about 3 years. Before I came to the CRC, you wouldn't catch me wearing my seatbelt in an Army vehicle. I had all kinds of excuses: I'll need to get out of the vehicle fast if we're ambushed. The seatbelt restricts my movement. Wearing a seatbelt is like planning for an accident. If my time is up, I guess it's up (although you wouldn't catch me without my body armor!). And wearing a seatbelt just isn't cool. I look back now and realize how lucky I was then. I've seen too many dead Soldiers as an accident investigator—Soldiers that most likely would be alive today if they'd worn their seatbelts.

Why Should I Wear my seatbelt?

A few months ago I was investigating a Stryker rollover that killed two Soldiers. The driver lost control of the Stryker, and he and another Soldier in the vehicle's rear were ejected and crushed. A Stryker from the same brigade gave me a ride to the accident site, and as I put on my seatbelt one of the Soldiers in

the back said, "You don't need that. We never wear them." I couldn't believe what I was hearing! There we were, driving to the site where two Soldiers died because they *weren't* wearing their seatbelts, and

someone told me I didn't need mine. It just didn't seem logical.

How do Soldiers develop this mindset? For starters, they pick up bad habits from leaders who say it's okay not to wear seatbelts. And what



“And what kind of message is sent if a leader tells their Soldiers to wear seatbelts, but doesn’t enforce the rule or wear their own?”

kind of message is sent if a leader tells their Soldiers to wear seatbelts, but doesn’t enforce the rule or wear their own?

Here’s an example. A former squad leader once told me I shouldn’t wear my seatbelt because he knew someone that would’ve been killed if they’d been wearing theirs. That person was speeding and lost control of his car, which ran off the road and hit a telephone pole. He was ejected from the car and survived, but his neck was cut all the way across. A doctor told him that if he’d been wearing his seatbelt, he would’ve been killed when the car hit the pole.

When you break it down, this guy was VERY

lucky. His car rolled one time, he was ejected at 80 mph, and his head was almost cut off. His body barely missed

Restrain Yourself

Inertia is an object’s tendency to keep moving until something else works against this motion. To put it another way, inertia is every object’s resistance to changing its speed and direction of travel. Things naturally want to keep going. Anything that’s in the vehicle, including the driver and passengers, has its own inertia, which is separate from the vehicle’s inertia. A vehicle accelerates riders to its speed. Imagine you’re coasting at a steady 50 miles per hour. Your speed and the vehicle’s speed are pretty much equal, so you feel like you and the car are moving as a single unit.

But if the car were to crash into a telephone pole, it’s obvious your inertia and the vehicle’s are absolutely independent. The force of the pole would bring the vehicle to an abrupt stop, but your speed would remain the same. Without a seatbelt, you would either slam into the steering wheel at 50 miles per hour or go flying through the windshield at 50 miles per hour. Just as the pole slowed the vehicle down, the dashboard, windshield, or the road would slow you down by exerting a tremendous amount of force.

Why Should I Wear my seatbelt?

“A Soldier lost control of his HMMWV at 70 mph. The vehicle rolled three times off a 20-foot embankment. The driver wore his seatbelt and walked away, but his passenger was killed. The passenger was not wearing his seatbelt.”

hitting two trees and the telephone pole, and he just happened to land in an area where he could survive. The chances of surviving that accident were very low with or without a seatbelt. Although that driver

survived without his seatbelt, statistics prove you have a much greater chance of living through an accident if you wear yours.

The Soldiers in the following accidents probably would've survived

if they'd worn their seatbelts. Keep in mind most of these accidents occurred in theater, where the enemy—not accidents—is typically seen as the biggest threat.

- A Soldier lost control of his

HMMWV at 70 mph. The vehicle rolled three times off a 20-foot embankment. The driver wore his seatbelt and walked away, but his passenger was killed. The passenger was not wearing his seatbelt.

- A HMMWV was cut off by a civilian truck and subsequently collided with the vehicle. The



Letters from War

TACTICAL MOVEMENT

DVD NOW AVAILABLE

passenger, a lieutenant colonel, was not wearing his seatbelt and was killed. The driver wore his seatbelt and survived.

- A Soldier lost control of his 5-ton truck on an icy highway. Both Soldiers were killed when the truck ran off the roadway. Neither Soldier was wearing their seatbelt.

- One Soldier was killed and another was injured when they were ejected from their HMMWV. The driver swerved the HMMWV to avoid hitting the open door of a civilian vehicle. The deceased Soldier was run over by the vehicle behind the HMMWV.

There are many more accidents like these in the CRC database. In nearly every one, the occupants would've survived if they'd had on their seatbelts. Your fellow Soldiers and your family are counting on you to do everything possible to survive the enemy and accidental threats of combat. Buckle up and stay alive. Don't let an excuse for not wearing your seatbelt keep you from making it home. 🚗

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The Army Combat Readiness Center recently released "Tactical Movement," the third DVD in its Letters from War series. The DVD features interviews with active-duty and Reserve Component Soldiers in theater as well as contractors, a transportation battalion commander, maintenance NCOs, truckmasters, convoy live-fire trainers, heavy wheel mechanics, and one Soldier who took rollover drills to heart and survived an accident.

Topics covered include Composite Risk Management; rehearsals; convoy live-fire tactics, techniques, and procedures; up-armored HMMWV safety tips; and two special features: "I Survived a HMMWV Rollover" and "Getting Ready to Roll: A Right-seat Ride." An "additional resources" folder contains useful reference tools such as field manuals, PowerPoint presentations,

and training support packages.

To order this two-disc set or any of the Letters from War series DVDs, go to <http://dodimagery.afis.osd.mil/davis/> and type in "Letters from War" or "tactical movement" as a keyword search. Then select the DVD you want and add it to the shopping cart. If you need more than one copy, ask for extra copies in the "comments" box. Please remember this product is restricted in release for official use only.

We'll announce upcoming DVDs in upcoming issues of *Countermeasure*. Future topics include "Medical," "The Joint IED Defeat Task Force UNCUT," and "Fort to Port." Please give us feedback—we genuinely want to know if we're on the right track! For more information contact Rebecca Nolin at (334) 255-2067, DSN 558-2067, or by e-mail at video@safetycenter.army.mil.



ONVA ROLL TO DIE

CPT BRIAN DIBB
U.S. Marine Corps

Editor's note: Rollover accidents in Army Motor Vehicles are killing Soldiers at an alarming rate, both in theater and at home. In many of these accidents, the deceased Soldiers chose not to wear their seatbelts and were ejected from the vehicle. However, this is not an "Army problem"—all branches of the military are suffering these same type accidents. The article below was published in the Winter 2005 issue of *Ground Warrior*, the Marine Corps ground safety magazine. Read on for some "déjà vu," and remember that their mistakes are the same ones killing our Soldiers today.

"We always wear seatbelts, except when we're in a tactical training environment," one NCO said following a HMMWV rollover. "My Marines always obey the speed limit, but it doesn't really apply when training on a fire-and-movement range," a senior NCO said about another HMMWV accident. Following yet another HMMWV rollover, another NCO said, "I've never seen any of my Marines driving recklessly."

Many Marines are aware that motor vehicle mishaps cause most accidental fatalities and property damage, both on and off duty. Several HMMWV rollovers over the past 5 years resulted in numerous deaths, dismemberment injuries, and destruction. The following is a quick glimpse at three of those accidents.

In the first accident, an NCO was driving some mechanics back to the motor pool from the field. The driver seemed to believe General Motors had built an “unrollable” vehicle. He set out to prove his point by fishtailing the vehicle while accelerating down a sloping dirt road. The driver’s side rear wheel caught a ditch, and the vehicle slid sideways before going airborne more than 50 feet. Both the driver and truck commander (TC) were ejected as the vehicle corkscrewed through the air. Only the two mechanics in the back seat had enough sense to buckle their seatbelts. When the vehicle landed one mechanic got out, kissed the ground, and began first aid on his comrades. The TC suffered an avulsion from his wrist to his elbow, and the driver suffered permanent brain damage.

The second accident involved a platoon conducting a rehearsal for a fire-and-movement exercise. A senior NCO thought the exercise was moving too slowly and directed the Marines to pick up their pace. While retrograding from a forward firing position to a rear one, a HMMWV attempted a 110-degree turn into the position. The driver lost control in the turn, and the vehicle slid almost broadside down the road. As the truck left the roadway, the tires dug into soft sand and “bit,” causing a slow roll. The

HMMWV came to rest on its roof, killing the .50-caliber gunner in the turret. The driver, who had limited experience on unimproved roads, exceeded the speed limit for a gravel road.

In the final accident, a corporal of the guard decided to drive the duty HMMWV while making rounds. The unlicensed corporal lost control of the vehicle on a dirt and gravel road while driving well over the speed limit. The corporal and the other occupants were ejected and injured, one fatally.

These three accidents share several common factors. All

“Perhaps most importantly, seatbelt use played a major role in who walked away from these accidents and who didn’t.”

involved HMMWVs—vehicles that, despite their relatively low center of gravity, can and do roll over frequently. The three accidents also occurred on unimproved roads. Drivers must understand that HMMWV tires grip sand and gravel only about half as well as asphalt or concrete, much like regular tires on snowy or very wet roads.

Directly related to the road condition is another factor: speed. These three Marines drove well above both the established speed limit and safe speed for the road or training area. The drivers clearly were hot-dogging in two of these accidents. Tactical vehicles are not personal recreational vehicles and should be treated with respect. Vehicle commanders must brief vehicle speeds and other safety control measures whether their troops are conducting combat operations in theater or administrative

movements on base. When a driver exceeds the speed limit, they place their life and the lives of their occupants on the line, not to mention their careers.

Leaders must carefully plan and brief safety considerations for HMMWVs with turrets. Drivers MUST obey the speed limit in these vehicles and take extra precautions to prevent collisions or rollovers. A gunner in a turret doesn’t stand a chance if the vehicle lands on top of him. In addition, leaders must account for a lack of experienced drivers when planning and executing training. Two of the drivers above

were inexperienced, and one wasn’t licensed at all.

Perhaps most importantly, seatbelt use played a major role in who walked away from these accidents and who didn’t. When a vehicle rolls, the unrestrained occupants most likely will be ejected. One of these drivers was ejected and almost died, while two of his passengers were belted in and escaped the accident unharmed.

The bottom line is always buckle up and treat HMMWVs for what they are—powerful military machines that can be lethal if they’re mishandled. Take care of yourself and your comrades, and remember that arriving alive depends on you when you’re in the driver’s seat. 

Reprinted with permission from the Winter 2005 *Ground Warrior*, www.safetycenter.navy.mil.

More than one million mines reportedly remain emplaced throughout Kosovo. During the war, any and all manner of explosive devices were used to kill combatants on both sides. Combat action in our operational theaters, especially Iraq and Afghanistan, proves the emplaced explosive is a very efficient “soldier”—one that needs no food, clothing, or shelter.

Danger Lurks Combat's

2LT ERIK JOHNSON
Safety Officer, Task Force Protector
Camp Bondsteel, Kosovo

These explosives come in several forms: as a conventional ground-emplaced mine; as air-dropped, hand-thrown, or artillery- or shoulder-fired explosive ordnance; or what’s recently become known as the improvised explosive device (IED). We might term IEDs as “unconventional” weapons since they aren’t produced in factories. Basically, IEDs are “jerrybuilt” devices constructed from a hodgepodge of materials including pieces from conventional munitions, civilian electronics, readily available scrap materials, and lethal explosives.

Every Soldier should be able to identify these types of weapons. Conventional mines generally are made of metal, wood, or plastic and resemble common shapes. These mines might look like a hubcap or soda bottle, or even a wooden shoebox. Plastic anti-personnel mines designed to look like leaves also have been found in various areas.

When dropped, explosive ordnance might or might not explode. These “duds” fall into the category of unexploded ordnance (UXO) and might detonate at any time. These explosives could lie on the ground for months or even years and still be triggered by an unsuspecting Soldier. UXO includes

hand grenades, rocket-propelled grenades, bombs, artillery shells, and any launched or dropped-on-target explosive.

The above weapons are relatively easy to identify compared to IEDs, which don’t look like traditional military munitions. IEDs commonly are concealed and disguised as part of the natural landscape, such as in a collection of stones on the roadside or brush along a highway. They might even be attached surreptitiously to the underside of a military vehicle. These “homemade” bombs can be activated remotely with an electronic trigger device by someone standing 100 meters away. Others might be triggered by tripwire or a simple clock mechanism set to detonate at a preset time.

To successfully counter these threats, we must know where to expect them. Maintain situational awareness at all times, especially while crossing frequently used intersections, bypasses, fording sites, and culverts. Be cautious when passing key logistical points such as water, fuel, or food facilities; abandoned buildings; ditches; and debris strewn along the roadside. Look for signs of road repair including new construction or patching. Also



ks in Shadow

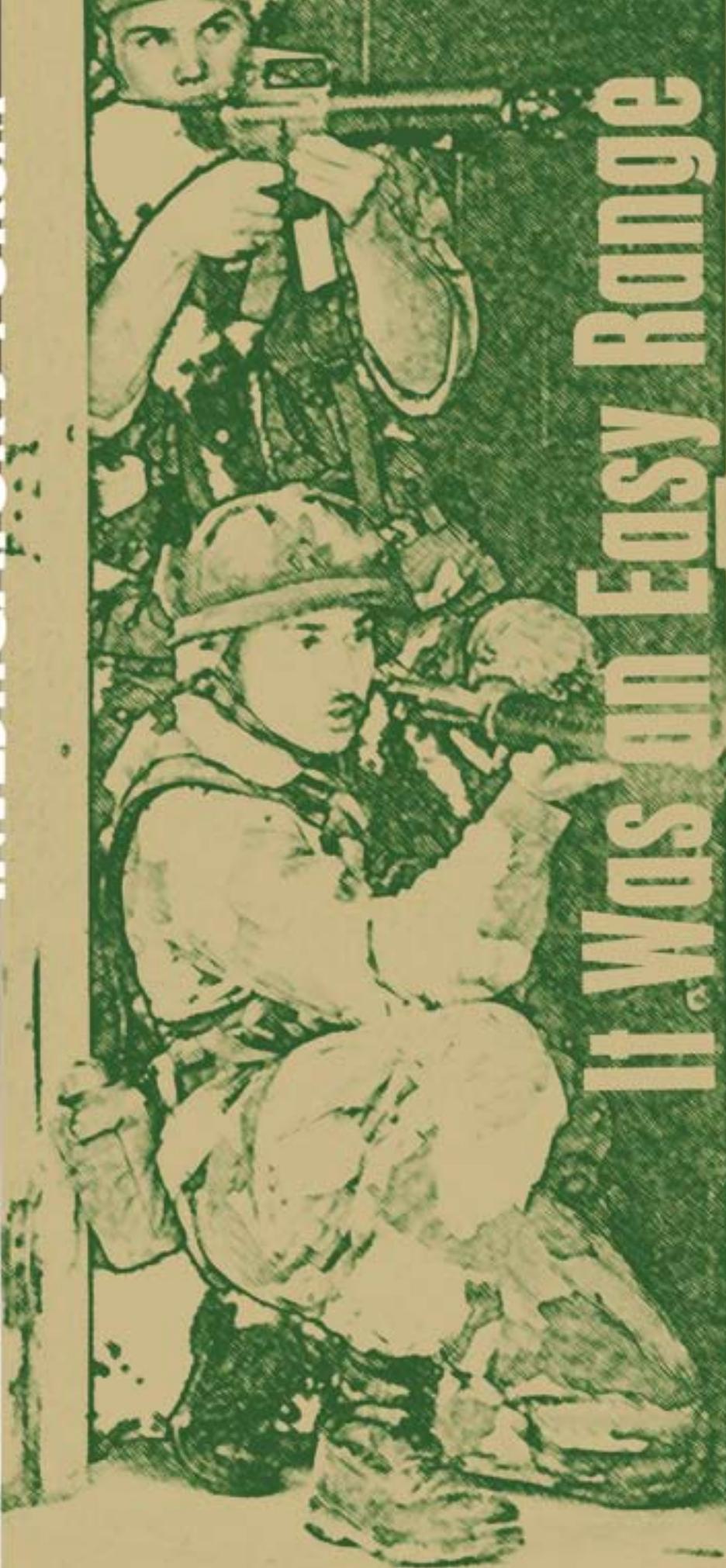
be vigilant for more direct evidence such as craters, tripwires or cables stretched across the road, or even shrapnel strewn about the area. Areas the locals conspicuously avoid are another subtle—but nevertheless reliable—sign of an explosives site. And don't forget about dead animals or people, both of which have been rigged with explosives in the past.

There are specific rules for dealing with explosives sites. Never approach a suspected explosive ordnance item, and avoid the area where the ordnance is located. Don't move or disturb the ordnance, and never transmit radio signals near explosives. Immediately report the location and suspected ordnance type to your higher headquarters. Also be certain to clearly mark the area and indicate the explosives threat. One marking method is to stretch colored tape across

the site entrance. The tape should be placed one meter above the ground, if possible, to make it easily discernable from the surrounding landscape. Piled rocks also may be used if no tape is available. To more clearly indicate a life-threatening hazard, emplace crossed branches, sticks, or twigs at every approach to the site.

The threat is clear—we face not man, but his shadow. Mines, UXO, and IEDs are designed to catch Soldiers unaware and maim or destroy them. And, long after the battle has been engaged and decided, these devices will remain a deadly threat to our Soldiers. Explosives are serious business, so be vigilant, be aware, and make it home safe! 

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IT WAS AN EASY RANGE

SFC JOHN TEMPLE

Accident Investigator

U.S. Army Combat Readiness Center

It was 0900, and the unit moved to a range to conduct room clearing in several buildings on a military operations in urban terrain facility. The buildings were constructed with 2" x 4", 2" x 8", 2" x 10", and 6" x 6" lumber, and ¼"- to ¾"-plywood sheeting. The facility included both single room/single story and multiple room/multiple story buildings. Adjacent rooms were not visible through the plywood walls.

The buildings paralleled both sides of the mock city's main street and were laid out over several city blocks. The range was designed to allow units to develop close quarter combat and maneuver scenarios and to enhance fighting ability in urban terrain. These scenarios included clearing single rooms with maneuvering elements while clearing multiple buildings throughout the city and using support-by-fire positions.

The Soldiers were instructed to conduct two blank fires to show they were safe to fire live. This procedure was important because they would clear rooms with two teams. Alpha Team would clear a room, then Bravo Team would leap-frog and clear the next room. The squad received a safety briefing and began the exercise around noon.

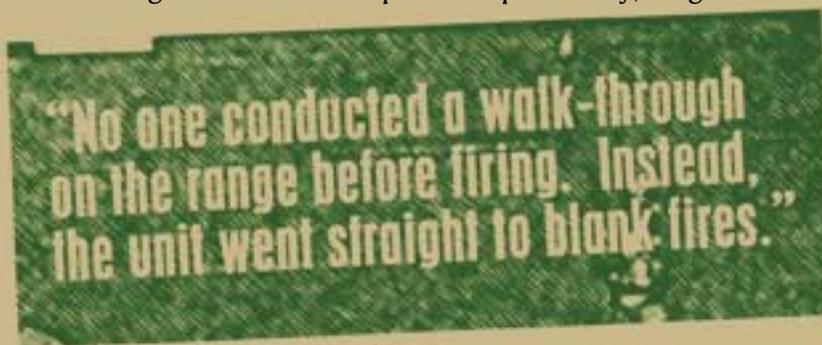
The first blank fire went well. The second was different from the first, and the squad missed one of the rooms. The company commander gave an after-action report and said that although the squad made tactical errors, they were safe. The squad got the ok to fire live. When everyone was ready, they moved back to load the live ammunition while the other squad conducted their blank fires. Soon everyone was ready, and the squad received the go-ahead from the platoon leader. Everything was going well, and all but three rooms were cleared.

Alpha Team moved into the fourth room and began engaging the targets. Suddenly, someone yelled "MEDIC!" Everyone stopped firing and walked out of the room to find that a member of Bravo Team was shot. One of Alpha Team's bullets—fired from the room they were clearing—passed through the plywood wall and struck the Bravo Team Soldier. He was directly behind one of the targets engaged by Alpha Team.

On that day the Army lost a Soldier, a mother lost a son, and this unit's Soldiers lost a friend. Why? This exercise was considered an "easy" range. However, mistakes were made—the same mistakes seen every day on ranges across the Army. On this range, those mistakes added up and a Soldier was shot in a preventable accident. Learn from this unit's mistakes and prevent an accident on your range.

- The scenario was changed from the one approved by the battalion commander and range control. Soldiers occupied a room that was not on the scenario or the range contract. This change put the Soldiers downrange behind a target, which was on a wall in another room. The two teams could not see each other.

- No one conducted a walk-through on the range before firing. Instead, the unit went straight to blank fires. A walk-through is important because it gives the leadership



and Soldiers a chance to talk about their actions! Sometimes leaders are reluctant to conduct a walk-through because the Soldiers will see the targets, just as they would in a blank fire. However, the walk-through's slower pace allows Soldiers to talk about what will happen and identify the scenario's potential hazards. It is important to remember this was a training event to make the unit ready for combat. We train as we fight; however, we must train at the appropriate level before we run at a combat pace.

- The range safety officer (RSO) and officer in charge (OIC) were performing multiple functions on the range. It is

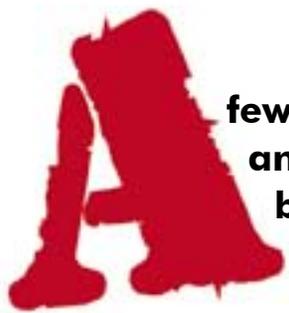
important for the RSO and OIC to perform only the functions specified in Army Regulation (AR) 385-63. This guidance removes the RSO and OIC from all other responsibilities and allows them to ensure safety throughout the range.

- The unit's RSO and OIC were not trained. This is a big problem throughout the Army. Units are sending their RSOs and OICs to range control for certification. However, range control does not train RSOs and OICs, nor is it their responsibility; range

control only familiarizes them on installation policies and procedures. The unit is responsible for training RSOs and OICs in accordance with AR 385-63.

This unit is a very good unit that simply labeled a range as easy and let some important decisions slip under the radar. No matter how routine or easy a range might seem, apply the five steps of the risk management process and follow all unit and Army polices. You just might save a life! 🚫

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A

few years ago I made a bad decision and ended up with a blank space between my left-hand pinky and middle fingers. I'd just finished unloading some office chairs

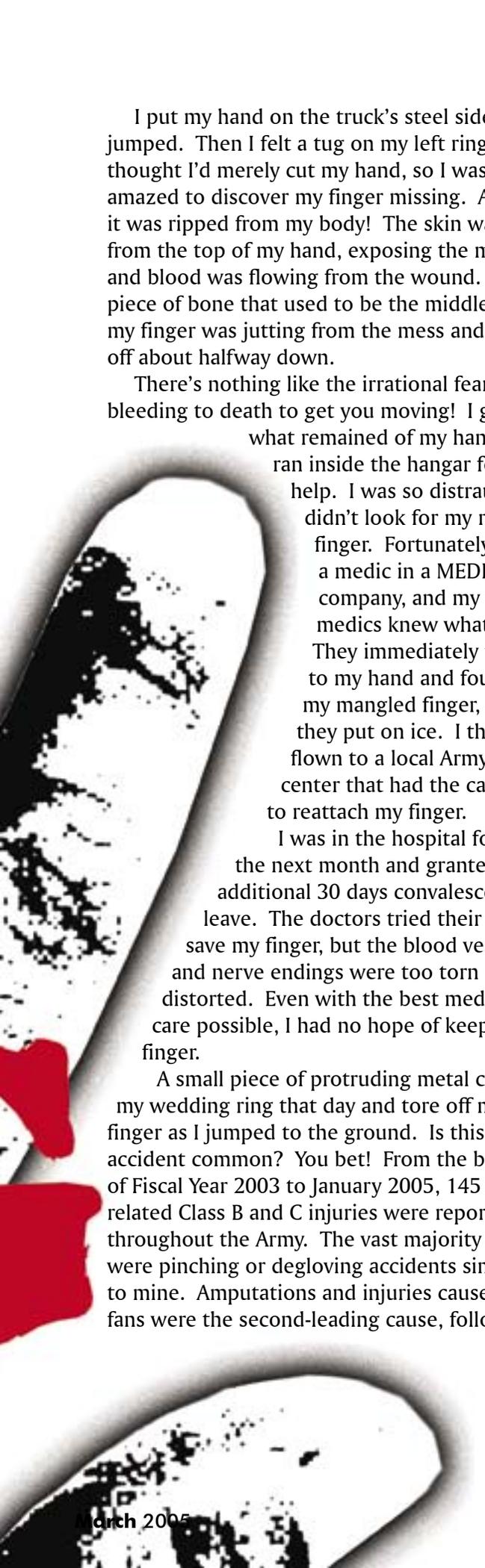
from a 5-ton truck at an airfield and got impatient while waiting on my buddy to help me down. We'd used a hydraulic lift on the truck's back end to lower the chairs to the ground, and he was rolling the chairs inside the hangar. Instead of waiting on my buddy to get back and lower me to the ground using the lift, I decided to jump off the back—a 4 ½-foot fall.

After all, I was wasting time!



MISSED

CW4(RET) MIKE CRONRATH



I put my hand on the truck's steel side rail and jumped. Then I felt a tug on my left ring finger. I thought I'd merely cut my hand, so I was slightly amazed to discover my finger missing. Actually, it was ripped from my body! The skin was gone from the top of my hand, exposing the muscle, and blood was flowing from the wound. A small piece of bone that used to be the middle part of my finger was jutting from the mess and broken off about halfway down.

There's nothing like the irrational fear of bleeding to death to get you moving! I grabbed what remained of my hand and ran inside the hangar for help. I was so distraught I didn't look for my missing finger. Fortunately, I was a medic in a MEDEVAC company, and my fellow medics knew what to do. They immediately tended to my hand and found my mangled finger, which they put on ice. I then was flown to a local Army medical center that had the capability to reattach my finger.

I was in the hospital for the next month and granted an additional 30 days convalescent leave. The doctors tried their best to save my finger, but the blood vessels and nerve endings were too torn and distorted. Even with the best medical care possible, I had no hope of keeping my finger.

A small piece of protruding metal caught my wedding ring that day and tore off my finger as I jumped to the ground. Is this type of accident common? You bet! From the beginning of Fiscal Year 2003 to January 2005, 145 finger-related Class B and C injuries were reported throughout the Army. The vast majority of these were pinching or degloving accidents similar to mine. Amputations and injuries caused by fans were the second-leading cause, followed by

weapons accidents. We have dangerous jobs and confront hazards every day, whether it's on the battlefield, in the motor pool, or in the office. And we need every complete hand we can get! Keep the following tips in mind to protect your hands and fingers:

- Don't wear jewelry. Remove all jewelry that could catch on equipment or pose an electrical hazard. An Army poster popular a few years ago carried the caption, "Take off the ring, not the finger." I wish I'd taken that advice! I've worn my wedding ring—which was recovered along with my finger—on my dog tags for the past several years. (A note about dog tags: Don't wear them if you're working around live electrical components.)

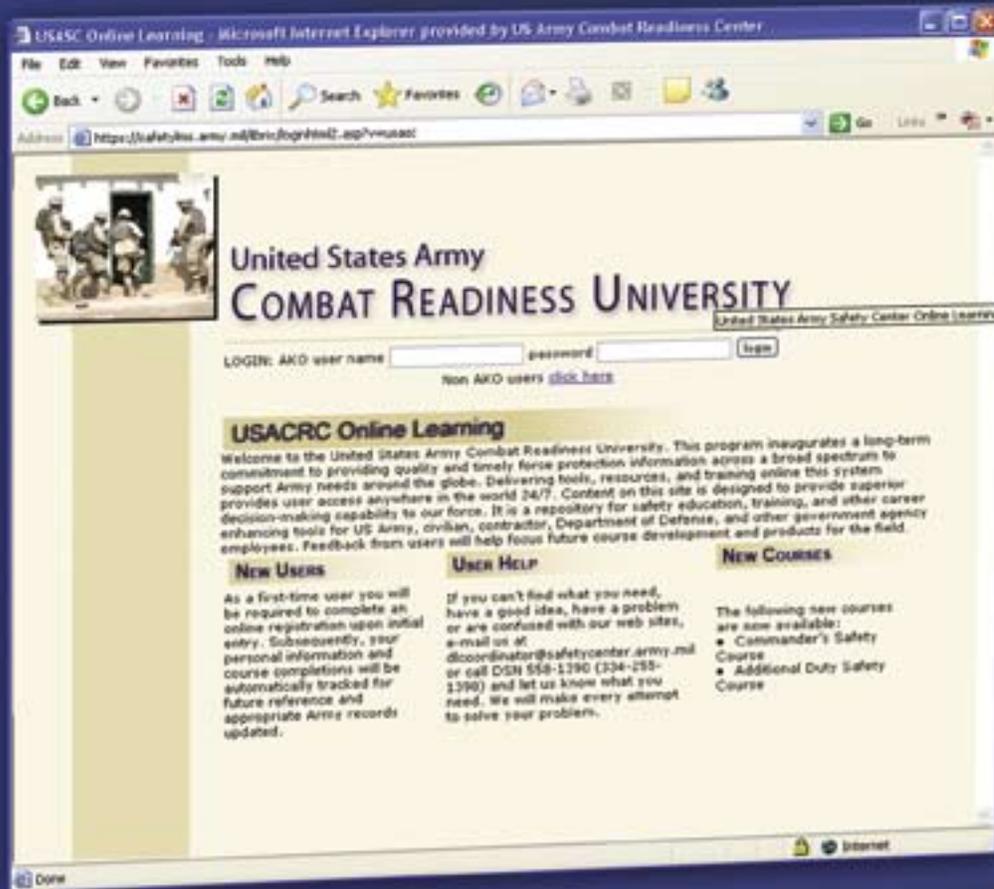
- Don't put any part of your body between hard objects. Many Soldiers put themselves in compromising positions while backing up vehicles to docks, trailers, or fences. Think about what you're doing and use proper ground guide procedures. Use a two-person lift when required, and never stick your hands where you can't see them.

- Use lockout/tagout. If this term makes no sense to you, find your unit safety officer or NCO and ask them to explain it. In 1989 the Occupational Safety and Health Administration mandated that all equipment being serviced must be physically "locked out" of operation (i.e., energy removed from the item) and properly tagged. There are very few exceptions to this rule, and those exceptions must be made clear in written policy.

My accident doesn't have to be yours. After an extremely painful skin graft, a waiver, and several weeks on "hold" status, I was granted the privilege of going to flight school. Now I'm an instructor pilot and grateful for the opportunity to show my scars to student pilots. Make sure you integrate safety into every task you perform. It just might save your fingers, or even your life! 🖤

Editor's note: This article originally appeared in the July 2001 Countermeasure. Accident statistics were updated to reflect current trends.

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Your Training, Your Way

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KEVIN ZEMETIS
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You asked, and the Combat Readiness Center (CRC) delivered. In response to numerous requests throughout the Army, a new Commander's Safety Course (CSC) recently was released through the CRC's Combat Readiness University. These two innovative tools streamline risk management and safety training on the Internet and enable

Soldiers to complete courses from their own desks, at their own pace.

The new CSC is not an updated version of the previous course. Rather, it is a completely new curriculum with a different structure, focus, and feel. The original intent, however, is the same: to teach commanders and other leaders better management skills for their unit

safety programs. The CSC's goal is to integrate Army safety and risk management into all operations to protect Soldiers, prevent equipment damage or loss, and facilitate successful mission accomplishment while conserving resources. The new CSC—which takes about 9 hours to complete—capitalizes on interactivity and application through the use of scenarios and real-world situations.

Who should take the CSC?

Completion of the CSC is required for all company-grade officers before they assume command. Brigade- and battalion-level command designees must complete the CSC before attending the Fort Leavenworth, KS, Pre-Command Course.

What is the Combat Readiness University? Available on the Web at <https://safetylms.army.mil>, the Combat Readiness University is a powerful online tool that stores, delivers, and tracks training for registered users. This training includes online courses and resident and distributed learning provided by or through the CRC. The CSC is the first course offered through the Combat Readiness University.

To access the CSC and other Combat Readiness University courses, navigate to the login page and follow the enrollment instructions using your Army Knowledge Online username and password. You must complete a short registration page for initial entry, and all personal information will be stored in the system upon completion of this page. You then will be directed to log in a second time. The CSC is also available through the Reimer Digital Library, found on the Army Distance Learning Web site at <https://www.aimsrdl.atsc.army>.

[mil/cgi-win/AccpLogon.exe](http://www.army.mil/cgi-win/AccpLogon.exe).

Before registering on the Combat Readiness University Web site, please ensure your computer meets the following minimum system requirements:

- Navigator or Internet Explorer 6.0 or higher.
- Acrobat Reader. If Acrobat Reader is not installed on your computer, download a free copy off the Web at <http://www.adobe.com/products/acrobat/readstep2.html>.
- Flash Player 7.0. If this version of Flash Player is not installed on your computer, download a free copy off the Web at http://www.macromedia.com/shockwave/download/download.cgi?P1_Prod_Version=ShockwaveFlash.

If you are unable to download either Acrobat Reader or Flash Player 7.0, contact your local system administrator. It also is recommended that you use a broadband connection to access the CSC and other training materials on the Combat Readiness University Web site. This type connection should be readily available at work or at your local distance learning training facility.

When registration is complete, you will be assigned a primary user group based upon the reason for your initial visit. The current user groups are broken down as follows:

- CSC
- Additional Duty Safety Course
- Aviation Safety Officer Course
- CP-12 Safety and Occupational Health Course
- Advanced Skills Driver Training
- Mobile Training Team
- CRC personnel

- Other

Online course content may be accessed immediately. However, resident course reservations must be made through the Army Training Requirements and Resources System in accordance with current scheduling procedures. Resident course students also will be placed in a class-specific user group and receive materials relevant to their current training phase. Students—even those in resident courses—will take most (if not all) of their exams online and get the results immediately. When finished, both online and resident course students can print their own certificates of completion.

The CRC occasionally will ask for your feedback through the Combat Readiness University survey tool. This tool is important because, with your input, we will shape future content to best meet the Army's needs. Remember, it's your system. We look forward to your visit and to serving you! 

Editor's note: Be sure to check out the 2005 CP-12 joint intern safety training schedule on the CRC's Web site at <https://safety.army.mil>. Click on the "Training" button at the top of the page, then "CP-12 Training Schedule (2005)."

For additional information on the CSC, contact Mr. Wright at (334) 255-1389, DSN 558-1389, or by e-mail at don.wright@safetycenter.army.mil. Questions and comments regarding the Combat Readiness University should be directed to Kevin Zemetis at (334) 255-3262, DSN 558-3262, or by e-mail at kevin.zemetis@safetycenter.army.mil.

WE'RE NOT THE WAY WE DO IT!

CW2 ANNE THRUSH
224th Military Intelligence Battalion
Fort Stewart, GA

I was traveling in a convoy from Balad to Al Asad, Iraq, when we encountered another convoy traveling the same route. We were on a four-lane divided highway that had a median in the middle. The drive was uneventful until a vehicle from the other convoy pulled into the median to make a U-turn. The driver stopped and looked for oncoming traffic. He didn't notice any oncoming vehicles, so he pulled into the lane. What he didn't see, however, was the civilian vehicle traveling in the wrong lane on the wrong side of the highway.

The Soldier's vehicle crashed into the small Iraqi car, and the impact caused the car to roll numerous times. Several of the passengers were ejected and suffered serious injuries. The Soldier wasn't injured, and his vehicle suffered very little damage.

Why did the accident happen? It might be obvious the wrong-way driver caused the collision. After all, that Soldier did all the "right" things according to American standards. But the Soldier didn't know wrong-way drivers are very common in Iraq and Kuwait. Like many other Soldiers deployed to foreign countries, the Soldier simply wasn't aware of local driving practices.

During redeployment operations a few months later, I attended a driving class in Kuwait. I was getting licensed to drive a civilian vehicle from the transportation motor pool to check on things at our port. We learned a lot in that class about local traffic laws and local

driving practices. For example, local drivers commonly run traffic lights. As mentioned before, they often travel the wrong way on highways. Local drivers also frequently leave broken-down vehicles where they break down—even in the middle of the highway. I saw all these situations and more as I traveled to and from the port, and even had a few close calls.

I was heading south on a six-lane divided highway when a small pickup truck loaded with unsecured wood entered the highway. I changed lanes to pass the truck when, suddenly, a large piece of wood fell and bounced off the road's surface. Fortunately my vehicle had cleared the truck and I was safe, but the wood would've hit me had I not changed lanes. A little farther down the same highway, another vehicle was abandoned in the middle lane of traffic. On another trip I was heading south in the southbound lane when I saw a vehicle heading north in the same lane.

These are just a few examples of how doing the right thing isn't always enough to ensure your safety. Soldiers in theater must "keep their heads on a swivel," be constantly aware of their environment, and stay focused on what is happening around them. We can't expect people in foreign lands to drive like we do in the United States. Pay attention during your local cultures training and familiarize yourself with all local practices. It could save your life! 

Contact the author by e-mail at anne.thrush@us.army.mil.



ACV

Class A

■ Soldier was killed when the M1A2 tank he was riding in overturned en route to a refueling operation. No other details were reported.



AMV

Class A

■ One Soldier was killed and two others were injured when their up-armored HMMWV overturned during a day convoy operation. The deceased Soldier was serving as the truck's gunner. No other details were reported.

■ Soldier was killed when the 5-ton truck he was riding in ran off the roadway and overturned into an irrigation canal. The Soldier—who was serving as the truck commander—was trapped in the truck following the rollover and drowned.

■ Soldier suffered fatal injuries when the HMMWV he was riding in crashed into a parked M1A1 tank on a bridge. The Soldier was serving as the truck commander. The tank's infrared flashers were activated at the time of the accident. The degree of injury to the other Soldiers was not reported.

■ One Soldier was killed and seven others were injured when their HMMWV rolled off a 20-foot embankment into a ditch during a night combat patrol. No other details were reported.

■ Soldier was killed when the M1117 armored security vehicle he was riding in was struck by a POV at an intersection. The M1117, which was stopped at the intersection, overturned several times. The Soldier was serving as the M1117's gunner.

Class B (Damage)

■ An M88A2 recovery vehicle and M1A2 tank suffered Class B damage when the M88A2's driver lost control of the vehicle on a sloping tank trail. The M88A2 was towing the M1A2. The driver suffered minor injuries.

Class C

■ Soldier suffered a cracked skull when the M113A3 armored personnel carrier he was riding in crashed through a brick wall. The vehicle was part of a convoy when it began wandering off course into oncoming traffic. The driver attempted to steer out of the drift, but the vehicle lurched to the right and hit the wall. The injured Soldier was serving as the vehicle commander and was ejected from the vehicle. His combat vehicle crewmember helmet came off before he hit the ground, leading to the head injury. The accident was caused by mechanical failure.

repacking. The Soldier lost an arm and a leg in the initial explosion and died 4 days later.

■ A foreign national service member was killed when Soldiers manning a traffic control point were engaged by a presumed enemy element. The Soldiers returned fire and fatally struck the foreign national service member. Three additional foreign nationals were injured.

Class B

■ Three Soldiers suffered third-degree burns, shrapnel injuries, and hearing loss when a container exploded at a maintenance shop. The Soldiers had removed the container from a MILVAN and opened it, at which time the explosion occurred. The container's contents were not reported.

Class C

■ Soldier's index finger was lacerated when a generator fell on it. The Soldier was helping lift the generator into a HMMWV when it came down on his finger.



Personal Injury

Class A

■ Soldier was killed when a hand grenade detonated in the equipment kit he was

Soldier suffered fatal injuries when the 5-ton gun truck he was riding in rear-ended a civilian reefer truck. The Soldier was ejected from the gun truck and suffered severe head trauma. He was pronounced dead at the local combat support hospital.

We are
Losing
a
Soldier
every
9 nine
hours

Are MY daily activities
going to help reduce
losses and turn the
arrow **DOWN**?

YOU CAN MAKE A DIFFERENCE

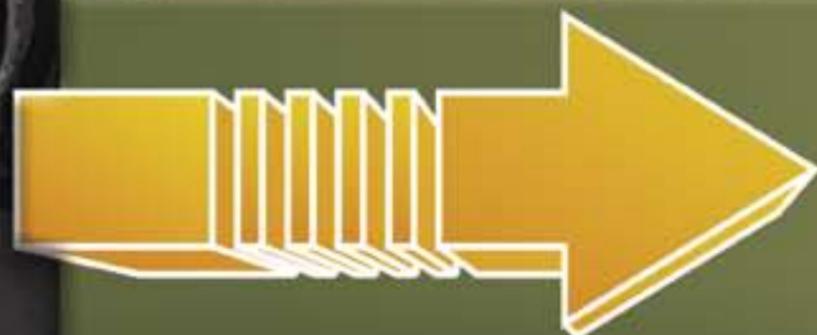


U.S. ARMY COMBAT READINESS CENTER

CBRM

Composite Risk Management

Tactical,
threat-based risk management



Composite
Risk Management

- Enemy
- Environment
- Materiel/system
- Human error

Accidental,
hazard-based risk management

The Army Combat Readiness Center—transforming safety processes to improve combat readiness and preserve combat power.



U.S. ARMY COMBAT READINESS CENTER

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Rollover

rollover prevention

- Adapt current mission using Composite Risk Management
- Use ground guides in limited visibility
- Vehicle commander and driver must maintain situational awareness
- Implement and enforce driver's training
- Be aware of blind spots

during a rollover

Hazard: Unsecured objects striking Soldiers

Countermeasure: Secure all equipment according to the load plan

Hazard: Soldiers being crushed by the vehicle

Countermeasure: Soldiers must always wear their seatbelts

Hazard: Soldiers striking stationary objects

Countermeasure: Soldiers must wear their proper personal protective equipment at all times—e.g., Kevlar helmet and eye protection

after a rollover

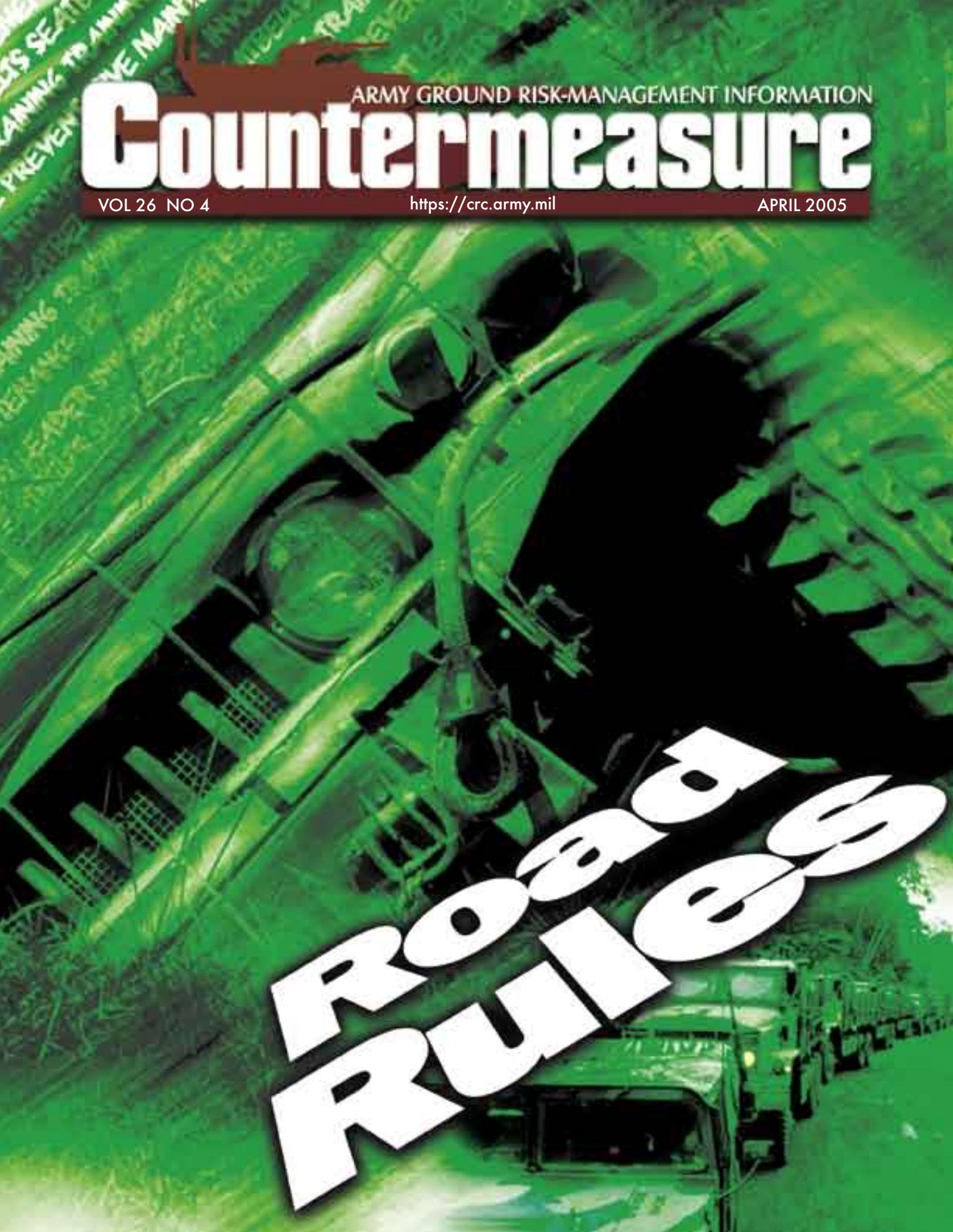
Hazard: Injuries or death from entrapment or drowning

Countermeasure: Rehearse egress drills and include a head count



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LET'S SEE
TRAINING TO AN
PREVENTIVE MAINT

ARMY GROUND RISK-MANAGEMENT INFORMATION

Countermeasure

VOL 26 NO 4

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APRIL 2005

Road Rules

Countermeasure

CONTENTS

- 3** A Cold, Wet Way To Die
- 6** Investigator's Forum
Hidden in Plain Sight
- 8** Saving for a Sandy Day
- 10** Best Practices
Monday Morning Maintenance
- 12** Back to the Basics
- 14** M939s—Still Out There
- 16** Soldier-friendly Seatbelts
Coming Soon
- 18** Stuff Happens
- 20** Have a Good Jump
- 22** Accident Briefs
- 24** Rollover!



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WEET A COLD TO DIE

LTC JOSEPH MILLER
Accident Investigator
U.S. Army Combat Readiness Center

Editor's note: The incident described here is one of the latest in a long line of accidents involving HMMWV rollovers in Iraq, specifically M1114 up-armored HMMWVs. Since the beginning of Fiscal Year 2004, 42 Soldiers have died in M1114-related accidents. Many of these HMMWVs rolled over into ditches or embankments, which often are filled with water. Soldiers are drowning in these accidents at an alarming rate. Read on for the story of two such Soldiers.

The accident sequence

The section leader of two M1114 up-armored HMMWVs established a nighttime observation post (OP) to watch over a main road in Iraq. He parked his HMMWV on a dirt road that ran perpendicular to the paved road. A small drainage ditch ran adjacent to the dirt road's right side and flowed underneath the paved road. The section leader placed the other HMMWV—the accident vehicle—approximately 70 meters behind him so that crew could provide rear

security for the OP. The section's Soldiers drove in the area frequently and were very familiar with the roads and the ditch.

About 10 minutes later, a car suspected of carrying a vehicle-borne improvised explosive device (VBIED) drove by the section's position. The section leader alerted the HMMWV behind him before departing the OP and turning right on the paved road after the suspicious car. The Soldier pulling dismounted security for the other HMMWV got

in the vehicle behind the driver's seat while the gunner oriented his weapon to the rear. The driver, who was wearing ANPVS/7 night optical devices (NODs), drove down the dirt road without the vehicle's lights on. The senior occupant, however, was not wearing NODs and was busy adjusting his equipment and the radio instead of scanning outside the vehicle.

The driver turned on the lights and began to turn right as the HMMWV reached the paved road. At the same time, he removed his NODs. Suddenly, the passenger-side tires missed the edge of the paved road, and the vehicle began to slide down toward the ditch. The senior occupant yelled "Rollover!" and the

gunner dropped into the vehicle. The HMMWV rolled right 10 feet before landing upside-down in 5 feet of very cold water.

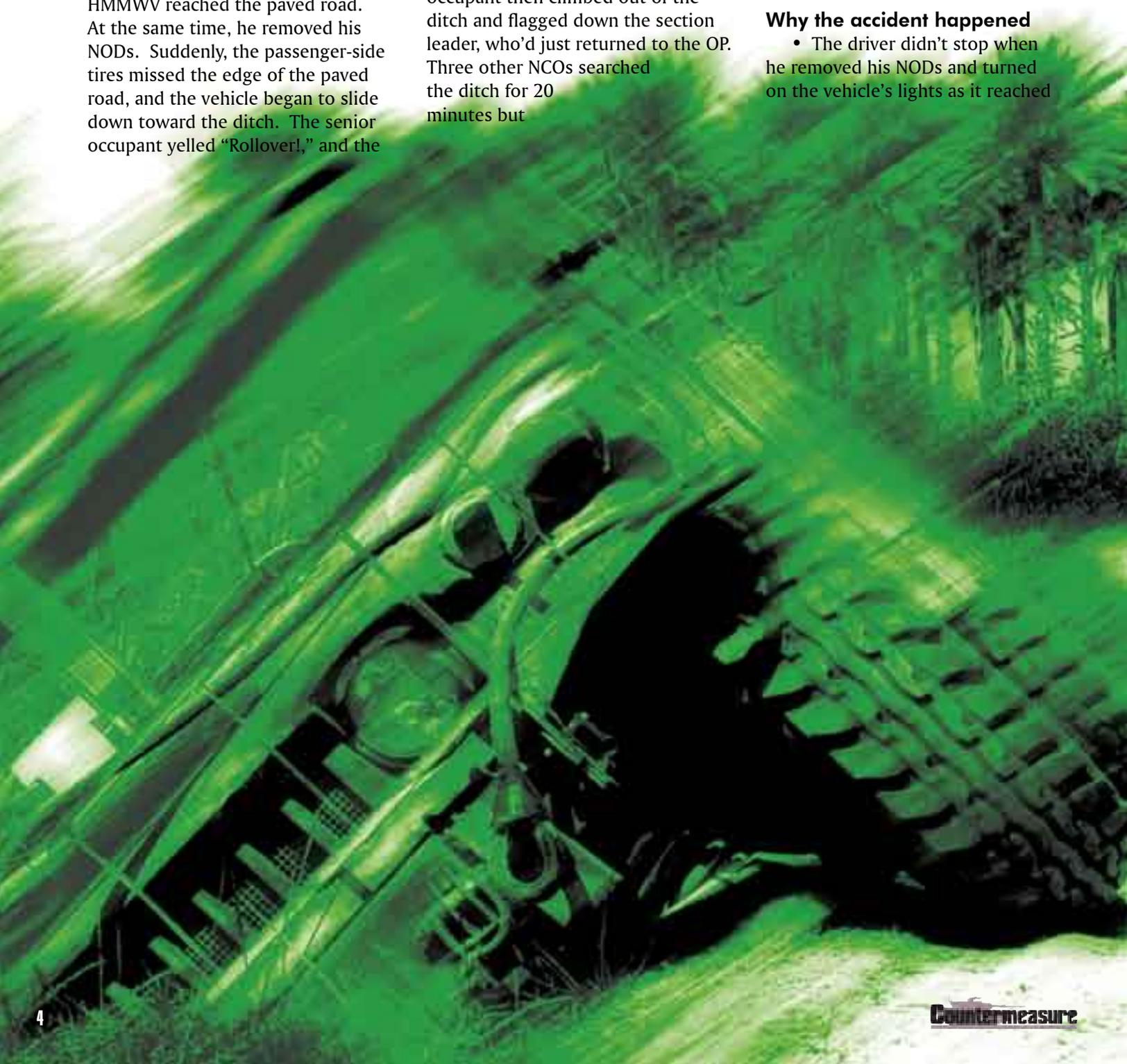
The senior occupant and gunner found a small air pocket in the vehicle's right rear and opened the door after struggling with the combat lock. The driver was unconscious, so the senior occupant pulled him from the vehicle. He couldn't find the Soldier who'd been sitting behind the driver. The senior occupant then climbed out of the ditch and flagged down the section leader, who'd just returned to the OP. Three other NCOs searched the ditch for 20 minutes but

couldn't find the missing Soldier. The section leader entered the vehicle and found the Soldier behind the driver's seat.

That Soldier never regained consciousness and was pronounced dead a short time later. The driver threw up water and initially was responsive, but his condition was deceiving. Sadly, he died 7 hours later from a combination of severe shock, hypothermia, and excessive water in his lungs.

Why the accident happened

- The driver didn't stop when he removed his NODs and turned on the vehicle's lights as it reached



the paved road. Instead, he performed this transition while making the right turn. Consequently, he missed the paved road and rolled the HMMWV into the ditch.

- The senior occupant didn't correct the driver as he was removing his NODs and making the right turn. Additionally, the senior occupant wasn't wearing his own NODs or scanning the terrain for hazardous conditions.

- The NCO platoon leader allowed the senior occupant and primary driver of the

to release if the vehicle is upside-down. Additionally, the vehicle's rear compartment isn't designed to be opened quickly from inside or outside in an emergency situation.

- The Soldiers who wore their 21-pound individual body armor and 4-pound helmet didn't fasten their seatbelts. As a result, two Soldiers struggled upside-down in their seats and drowned. The seatbelts would've provided these Soldiers with a reference point once they were upside-down in the water and prevented them from impacting the ceiling

same vehicle to go on leave at the same time. He subsequently assigned an alternate senior occupant and alternate driver to take their place, although other primary drivers and senior occupants were available.

Why the severity of the injuries

- M1114 up-armored HMMWV doors weigh approximately 200 pounds each. The combat lock doesn't have a quick release and is ergonomically difficult

when the vehicle rolled over.

- The driver drowned, although he regained consciousness and lived 7 hours after the accident. The water in the ditch was very cold, which contributed to his severe shock and hypothermia. Furthermore, aspirated fluid can cause lung conditions that are worse than they first appear. This combination of factors caused the driver's eventual death.

THE SOLDIERS WHO WORE THEIR 21-POUND INDIVIDUAL BODY ARMOR AND 4-POUND HELMET DIDN'T FASTEN THEIR SEATBELTS. AS A RESULT, TWO SOLDIERS STRUGGLED UPSIDE-DOWN IN THEIR SEATS AND DROWNED.

Recommendations

- Commanders and leaders must consider the hazards associated with crew assignments when they conduct composite risk assessments, and develop and implement appropriate control measures.

- Senior occupants must scan for hazardous road conditions and correct drivers before an accident happens.

- Soldiers must fasten their seatbelts when riding in Army vehicles. This is especially true during combat missions, when IEDs, rocket-propelled grenades, and rollovers could cause vehicles to overturn violently. Soldiers wearing seatbelts can exit their vehicle quickly since they remain conscious while fastened in the seat.

- HMMWV rollover drills must include an exercise in evacuating the vehicle through one door.

- The Program Executive Office-Combat Service and Combat Service Support should evaluate, develop, and field alternate egress paths for M1114 up-armored HMMWVs, specifically for vehicles upside-down in water. A quick release for the combat lock on M1114 doors also should be developed.

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Danger lies everywhere and takes many forms, especially in combat. Some dangers are hidden from sight, while others are hidden in plain sight. One recent, tragic accident in the Iraqi desert illustrates this point. The mission was to raid an insurgent target prior to the Iraqi elections.

The convoy's Soldiers were prepared, but also a little anxious, to begin the joint mission with Iraqi army and police elements. The Soldiers thought they'd accounted for every possibility along the way, but not long into the mission they encountered a hidden danger.

The Soldiers were familiar with the route. It had rained steadily for more than a week, and the rivers and canals along the route were swollen well above capacity. As the lead serial in the convoy passed over a culvert, disaster struck. A 25-foot-long, 7-foot-wide section along the road's shoulder suddenly collapsed. The Soldiers couldn't predict the collapse and, as such, didn't make a plan to avoid it. A Bradley Fighting Vehicle (BFV)—the last vehicle in the serial—fell 8 feet into the swift, cold water. Since the BFV was the last vehicle in that serial, no one noticed it was missing.

The two following serials saw the break in the road and avoided it, but they couldn't see their fallen comrades a short distance below. Here was another hidden danger. Why would anyone think something had happened? After all, serials two and three saw the break and successfully negotiated the hazard. There also were no vehicles from serial one in sight—a good indication the mission was proceeding as planned.

All the convoy serials arrived at

the predetermined assembly area, and final mission preparations were made. The Iraqi police and army elements took their place. Chem lights were distributed as a precautionary measure to identify friendly units and prevent fratricide. It was then that the BFV was discovered missing.

A hasty communications check yielded nothing from the BFV crew, so the frantic search began. The Soldiers decided to retrace the route, thinking and hoping the Bradley was merely lost. The BFV was discovered just 4 kilometers down the road in the water below the missing pavement. The vehicle was inverted and partially submerged.

Rescue operations began soon after the Soldiers notified the mission commander. Another BFV tried to recover the capsized vehicle and, on the third attempt, pulled it 8 feet to the canal's edge. The Soldiers struggled desperately and opened the rear door. They pulled the five crewmembers from the vehicle's rear and began lifesaving measures. Sadly, only two would be resuscitated; the other three crewmembers were pronounced dead a short time later.

Two M88 recovery vehicles hoisted the BFV from the water. The Soldiers found the driver, who was dead. The Bradley commander (BC) wasn't in the vehicle. The Soldiers thought the force of the water's current—another hidden danger—might have swept the BC away. They searched the canal's banks without finding the BC. A rescuer dove into the canal, but he couldn't find the BC. Because the water was so cold, he couldn't make a second attempt. Another Soldier volunteered to go in and found the BC, who was buried head-first in the muddy bottom.



MSG PAUL GILBERT
Accident Investigator
U.S. Army Combat Readiness Center

The BC was pronounced dead at the scene.

This night was filled with dangers. But, oddly enough, it wasn't the obvious hazards of the raid that killed those five Soldiers—it was the hidden dangers. The most disturbing of those dangers—a lack of accountability—was hidden in plain sight.

Accountability and responsibility are the cornerstones of Army leadership. On this mission, however, they were hidden. The mission



"Leaders must always maintain command and control and never allow these types of dangers to hide in plain sight."

en in Plain Sight

commander was focused on completing the raid and didn't monitor the convoy. The platoon sergeant failed to account for the whereabouts of his Soldiers. These omissions of accountability and responsibility were basic leader failures. Both the mission commander and platoon sergeant lost sight of their standing operating procedures (SOPs), which are critical to mission success. Dangers such as the road collapsing were hidden from sight and unavoidable. The dangers of complacency and basic leadership failure, i.e., accountability and responsibility, were hidden in plain sight and entirely preventable.

What are the lessons learned from this accident? The fundamental philosophy of Army leadership is mission and Soldiers, and the guiding principles of this philosophy are accountability and responsibility. The leadership lost sight of these principles on this mission. They assumed all convoy members were present and accounted for, but they didn't make sure. They also didn't follow their unit's SOP, which spelled out convoy and reporting procedures. Leaders must always maintain command and control and never allow these types of dangers to hide in plain sight.

We always hear "mission

first." But to achieve mission success, we must have adequate mission capability. A BFV and its crew together are an awesome fighting force. The loss of this crew seriously degraded mission success. The welfare of our Soldiers is entrusted to the officers and NCOs leading them. Keep accountability and responsibility in plain sight. There's no room for preventable hidden dangers in combat or at home. 

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Mother Nature can be harsh, especially in the desert. Even our Army—the most mobile and powerful in the world—must bend to her power, especially during sandstorms. Sandstorms have a negative impact on personnel and equipment readiness, with visibility reduced to near zero. Any type of operation during such conditions is very dangerous. However, you can protect yourself and get the mission done, even during the worst of conditions.

Sandstorms occur frequently on the Arabian Peninsula and are most common in April. These storms are created by strong, dry winds that blow close to the desert's surface. The heat of the desert terrain causes the winds to become stronger and hotter. Throw in a cold front and tornado-like forces suddenly appear, complete with howling winds and swirling sand.

A sandstorm's leading edge creates a wall of dust that reduces visibility to near zero. Driving in Iraq is already dangerous,

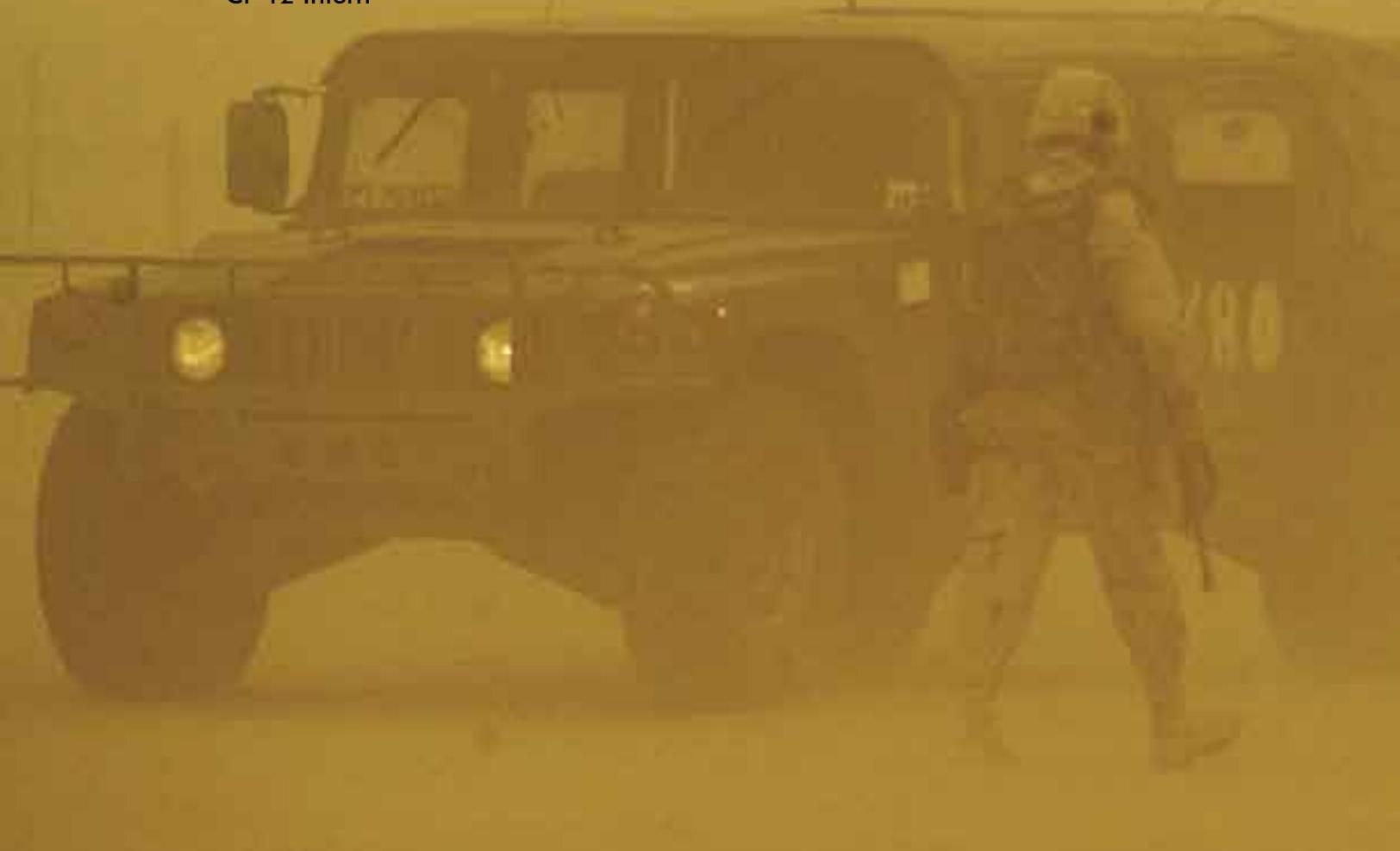
even in the best of conditions. The probability of an accident increases when you factor in a sandstorm and near-zero visibility.

Operating vehicles during a sandstorm is extremely difficult, so the optimum choice is to stay put on your base or in a safe place. However, if the mission must go on, drive slowly. Wear goggles with the clear or yellow-tinted lens insert to protect your eyes. If you don't have goggles, wear any type of eye protection that might be available.

Thermal imaging devices

SAVING FOR A

DANIEL MCGLONE
CP-12 Intern



provide vehicle and tank drivers better visibility during sandstorms. An Army News Service story in August 2003 explained the benefits of these devices to Soldiers at the beginning of the Iraq conflict. "During the infamous Iraqi sandstorms several months ago, our Army had very limited visibility," the story read. "Soldiers in Iraq discovered they still had good visibility with their individual and crew-served thermal weapons sights, even when the sandstorms obscured

nearly every other optical sensor."

Communications during sandstorms are very problematic. Sometimes, the wind and "blasting noises" make communication between Soldiers—even those in the same vehicle—nearly impossible. Even so, drivers, co-drivers, and vehicle commanders must communicate with one another. Situational and environmental awareness is vital to Soldier safety during sandstorms, especially in moving vehicles. Drivers and vehicle commanders must use the

desert deployment.

- Always wear protective eyewear.
- Protect your airway by placing a cloth over your nose and mouth.
- Close vehicle vents and cover all openings.
- Drive slowly.
- Drivers, co-drivers, and vehicle commanders must communicate with each other.
- Know your route and maintain situational awareness.
- Drive with lights on to help others see your vehicle.

A SANDY DAY

scanning method while driving during these storms.

Sandstorms also present physical dangers to Soldiers. Blowing sand can make breathing difficult, and fine sand particles cause a hacking cough. Place a T-shirt or cloth over your nose and mouth to help you breathe and protect your airway. Close all vehicle vents and place sand bags or other material over any openings. Both these measures are important because sand and dust within the Persian Gulf region can carry infectious diseases. Protect your airway as much as possible.

Sandstorms are very dangerous and are not a laughing matter. Be prepared and know the proper techniques to prevent an accident and protect yourself when sandstorms strike. Keep the following tips in mind when Mother Nature decides to awe you with a sandstorm during your

• If your vehicle breaks down, use it for protection from the storm and any enemy elements. Do not leave the vehicle to search for help; the storm will end eventually.

- Be prepared for the unexpected. Always carry a kit bag, rucksack, basic issue items, batteries, and food and water in your vehicle in case you break down or have to pull over.

For more information on sandstorms, visit www.sandstormsiniiraq.com, www.mycamouflage.co.uk/survivalDesert.asp, or www.geology.wisc.edu/course/g115/projects03/bnysenbaum/sandstorms.htm. Have a safe deployment, and we'll see you back home! 

Contact the author by e-mail at daniel.mcglone@us.army.mil.

MONDAY MORNING MAINTENANCE

CPT RICHARD ARNOLD
A Co., 1-145th Aviation Regiment
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“Look out!” screamed the LMTV’s truck commander (TC). The driver slammed on the brakes to avoid hitting the cargo HEMTT stopped in front of him. The collision, however, was unavoidable—the LMTV was traveling at the 30-mph catch-up speed in a blinding, unexpected dust storm. The vehicle had pulled over because of a loose cargo strap and fallen behind the lead vehicles just before the dust storm hit.

As the LMTV crashed into the cargo HEMTT, the defective driver’s seatbelt gave way and the driver impacted the front windshield. He lay slumped over the steering wheel, unconscious and bleeding from a head wound. The young TC, a second lieutenant, could not believe an accident had happened with him in command. “How can everything go wrong so quickly?” he screamed as he started performing first aid.

The previous scenario is a true story—it just hasn’t happened yet. What went wrong? How did this accident happen? Just like any other accident, several factors came into play. These factors can be small in scope, but when they meet quickly, the results can be fatal.

First, the LMTV pulled over to tighten a cargo strap. The convoy commander, who wanted to stay on schedule, allowed only the trail vehicles to stop instead of the entire convoy. This was the first factor: a poor decision. Second, the sandstorm was unforecasted and appeared out of nowhere. This was the second factor: a sudden environmental

condition. Third, the lieutenant didn't enforce the unit's "Kevlar on while operating a vehicle" policy because it was unpopular and uncomfortable. The new platoon leader wanted to be cool with his Soldiers, which led to the third factor: a violation of standing policy. Fourth, the driver's seatbelt was defective and was identified as such during preventive maintenance checks and services (PMCS). However, the motor pool didn't have any spares, and the seatbelt worked on occasion if it was fastened just the right way. The operator didn't write up the fault because the LMTV was the unit's only transportation to the base camp's dining facility. This was the fourth factor: improper PMCS procedures. Bad decisions and disobeying orders are important factors, but the LMTV should've been deadlined for safety due to the PMCS violation.

Monday morning on most training schedules is called "command maintenance." Commanders can use this time to focus on their equipment's combat readiness and train their Soldiers in proper maintenance procedures. Leaders at every level must balance the competing priorities of maintenance and realistic combat training. However, the half-day used for maintenance training and PMCS every Monday is time well spent if it isn't wasted. A good command maintenance program includes three vital components: command emphasis, leader involvement, and sustainment training.

Command emphasis

Commanders should make command maintenance a top priority and their presence known. One technique is pushing all important meetings to the afternoon and having a unit formation at the motor pool. If

the commander is at the formation alongside their Soldiers, the correct message is sent: This is important! Commanders on-site are more likely to catch Soldier mistakes and also know the status of all assigned equipment.

An effective maintenance program doesn't end with vehicles. Command maintenance Mondays are a good time for unit armorers and nuclear, biological, and chemical (NBC) and night vision goggle (NVG) custodians to perform PMCS on that equipment. Taskings and details are unavoidable and drain the number of Soldiers at the motor pool. Even so, the program will be successful if a half-day is reserved each week on the training schedule for command maintenance and the commander is present.

Leader involvement

Commanders can't be everywhere at the same time, but their leadership can be felt by empowering their NCOs during PMCS. NCOs are the backbone of the Army, and PMCS is the backbone of a good command maintenance program. With NCOs supervising PMCS, the commander can be confident proper procedures are followed and safety issues are corrected. A good NCO will ensure Soldiers use the operator's manual and follow each step of the PMCS process within its guidelines. NCOs should be familiar with Army Regulation 385-55, *Prevention of Motor Vehicle Accidents*, and also guide those Soldiers who might need extra supervision. Strict adherence to standards and safety are a vital component of every successful program, and leadership involvement at every level makes it happen.

Sustainment training

PMCS can become more

effective through sustainment training once the other two criteria—command emphasis and leader involvement—are met. Every program's goal is 10/20 standards, but there must be a program in place and trained Soldiers working toward that goal to achieve it. Take, for example, the DA 5988. Does every equipment operator in the unit know how to read this document? Accuracy of the three-section 5988 is critical and should be reviewed every time PMCS is performed. Soldiers must understand the document and know how to fill it in correctly. For instance, faults noted in section III should have parts requested and annotated in section II with valid document numbers. Soldiers must be trained to properly cross-reference sections in these type documents.

In addition, Soldiers who conduct PMCS must be licensed and familiar with the equipment. Units should incorporate operator-level training and licensing as part of their quarterly training program. Personnel will rotate constantly, and others must serve as operators when the primary Soldier is absent due to TDY, leave, or a special tasking.

Can a good command maintenance program save lives? The answer is an obvious yes, so long as the command emphasizes it, leaders are involved, and Soldiers are trained sufficiently. Mistakes are made every day, so we can't become complacent. The lives of our Soldiers depend on standards, discipline, and the examples set by their leaders. Don't let events snowball until someone dies. 

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BACK TO THE

Few events are more regrettable than a Soldier dying because someone was careless. Following basic safety principles and using good, commonsense judgment are essential to maintaining a secure environment in theater and at home. For Army mounted operations, these principles are outlined in numerous “ground safety” guides.

We must be diligent about ground safety in and around all Army vehicles, whether they’re wheeled or tracked. Leaders must perform a risk assessment before all mounted operations. It’s the responsibility of every leader to manage the risks—including those posed by the enemy—once the risk assessment is complete.

Training, ground guides, seatbelts, and PMCS

All vehicle operators must be licensed and trained properly for their vehicle. Ground guides are an essential element of safe driver practices, and equally as important is the use of seatbelts in all Army vehicles. All too often we’ve seen the terrible harm unbuckled Soldiers suffer, such as severe neck and abdominal injuries. Preventive maintenance checks and services (PMCS) also must be performed before any vehicle is used.

Mechanically unsafe vehicles, such as those with faulty brakes, errant steering systems, or even exhaust problems, should never

be put into operation before all deficiencies are corrected. Drivers should conduct a 360-degree search around their vehicles to detect problems. The 360-degree search also allows drivers to ensure no one is close to or under the vehicle before they move it.

Troop and cargo loads

Another consideration is the vehicle’s physical dynamics, which change when it’s loaded with troops or cargo. Vehicles must not operate under conditions where passenger or cargo loads exceed their carrying capacity. Every vehicle’s –10 includes factory-specified load limits. Vehicle loads also should be inspected and secured before departure, and troop and cargo straps must always be used. Soldiers also must not ride on top of cargo. Leaders must brief all drivers, assistant drivers, and the highest-ranking vehicle occupant before each mission. Hazardous areas or conditions must be identified and discussed during this brief, along with safe following distances, proper speed, route of travel, rest periods, and signals.

Carbon monoxide poisoning

Vehicle accidents such as rollovers or collisions are obvious hazards. However, carbon monoxide poisoning is another potential danger in vehicle operations. Carbon monoxide is a gas emitted from many sources, including internal combustion

engines. It’s colorless, odorless, tasteless, and deadly. Several Soldiers over the past few years have died from carbon monoxide poisoning in a variety of situations, including heated tents.

To counter this threat, Soldiers must not sleep in vehicles with the engines running. Carbon monoxide is heavier than air and concentrates in low-lying areas, so Soldiers should use extreme caution around vehicles parked in depressions. Electric generators in the field should be considered an equal hazard to any AMV engine, since they also emit high concentrations of carbon monoxide. Also know the symptoms of carbon monoxide poisoning: headache, dizziness, sleepiness, and tightness across the forehead. Seek medical attention immediately for any Soldiers exhibiting these symptoms, and move them to fresh air as quickly as possible.

Noise disassociation

Noise disassociation usually occurs around day six of an operation. At this point Soldiers hear the noise of vehicles or equipment but fail to observe the direction of the noise. In effect, noises are heard but subconsciously silenced. Soldiers are more likely to be run over if they’re suffering from this “masking effect,” when noise doesn’t trigger an alarm to get out of the way.

Soldiers must always find the source of any new sound. If all

BASICS

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Soldiers made this practice a habit, ground safety in general would be enhanced greatly. Additionally, Soldiers must never eat, rest, visit, or sleep on vehicle trails.

Sleep deprivation

It's well known the human body can't function without sleep. But those of us in uniform often must perform extended missions with little or no sleep. After all, how would it look

for a Soldier to admit he can't keep up with his comrades because he's tired? Fatigue causes errors in judgment, slowing of the reflexes, and a general dulling of the senses. A fatigued Soldier is at higher risk of making potentially deadly mistakes than a well-rested one. Soldiers must get a minimum of 4 hours continuous sleep every 24 hours—any less will impair military effectiveness.

Whether you're on a

peacekeeping or combat mission or on post at home, all risks should be calculated with a very low tolerance for error. Excluding combat losses, driving accidents kill the greatest majority of our Soldiers today. Don't become a statistic—take care and drive safe! 

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The M939-series 5-ton truck is a workhorse of the Army. These trucks provide vital transportation services both in theater and at home, and their value has been proven countless times. Unfortunately, the M939 and its variants have been involved in numerous fatal accidents over the past several years. In one recent accident, an M923A2 rolled over in Iraq, killing one Soldier and injuring seven more. Speed was a factor in this accident, like most involving the 5-ton.

Safety of Use Message 98-07 established a maximum speed limit of 40 mph for the M939 and its variants, and also directed a tire replacement for the fleet. This SOUM was complemented by a modification work order (MWO) to equip every vehicle in the M939 fleet with antilock braking systems. However, this MWO is not yet complete.

The Pentagon recently reannounced the original message—dated 230739Z May 02—to clarify the safe operation of M939 trucks not equipped with the antilock braking system. The message places special emphasis on annual sustainment training for active-duty M939 operators and semi-annual sustainment training for Reserve Component operators. In addition, a placard stating the maximum safe operating speed of 40 mph must be placed in a prominent location in the driver's position of all trucks not equipped with the antilock braking system.

Leaders must know the hazards associated with the M939, especially in the Army's present deployed environment. Keep the following known hazards in mind when you or your Soldiers step

into the driver's seat of these vehicles.

Driving too fast for conditions. Until the MWO is complete, M939 trucks are not to be driven above 40 mph, which means 40 mph is the extreme limit. Driving too fast for conditions creates an environment for compounding the effects of the other hazards listed below. Unit leaders must evaluate and re-evaluate the conditions the truck will be used in and apply the appropriate controls.

Applying excessive pressure to the brake pedal. Tailgating can create an extremely hazardous condition when drivers overreact to vehicles braking to their front. Over-braking can lock up the wheels and stall the engine, causing the driver to lose control.

Operating on asphalt roads in damp or wet conditions. Damp or wet conditions contribute to the vehicle losing traction when the brakes are applied suddenly and with too much pressure. Drivers must slow down when damp or wet conditions exist. Leaders also must re-evaluate the need to operate in these conditions, implement additional control measures, and inform drivers of the increased risks.



M939 STILL

Operating with light loads on asphalt roads. The M939-series truck was designed to carry heavy loads in off-road conditions. The accidents we often see involve the trucks operating on asphalt roads. The trucks generally are used to haul cargo or transport Soldiers to and from training and details (see Army Regulation 385-55, *Prevention of Motor Vehicle Accidents*, for guidance on transporting Soldiers). You don't have to add weight to operate the truck safely, but leaders must recognize the increased risk of operating in these conditions. Speed limits and safe distances between vehicles must be enforced, and drivers must be informed of the increased risks.

Other hazards. The following hazards must be considered in addition to the ones listed above:

- **Tailgating.** Leave enough room between you and the vehicle to your front to brake correctly and safely.

Leaders must know the hazards associated with the M939, especially in the Army's present deployed environment.

- **"Cruise control."** Don't use the hand throttle as a "cruise control." When used in such a manner, the hand throttle will not disengage when the brakes are applied.

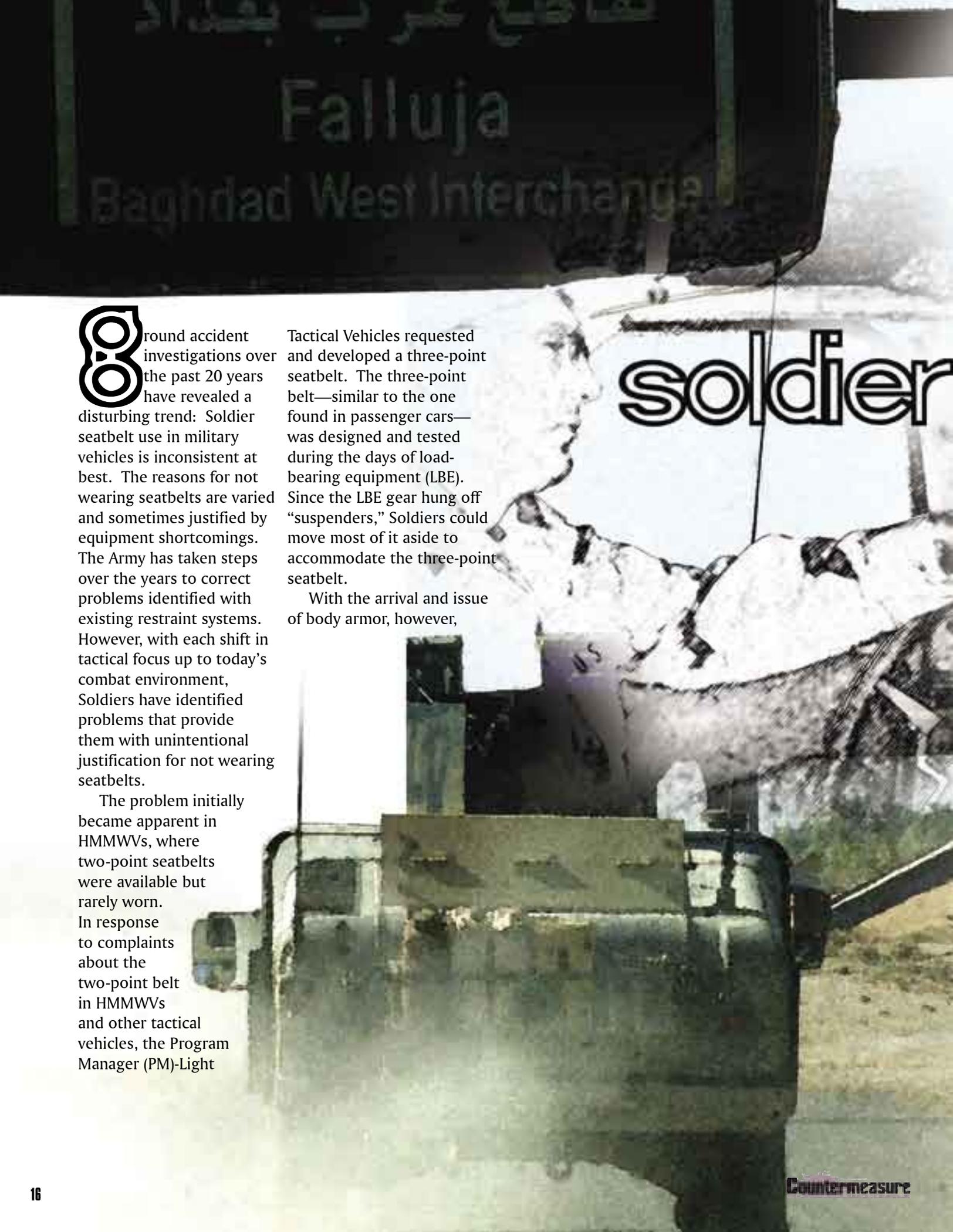
- **Tire pressure.** Do not let tire pressure get below 60 psi.

The M939-series of vehicles will be around for a long time, so make sure you learn how to operate them safely. It's a matter of you and your Soldiers making it home from the fight. 🚛

Comments regarding this article may be directed to the editor at (334) 255-1218, DSN 558-1218, or by e-mail at julie.shelley@safetycenter.army.mil.



ALL OUT THERE



8round accident investigations over the past 20 years have revealed a disturbing trend: Soldier seatbelt use in military vehicles is inconsistent at best. The reasons for not wearing seatbelts are varied and sometimes justified by equipment shortcomings. The Army has taken steps over the years to correct problems identified with existing restraint systems. However, with each shift in tactical focus up to today's combat environment, Soldiers have identified problems that provide them with unintentional justification for not wearing seatbelts.

The problem initially became apparent in HMMWVs, where two-point seatbelts were available but rarely worn. In response to complaints about the two-point belt in HMMWVs and other tactical vehicles, the Program Manager (PM)-Light

Tactical Vehicles requested and developed a three-point seatbelt. The three-point belt—similar to the one found in passenger cars—was designed and tested during the days of load-bearing equipment (LBE). Since the LBE gear hung off “suspenders,” Soldiers could move most of it aside to accommodate the three-point seatbelt.

With the arrival and issue of body armor, however,

soldier

problems with the three-point belt became apparent. The older three-point belts were too short and did not fit around Soldiers wearing body armor. The Army then began a program to replace the short belt with longer three-point belts.

Shortly thereafter, the HMMWV—typically used in the past for Soldier transport—was pressed into service as a combat vehicle during Operations Enduring and Iraqi Freedom. Soldiers continue to fight from the HMMWV on a daily basis in Iraq and Afghanistan. Soldiers in these vehicles must be ready to act on a moment's notice when confronted

their mission equipment. The team concluded the seatbelt design—including the seatbelt attachment point position, latch location, shoulder strap placement, and length—reduced the belts' effectiveness. The team confirmed Soldier complaints after evaluating the belts with Soldiers wearing full mission equipment including body armor, ammunition pouches, protective masks, first aid kits, and hydration kits.

The PM-Tactical Vehicles was assigned to develop a solution for the HMMWV—the most common vehicle involved in accidents, followed by

-friendly seatbelts

COMING SOON

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with an enemy ambush or improvised explosive device. Vehicle accidents such as rollovers have become more common as Soldiers drive faster and more erratically to escape real threats. In many of these accidents, one or more Soldiers not wearing their seatbelts were either ejected from the vehicle or crushed, often with fatal results.

The Director of the Army Staff reviewed recent accident reports and requested that the Army G4 establish new seatbelt and occupant restraint systems for the entire wheeled vehicle fleet. A Tiger Team was assembled to determine if the current configuration supported contemporary Army doctrine and applications. Various fleet vehicles were inspected, and the team concluded most seatbelts were generally inadequate. The team found numerous seatbelt configurations: two-point belts in some HMMWVs, the short three-point belts in others, and the longer three-point belts in the remaining vehicles.

The team developed a written survey and interviewed Soldiers from three in-theater divisions—the 101st Airborne Division and 3rd and 4th Infantry Divisions (ID)—with nearly 850 passionate responses returned. The Soldiers said the primary reason they did not wear their seatbelts was fear they could not exit the vehicle quickly during an enemy attack. The Soldiers also said the belts were too short and snagged on

the M939-series and Family of Medium Tactical Vehicles. These three vehicle series account for more than half of all Army Motor Vehicle accidents. During the redesign, the team built upon multi-point seatbelt systems already in use in the Army and industry. The team also identified the need to standardize seat frames and restraints between fleet-series vehicles.

Once prototypes became available, the sterile world of design had to meet the reality of combat. Soldiers from the 101st tried out the new seats and five-point seatbelt configurations. Based on their comments and observations, the seat and restraint systems were refined and delivered to the 4th ID. The suggestions from these combat-experienced units were incorporated in the final design.

The new HMMWV integrated seat and restraint system includes the seats, five-point seatbelts, mounting kit, and pillar upgrades for rollover protection. The system must complete federal motor vehicle safety testing before being sent to the Army Test and Evaluation Command for certification. 

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STUFF HAPPENS

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Stuff happens when you least expect it. This cliché perfectly describes my experience in Iraq. High operational tempo is no excuse for cutting corners or taking chances, but many times safety considerations are

the first things overlooked in combat. Combat itself involves a long list of hazards we can never eliminate fully, and our operational environment is often just as dangerous. Fire is one such hazard I've encountered several times since deploying to Iraq.

There are many potential sources of fire in Iraq, which isn't surprising when you consider the tangle of wires that seem

to come from everywhere. Some wires are left from our buildings' former residents (was there no building code before the war?). Most, however, were installed after the war in the most field-expedient—and often haphazard—way. These wires are of mixed type and output quality and were rigged for speed, not safety. When you factor in a potentially wet environment, a fire is just waiting to happen. I'm only a few months into my deployment and I've already witnessed several fires caused by electricity in command posts and living areas.



Vehicle fires are another issue commanders are concerned with in theater. The causes of these fires are varied, and often Soldiers don't have the resources to react quickly. And, if a vehicle catches fire outside the relative safety of the camp, Soldiers are vulnerable to hostile action. Vehicle fires also aren't limited to the wheeled variety. In fact, aviation fires are a serious concern to many Soldiers because of their potential to start without warning and rapidly grow beyond manageable size. We're operating these vehicles—both wheeled and winged—in some of the most dangerous and demanding conditions imaginable, and we must anticipate the possibility of fires.

It's true combat is inherently dangerous, but some Soldiers will find ways to make it even more so. Soldiers must always use common sense, whether they're in theater or training back home. For instance, if you're on guard duty, it isn't wise to light trash on fire to stay warm. The fire might suddenly grow larger than you intended, and there's always the danger

of carbon monoxide poisoning with indoor fires. You might also want to think twice about lighting a cigarette near a fuel spill. These examples may seem far-fetched, but they all happened recently and each could've escalated into a serious incident.

Many of our posts are remote and have limited access to firefighting and crash/rescue equipment, which reinforces the importance of fire extinguishers. Soldiers should be trained in the proper use, selection, and placement of fire extinguishers. Units should choose an extinguisher rated for the most likely type of fire to be encountered and ensure it's big enough to be effective.

Class A extinguishers are used for ordinary combustibles including wood and paper. Class B extinguishers are employed on flammable liquids, greases, and gases. Class C extinguishers are used for energized electrical equipment. Portable extinguishers also are rated for the size of fire they can handle. This rating is a number from 1 to 40 for Class A fires and 1 to 640 for Class B fires. The rating is listed on the label—for example, 1A or 2A and/or 5B, 10B, or 20B. The higher the number, the larger fire the extinguisher can handle.

Once the right extinguisher is selected, it must be placed in an obvious location such as an exit or corridor. Extinguishers should be inspected periodically for serviceability. Leaders must ensure Soldiers are trained to safely use the different types of fire extinguishers found in their workplace. Live training can be performed safely with

the assistance of qualified firefighting personnel; however, if this isn't possible, the PASS technique should be discussed at a minimum. It's simple and goes like this:

- Pull the pin
- Aim the extinguisher nozzle at the flames
- Squeeze the trigger while holding the extinguisher upright
- Sweep the extinguisher from side to side at the base of the flames

Leaders also should point out that fire extinguishers aren't used as their name implies. They're designed only to suppress a fire long enough for everyone to safely exit the area and until firefighters arrive.

We're constantly reminded that combat is dangerous, and there's little we can do to change this fact. However, we can implement a system of controls—including preparation and training—to handle "secondary" dangers such as fires within the combat environment. Stuff happens when you least expect it, and there's little you can do to deal with it if you're not prepared. I never thought I'd help fight a C-130 post-crash fire with all the extinguishers we could find, but I did (that's a story for a different time). Be prepared and make it home from the fight! 

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Anyone in the Airborne community can relate to the famous phrase, “Any time you walk away from a jump, it’s a good jump.” Sometimes, however, Soldiers don’t walk away—they either limp or are carried from the drop zone. Accidents during Airborne operations are common, and causes range from a weak or improper parachute landing fall (PLF) to Soldiers misjudging clearance of ground objects. Airborne operations are unforgiving!

One of the keys to walking

feet above ground level (AGL), the Soldier noticed a tree stump on the drop zone and thought he could avoid it. However, the Soldier couldn’t significantly affect his speed or direction due to low winds. He pulled a slip at 100 feet AGL and prepared to land. The Soldier executed a front PLF and hit the stump with his right elbow, causing injury. The Soldier misjudged the clearance of the stump and was overconfident in his ability to avoid it.

- A Soldier participating in a day jump landed hard on the side of the drop zone’s centerline road. The Soldier

MC-4 Ram Air Parachute System at the appropriate altitude. After he gained control, the Soldier lowered his equipment and prepared to land in accordance with all applicable regulations. Although the Soldier kept a sharp lookout during the descent, the low-visibility conditions prevented him from seeing his combat equipment on the ground. The Soldier landed on his rucksack and suffered a broken tibia and ligament damage to his right leg. He was well-rested, had received adequate sustained Airborne training, and followed all applicable regulations and

HAVE A GOOD

away is stressing the importance of sustained Airborne training, also known as part of “pre-jump.” Sustained Airborne training is a vital component of any Airborne operation. However, seasoned Airborne Soldiers are prone to complacency due to the repetitive nature of the training. Complacency is inexcusable—adherence to standards and attention to detail during this training are critical. The price of your mistake could be catastrophic or even fatal injury to yourself or your Airborne peers. The following paragraphs provide an overview of seven accidents that occurred during the first 2 months of Fiscal Year 2005.

- A Soldier conducting day jump operations followed standard Airborne procedures and conducted all checks before and during the jump. At 200

suffered strained ligaments in his right hip. Strained ligaments are a common injury in Airborne accidents, but seldom reported.

- A Soldier was conducting a non-combat equipment parachute jump. He executed the jump in accordance with the established procedure. However, the Soldier broke his right ankle upon impact with the ground. The injury was caused by an improper PLF.

- A Soldier landed on rough, uneven, sloping terrain, causing leg injuries. He was participating in a night jump and was looking at the horizon when he hit the ground backwards. The Soldier’s feet, butt, and head impacted the ground. He suffered a broken fibula and tibia in addition to torn deltoid ligaments.

- A Soldier conducting a night jump successfully exited the aircraft and deployed his

procedures. However, he could not control the environment.

- A Soldier was the jumpmaster for his lift. The Soldier exited the aircraft, and the parachute inflated with no problems. The winds were 7 to 8 knots when he executed a rear PLF on uneven terrain. The Soldier fractured his lower leg and ankle.

- While conducting basic Airborne training, a Soldier attempted to execute a rear PLF off the swing land trainer. However, the Soldier didn’t keep his feet and knees together and knees bent. After landing, the Soldier complained of pain in his left ankle. The Soldier suffered a spiral fracture to his left fibula caused by the uneven distribution of body weight upon impact with the ground.

The accidents described above demonstrate that trainee, novice, or even master-rated



Class A

■ Soldier was killed when the HMMWV he was riding in was struck by a civilian vehicle. The HMMWV's crew was on patrol and the deceased Soldier was serving as the truck commander. No other details were reported.

■ Two Soldiers were killed and two other Soldiers were seriously injured when they were struck by a civilian vehicle while changing a tire on an M1070 truck. No other details were reported.

■ Soldier died when the HEMTT wrecker she was driving collided head-on with a HET during a convoy movement. The vehicles were part of two separate convoys passing each other on the roadway.

■ Soldier suffered fatal injuries when the up-armored HMMWV he was riding in struck a barrier and rolled over during a convoy movement. The Soldier was serving as the vehicle's gunner.

■ Soldier was killed when the HMMWV he was riding in rolled over into a 4-foot embankment. The driver

attempted to negotiate the embankment, or "wadi," during a combat patrol. The deceased Soldier was serving as the vehicle's gunner.

■ Soldier died when the up-armored HMMWV he was riding in rolled over.

Class C

■ Soldier's finger was severed partially when the travel lock on a HMMWV turret pinched his hand. The Soldier was attempting to tighten the gunner's seat when the gunner rotated the turret, causing the lock to catch the Soldier's finger.

Soldier suffered fatal injuries when the up-armored HMMWV he was riding in struck a barrier and rolled over during a convoy movement. The Soldier was serving as the vehicle's gunner.

The driver lost control of the HMMWV while changing lanes. The deceased Soldier was serving as the vehicle's gunner.

Class B

■ Soldier suffered an unspecified permanent partial disability when the HMMWV he was driving left the roadway, crashed through a guardrail, and landed in an embankment. The HMMWV was carrying Hellfire rockets to an ammunition turn-in point.



Class A

■ Soldier suffered a fatal gunshot wound when he and a group of Soldiers and foreign national troops opened fire on a civilian vehicle that failed to stop at a checkpoint. The civilians in the vehicle did not stop at the checkpoint despite vocal and hand signals, as well as warning shots.

■ A foreign national troop died after being shot by a convoy element at night. The convoy was fired upon while approaching a local police checkpoint. The gunner of one of the convoy vehicles returned fire and struck the foreign national.

■ Soldier suffered a fatal gunshot wound while participating in a live-fire room-clearing exercise. *Editor's note: Complete details on this accident are available in the Investigator's Forum article "It Was an Easy Range" on page 12 of the March 2005 Countermeasure.*

Class B

■ Soldier suffered a permanent partial disability to his right hand when a flash-bang exploded while he was cleaning

his personal TA-50 and equipment.

Class C

Editor's note: The following Class C accidents all involve Airborne operations. Please see the article "Have a Good Jump" on page 20 of this issue for information on safe parachute operations.

■ Three Soldiers suffered fractures to their ankles during separate parachute jumps. The Soldiers failed to keep their feet and knees together during the parachute landing fall (PLF) portion of the jumps.

■ Soldier suffered a broken hip when he failed to shift and rotate during the PLF of a parachute jump.

■ Soldier suffered a broken leg due to an

improper PLF during a parachute jump.

■ Soldier suffered an ankle injury due to an improper PLF during a static line parachute jump.

■ Soldier suffered a torn bicep when he rotated his left arm over a static line while exiting the aircraft during a parachute jump. The line wrapped around the Soldier's arm, causing the injury.



Rollover procedures

The driver—

- Releases the accelerator.
- Keeps his hands on the wheel and braces for an impact.

• Yells, "Rollover."

NOTE: All occupants should be wearing seatbelts.

- If time permits, shuts down the engine.

The gunner—

- Drops down from the hatch into the vehicle.

- Holds onto a stationary object.

• Yells, "Rollover."

NOTE: If possible, the vehicle commander grabs the gunner's legs to assist him into the vehicle.

After the rollover has been completed

The driver—

- Shuts down the engine.
- Activates the fixed fire extinguisher, if available.
- Disconnects the microphone plug, if available.
- Checks for injuries and seeks medical

attention as needed.

- Exits the vehicle.
- Checks for fuel spills and attempts to contain them, if possible.

The vehicle commander—

- Checks the crew for injuries and seeks medical attention as needed.
- Disconnects the microphone plug, if available.
- Exits the vehicle with the crew.
- Accounts for personnel and sensitive items.
- Checks for fuel spills and attempts to

- contain them, if possible.
- Reports to higher headquarters.
- Seeks recovery of assets.

The gunner—

- Clears the weapons.
- Checks the weapons' serviceability.
- Disconnects the microphone plug, if available.
- Exits the vehicle and assists the driver.

*Procedure taken from
ARTEP-19-100-10-DRILL*



ARMY GROUND RISK-MANAGEMENT INFORMATION

Countermeasure

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MAY 2005



***It's Gettin'
Hot Out Here***

Countermeasure

CONTENTS

- 3** Protect Your Squash!
- 6** Best Practices
The First Enemy You Meet
- 8** Don't Forget the Camelbak
- 10** The Clear Facts on Water
- 12** Little Things to Keep in Mind
- 14** You're Not a Pet
- 15** Ouch! That Burns!
- 16** Training Drivers as They'll Fight
- 20** Probability, Perception, and Putting on Your Seatbelt
- 20** The Road to Baghdad
- 21** Don't Drive It Like You Stole It!
- 22** Accident Briefs
- 24** 115 °F in the Shade

Top 5 features



6



12



16



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Man, is it hot or what? What is “hot,” anyway? I guess it depends on your point of view. What my teenage daughter considers hot, I consider criminal. What a guy from Michigan considers hot, a bubba from Alabama considers sweater weather. And compared to July in the sandbox, a sweltering summer day in the Deep South seems like a break. Obviously hot is relative, but here’s my point: Heat kills, but it also adversely affects mental performance long before it’s deadly. Soldiers ill prepared for the heat tend to perform poorly, and today’s Army is no place for poor performance. You must do everything you can to protect your “squash!”

Protect Your Squash!

COL JOSEPH MCKEON

Command Surgeon
U.S. Army Combat Readiness Center

Mental performance

Have you ever noticed how hard it is to stay awake in an afternoon class when the room’s hot, the instructor’s boring, and you’ve just had lunch? Part of the problem is the boring instructor (but you stayed awake in the morning);

another issue is lunch (all that blood flow is going to your gut to digest that super-sized value meal); and another factor is what we call the circadian trough (the time of day when everyone’s sleepy). But the hot, stuffy room is a big piece of the puzzle. We just don’t perform as well mentally when we’re in a hot environment. It’s no wonder much of the world takes

a siesta on hot, non-productive afternoons.

The upper limit of heat exposure for unimpaired mental performance is about 85 °F wet bulb globe temperature (WBGT) for an individual working outdoors 2 hours or longer. (A WBGT of 85 °F is at the bottom of the “yellow” range and is a relatively modest heat threat.) So, even with proper

work and rest cycles and adequate hydration, Soldiers in hot environments will suffer mental performance degradation that could affect the mission.

Continuous, repetitive, boring tasks tend to be affected most by degraded mental performance. Driving in a convoy in the afternoon with K-pot and body armor on with an outside temperature well over 100 °F immediately comes to mind as an example. With the hazards that exist from man, machine, and environment, a convoy movement isn't the best time for your mental performance to suffer. Leaders must take these factors into consideration when planning operations in hot conditions.

Vigilance

Vigilance is one of those fancy words that means being alert, watchful, or paying close attention. Vigilance is affected negatively by heat, which isn't a good thing—especially in a combat theater. Many military activities require Soldiers to be watchful and alert for extended periods of time. Performing sentry or fire guard duty, surveillance activities, monitoring instruments, and operating a vehicle all demand vigilance. Temperatures higher than 85 °F with 63 percent relative humidity affect the vigilance of Soldiers, even those well acclimatized to the heat. It's important that commanders recognize this limitation and take steps to ensure their Soldiers get adequate breaks from extended duties. An extra set of eyes also will help mitigate these effects. Don't set your Soldiers up for failure!



"Leaders must do everything in their power to provide a cool, protected environment for their Soldiers. When that isn't possible, leaders should plan ahead for possible performance lapses due to fatigue and mental exhaustion!"

Changes in sleep behavior

Sleep, like food and water, is necessary for health. Humans can go short periods of time without sleep, but eventually a sleep debt will build up and must be paid. A restful night's sleep lets the brain restore itself, thereby allowing the individual to perform at their maximum ability.

Everyone reading this article probably realizes that sleeping in a hot environment affects their sleep in a bad way. Humans acclimatized to heat stress actually increase their physical performance (think about summer football practice and how much "tougher" you were when the season started). Sleep patterns, however, don't improve over time in a hot environment

because sleep quality and effectiveness are reduced at high temperatures. In fact, studies have shown that heat is more disruptive to sleep than noise! In hot environments you don't wake up as rested as you should, and your performance suffers as a consequence.

Leaders must do everything in their power to provide a cool, protected environment for their Soldiers. When that isn't possible, leaders should plan ahead for possible performance lapses due to fatigue and mental exhaustion. The unit's risk assessment also should reflect the increased hazard of fatigue.

Conclusion

There you have it. Heat cramps, heat exhaustion, and

heat stroke have been described frequently in this magazine and other publications in the past, but the adverse effects on cognitive abilities often aren't discussed. Living and working in a hot environment has a significant impact on human sleep patterns, work ability, and cognitive function. Simply put, you have trouble sleeping and paying attention, and you also aren't as smart as usual. Stay cool, and make sure you take these factors into consideration when planning your next convoy or mission! 🐻

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THE FIRST ENEMY YOU

If you deploy to Operation Iraqi Freedom this summer, your Soldiers will face a crushing enemy before they cross the Kuwaiti border and head north. This enemy—heat—has defeated a significant number of Soldiers since the beginning of operations in Iraq. Between July and August 2004 (the hottest months in Kuwait),

134 Soldiers there were reported as heat casualties and were lost from training. It's likely the actual number is underreported by as much as 80

percent, and the true number of injured Soldiers might be as much as five times higher.

The rate of reported heat injury per week peaked at 20 per 10,000 Soldiers in mid-July 2004. Each heat casualty was lost to their unit for 2 or more days out of an already tight training schedule. Three Soldiers likely were lost to the fight permanently. These three developed heat stroke, and two were from the same unit and suffered their injury within days of each other. They survived but were evacuated from theater, unlikely to return.

As the medical brigade in theater, we know in advance

the schedule of units moving into the northern Kuwait camps. Even without this information, however, we can tell when a new unit rotates in because of the spike in heat injuries. The camps' medical facilities typically begin seeing heat casualties within the first week of a unit's arrival. One unit that rotated through in summer 2004 evacuated as many as 10 percent of its Soldiers to the local Level II facility in a single day.

Soldiers we've talked to said they believed exposure in the summer months in the United States sufficiently prepared them for deployment to Kuwait



U MEET

BG MICHAEL WALTER
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8th Medical Brigade (Forward)
Kuwait
and
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and Iraq. This belief couldn't be further from the truth. The desert conditions of Kuwait and southern Iraq aren't duplicated anywhere in the United States. We also often hear, "But I was drinking water, doc." Adaptation to this harsh desert environment is more than a matter of simple hydration. Water consumption is only one part of the process—acclimatization is a vital component of Soldiers making it through the summer months in the desert.

One unit that did everything right to help their Soldiers beat the heat was the 2nd Brigade Combat Team (BCT) of the 2nd Infantry Division (2ID). This unit's Soldiers avoided significant heat injury altogether. The 2nd BCT deployed to Kuwait

in late summer 2004 during the peak months for heat injury. Although a small number of 2nd BCT Soldiers received intravenous fluids on firing ranges for treatment of volume depletion, there were no reported cases of heat exhaustion or heat stroke. The 2nd BCT was successful because their overall approach to heat injury prevention was based primarily on acclimatization.

The 2nd BCT's Soldiers began their acclimatization process in Korea before their deployment. They trained all summer in the field through high temperatures and high humidity while wearing individual body armor with small arms protective insert plates

and Kevlar. On a typical August day in Korea, the temperature is 88 °F with relative humidity between 60 and 90 percent. These Soldiers trained as they would fight, wearing the equipment they would fight with, in the hottest conditions available to them.

Once in Kuwait, the unit trained from 0400 to 1100, took a break in the afternoon, and resumed training in the cooler, early evening hours. Maintenance operations also



THE FIRST ENEMY YOU MEET

were conducted at night, because it was too hot to work around heavy metal during the day. The 2nd BCT's Soldiers deployed in excellent physical condition and continued their fitness program, which was scheduled around other training, in the early morning and evening.

The unit's Soldiers received personal training on the heat threat. They learned to recognize the symptoms of early heat injury in themselves and their fellow Soldiers and were empowered to take action. For example, Soldiers were allowed to check themselves off the firing line to sit in the shade if they felt heat effects. Leaders saw many examples of Soldiers taking buddy actions at the first sign of heat injury, measures that probably prevented serious casualties.

The unit also took the usual steps to stress hydration. Every Soldier was issued a CamelBak, which was made a mandatory part of the uniform in the months before deployment. Cold water and Gatorade also were readily available for the Soldiers. These disciplines were modeled by the unit's leaders at every level. An additional example of leadership emphasis was the stress placed on the use of lip balm and sunscreen. Special unit patches also were sewn on the desert camouflage "boonie" caps to encourage Soldiers to wear them to reduce exposure to direct sunlight.

Overall, the 2nd BCT took

more time to acclimatize and thus was better prepared for the desert than any unit we observed in summer 2004. Their strategy could be duplicated easily by any unit deploying to the desert, particularly in the summer months. Acclimatization should begin at home station well before the mobilization process. Command emphasis on basic measures to reduce unnecessary heat exposure is vital to overcoming the heat threat in theater. These measures include empowering Soldiers to monitor their own progress and using the buddy system. Heat injury prevention begins with effective leadership and leader role-modeling behavior. In a combat environment with so many unpredictable hazards, heat injury prevention is a force multiplier worthy of command emphasis. 

About the authors: BG Walter is the Commanding General, 8th Medical Brigade (Forward) and the Combined Forces Land Component Command Surgeon. COL Callahan is the 8th Medical Brigade (Forward) Chief of Professional Services. CPT Hing currently is assigned as the 2nd BCT Surgeon.

This article was reprinted courtesy Infantry and edited for content. The entire article can be found in the November-December 2004 *Infantry*.



DON'T FORGET

JULIE SHELLEY
Editor

Your deployment orders have come through and you're packing for a tour in Iraq or Afghanistan. You begin checking off those essential items when, suddenly, you realize your CamelBak has been in the closet for more than a year now. Even worse, there's still a little water left from the last time you used it! What can you do now?

DID YOU KNOW?

The standard CamelBak reservoir holds 100 ounces of liquid. If the approximately 150,000 troops deployed to Iraq drink 2.25 gallons of water per day (the recommended guideline for regular activity) through their CamelBaks, together they will have consumed more than 96 million gallons of water during a 12-month deployment! That's enough water to fill nearly 5,350 average-size swimming pools!

GET THE CAMELBAK

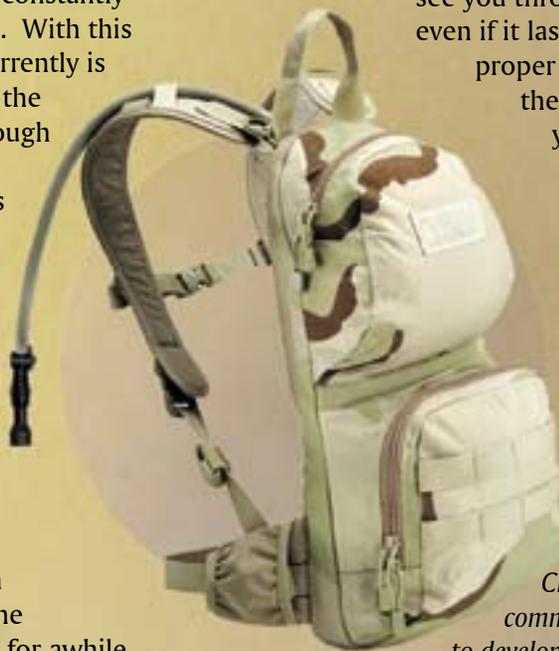
Every Soldier deploying to Southwest Asia, or even gearing up for an exercise at the National Training Center or Joint Readiness Training Center, hears “hydration” over and over again. From basic training on up, Soldiers are reminded constantly of the importance of staying hydrated. With this goal in mind, the CamelBak system currently is being fielded to all Soldiers as part of the Army’s Rapid Fielding Initiative. Although the CamelBak is known for its easy portability and use, individual systems require routine maintenance to keep them safe.

First and foremost, the CamelBak must be kept clean. Proper cleaning prohibits the growth of mold and bacteria, and also removes the dust and dirt that collects around the mouthpiece and fill plug in the desert. Wash the system daily with warm, soapy water. (Before storing the CamelBak, be sure the system is completely dry.) When the system hasn’t been used for awhile, fill the reservoir with water, add 2 teaspoons of household bleach, and let it sit overnight. Thoroughly rinse the system the next morning with warm water. Also, because the CamelBak is a closed system, sports drinks and other beverages containing sugar accelerate the growth of mold and other contaminants inside the reservoir. Always rinse the system thoroughly with warm water after each use with sports drinks.

The fluctuating temperatures in the desert won’t make much of a difference to your CamelBak. Cleaning is the same

in both hot and cold environments. However, the water inside the CamelBak will reach the ambient, or outside, temperature in just a few hours. When the temperature gets hot, store the full reservoir overnight in a refrigerator to keep the water cool and inhibit bacterial growth. To delay freezing during the winter, keep the system close to your body under insulated layers.

CamelBak systems are designed to last and should see you through your deployment, even if it lasts a year or longer. With proper cleaning and storage, the reservoir will last many years. Bite valves typically wear out in 3 to 4 years, depending on how frequently you use them. And, when you do make it home, be sure to store your CamelBak in a dark, cool place for your next adventure.



Editor’s note: The U.S. Army Soldier and Biological Chemical Command and commercial industry are working to develop a personal hydration

system, such as the CamelBak, that provides adequate protection in a nuclear, biological, chemical (NBC) environment. The makers of CamelBak offer a protective mask adapter kit that includes a valve and protective mask connector, which allows Soldiers to connect their chemical-resistant reservoir to the mask. However, the reservoir’s barrier ability hasn’t been tested thoroughly by the Army. Therefore, CamelBaks haven’t been certified as safe for use in a chemical environment and currently are not allowed in chemical threat areas.

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THE CLEAR FACTS

Water is a precious resource many of us take for granted. Here in the United States, water is readily available with the turn of a faucet. In the desert, however—especially during the summer—water is the key to survival.

Soldiers must stay adequately hydrated to survive in the desert and maximize their warfighting effectiveness. Humans depend heavily on water: Approximately 75 percent of the human body is made up of fluid. A loss of two quarts of fluid, or 2.5 percent of body weight, decreases efficiency by 25 percent. A loss of fluid equal to 15 percent of body weight is usually fatal.

In desert terrain, approximately 9 quarts of water per Soldier, per day, is needed. When Soldiers are active, leaders must ensure each Soldier drinks 2 quarts of water per hour. Soldiers should drink more water as physical activity increases. In very hot conditions, it's better to drink smaller amounts of water more often than to drink large amounts occasionally. Drinking a lot of water at one time can cause excessive sweating and heat cramps.

Dehydration is deadly and hits fast. During high desert temperatures, a resting Soldier can lose as much as a pint of water per hour through sweating! Sweating also can be deceptive in certain conditions. When temperatures are very high and the humidity is low, sweating may go unnoticed because it evaporates so quickly the skin appears dry. Whenever possible, sweat should be left on

the body to improve the cooling process. Soldiers must remain fully clothed—even in searing temperatures—to accomplish this.

At the beginning of their deployment, Soldiers might not always drink the amount of water they require. Newly deployed Soldiers should be encouraged to drink more, especially during acclimation. NCOs and officers must keep track of how much their troops drink to ensure they're getting enough water.

Leaders and individual Soldiers must look for the warning signs of dehydration. Very dark urine is often an early warning sign. Other symptoms include sunken eyes, a dry or sticky mouth, decreased or absent urination, decreased tears, deep and rapid breathing, lethargy, or coma. Thirst isn't an adequate indicator of dehydration because Soldiers might not feel thirsty until they've already lost 1 to 2 quarts of water.

The flip side of dehydration is overhydration—or simply put, drinking too much water too quickly. When sodium (salt) is lost through sweating and water is drunk as the replacement fluid over a period of hours, the sodium left in the blood can become diluted. This dilution causes a condition called hyponatremia, which can lead to damage in certain kinds of body tissues. Changes are most noticeable in the nervous system, where seizures, coma, and even death can occur.

Recognizing overhydration or hyponatremia is challenging because the symptoms resemble those of

heat stroke or heat exhaustion. Early symptoms include confusion, nausea, fatigue, muscle cramps, and weakness. More serious symptoms include vomiting, muscle twitches, delirium, seizures, and coma. The main difference between heat stroke and heat exhaustion, when compared to overhydration, is that overhydration doesn't cause the victim's temperature to rise. Because overhydration can be deadly, the final diagnosis must be made at a medical facility where the victim can be treated properly.

Water is a Soldier's best friend in the searing heat of Iraq, Kuwait, or Afghanistan. It's getting hotter by the day, so stay hydrated to make it home from the fight! 

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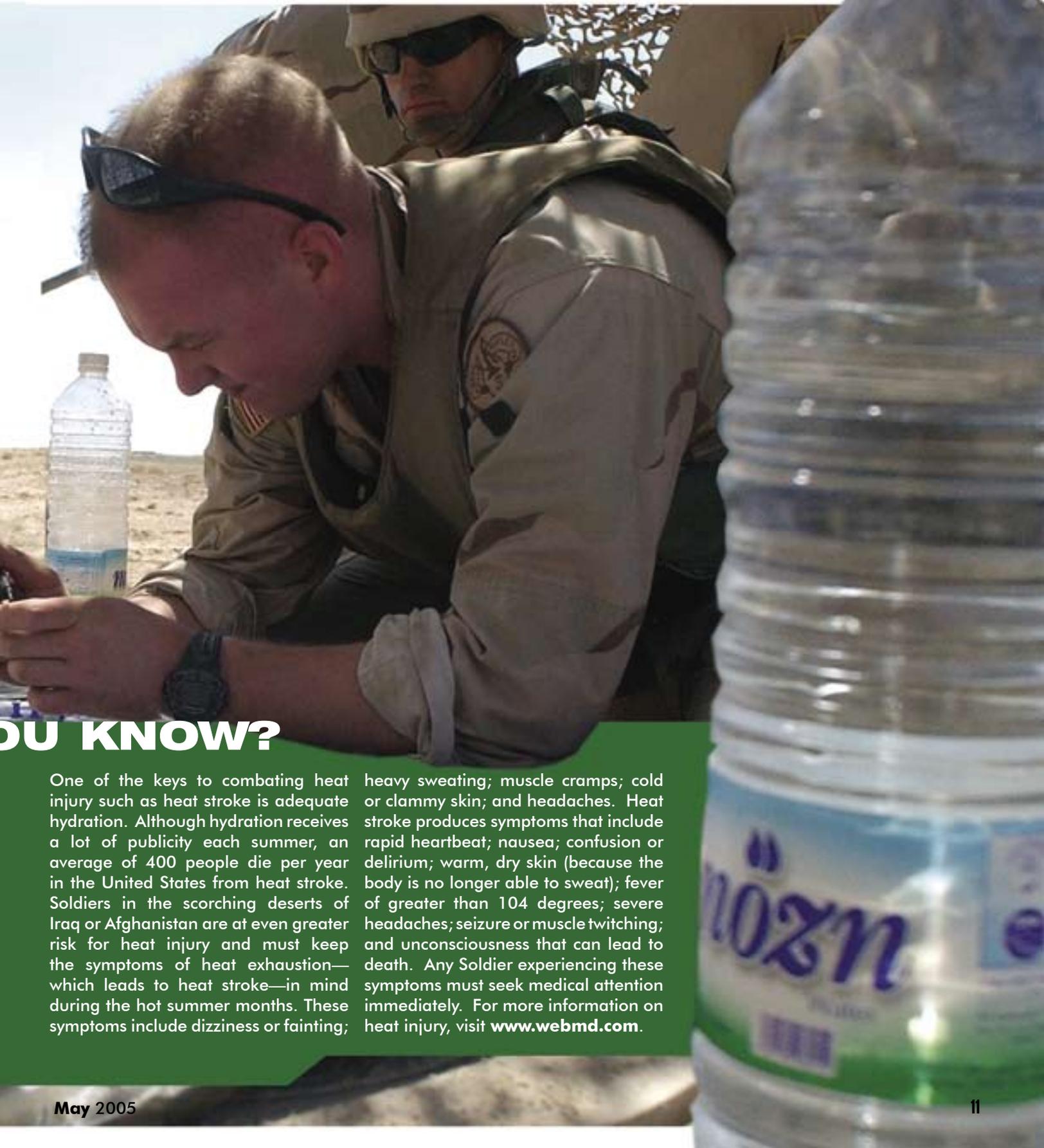


DID YOU

The Clear Facts on Water The Clear Facts on

FACTS ON WATER

JULIE SHELLEY
Editor



DO YOU KNOW?

One of the keys to combating heat injury such as heat stroke is adequate hydration. Although hydration receives a lot of publicity each summer, an average of 400 people die per year in the United States from heat stroke. Soldiers in the scorching deserts of Iraq or Afghanistan are at even greater risk for heat injury and must keep the symptoms of heat exhaustion—which leads to heat stroke—in mind during the hot summer months. These symptoms include dizziness or fainting;

heavy sweating; muscle cramps; cold or clammy skin; and headaches. Heat stroke produces symptoms that include rapid heartbeat; nausea; confusion or delirium; warm, dry skin (because the body is no longer able to sweat); fever of greater than 104 degrees; severe headaches; seizure or muscle twitching; and unconsciousness that can lead to death. Any Soldier experiencing these symptoms must seek medical attention immediately. For more information on heat injury, visit www.webmd.com.



The Middle East and its desert environment aren't new territory for the Army. Many of the Soldiers facing deployment to Iraq and Afghanistan have been there before. They remember the blistering effects of the sand, sun, and wind. However, scores of deploying Soldiers haven't endured the harsh and brutal conditions awaiting them there.

The desert environment can have a devastating impact on personnel if they're not prepared for it. Certain precautions must be taken to protect Soldiers and their equipment during a desert deployment. Factors such as acclimatization, adequate hydration, sun protection, heat injury prevention, and other concerns must be dealt with before, and especially during, deployment to a desert region. Many of these factors already have been discussed in this issue, so we'll focus on the "minor" stuff that awaits Soldiers in the desert.

Little Things to

JULIE SHELLEY

Editor

Soldiers should be prepared for radiant light from the desert sun. The sun's rays, either direct or bounced off the ground, affect the skin and can produce eye strain or temporarily impair vision. Overexposure

to sunlight will cause sunburn, and excessive sunbathing or dozing in the desert sun can be fatal! People with fair, freckled skin, a ruddy complexion, or red hair are more susceptible to sunburn than others, but everyone is susceptible to some degree.

A suntan will provide some protection against sunburn, but should be acquired gradually and in the early morning or late afternoon. "Gradual" means the skin should be exposed no longer than 5 minutes on the first day, with 5 minutes

more being added each additional day. Extreme caution should be used while working in the sun, which is as dangerous on cloudy days as sunny days. And, sunscreen is not designed to give complete protection against excessive sun exposure.

The combination of wind and dust or sand particles can cause extreme irritation to the mucous membranes, lips, and other exposed skin surfaces. Eye irritation caused by fine particles entering the eyes is a frequent complaint of vehicle crews, even when wearing goggles. Chapped lips are also common in the desert. The use of chapstick and skin and eye ointment is imperative in preventing and minimizing the effects of wind and sand.

Proper standards of personal hygiene must be maintained in the desert. Daily shaving and bathing are required if water is available; cleaning the areas of the body that sweat heavily is especially important.

If sufficient water is not on hand for bathing, Soldiers can take a sponge bath or wipe down with solution-impregnated pads, a damp rag, or a dry, clean cloth. Underwear should be changed frequently and foot powder used often.

Soldiers should be checked for signs of injury, no matter how slight, as desert dust and insects can cause infection in minor cuts and scratches. Small quantities of disinfectant in washing water can reduce the chance of infection. It is important to remember that even minor sickness in the desert can have dire consequences. Prickly heat and diarrhea can upset part of the sweating mechanism and increase water loss,

raising susceptibility to heat illnesses. The buddy system can help ensure that prompt attention is given to these problems before they incapacitate Soldiers.

Finally, the desert is full of diseases. Common scourges found in the desert include plague, typhus, malaria, dengue fever, dysentery, cholera, typhoid, and leishmaniasis, or "Baghdad Boil" (see "You're Not a Pet," page 14). Although some of these illnesses can be prevented by vaccines or other measures, proper sanitation and personal cleanliness are vital to disease prevention. Proper mess sanitation is

also essential in the desert, and Soldiers should always wash their hands and mouth before meals to prevent illnesses such as "Kuwaiti Crud."

The desert should not be feared, but preparation is key to surviving and winning a desert war. Arm yourself with the facts and stay safe! —

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Keep in Mind

DID YOU KNOW?

The sun's rays are strongest between 1000 and 1500. To prevent sunburn and its long-term effects—including premature aging and skin cancer—Soldiers should incorporate sunscreen use into their daily routine. Soldiers should apply waterproof sunscreen to all exposed areas (including the ears, lips, back of the neck, and tops of the feet) at least 30 minutes before going outside for maximum effectiveness. After the initial application, an additional coat should be reapplied every 2 hours, especially after heavy sweating or swimming.

You're Not a Pet

JULIE SHELLEY
Editor

Chances are you know someone who's done it, or you've done it yourself. Flea collars work for man's best friend, so they should keep pests off man too, right? After all, well-meaning, patriotic Americans back home are sending flea collars in care packages to troops. Apparently someone's asked for them, and there are a lot of Soldiers sporting flea collars these days in Iraq. What could be wrong with just trying one out?

There's plenty wrong with humans wearing flea collars. It doesn't take a degree in medicine to figure out that putting that flea collar on probably isn't a good idea—all you need are basic literacy skills to read the package. However, many Soldiers will try anything to seek relief from the aggravation of sand flies and other pests in Iraq that emerge when the weather gets hot.

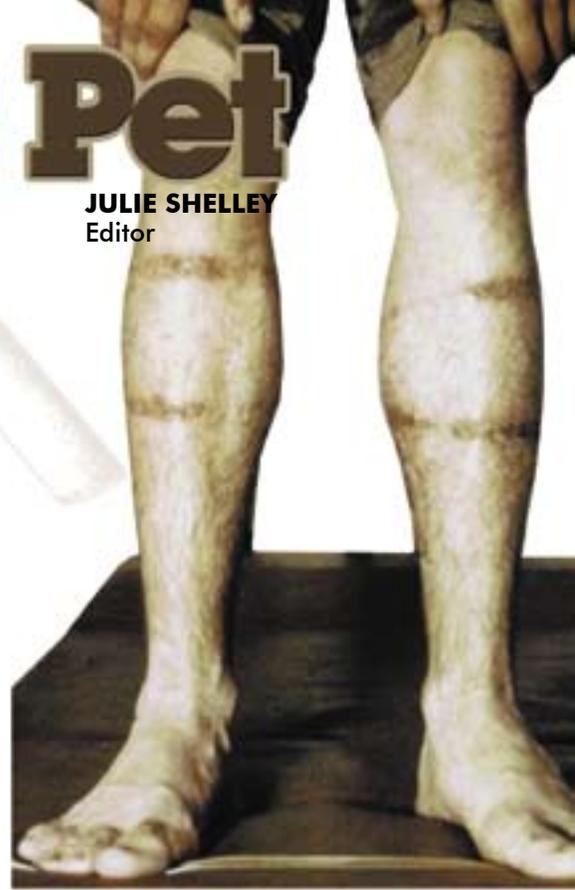
Flea and tick collars contain an assortment of pesticides including carbamates, organophosphates, and insect growth regulators. Toxic amounts of these chemicals can be absorbed into human skin and cause anything from severe skin reactions to systemic poisoning. Absorption occurs when sweat leaches out pesticides and other chemicals from the collars, often in large quantities. This is why flea

and tick collars are safe for cats and dogs—because they don't sweat. Instead, they pant to cool off.

The collars don't have to be next to the skin for absorption to occur—sweat can draw pesticides from the collars through fabrics. Therefore, you might think you've eliminated this hazard by wearing the collars outside your pants, socks, or boots, but you're still at risk for a nasty chemical burn or worse. Additionally, there's no return for your risk; currently no evidence exists that flea and tick collars are useful in repelling insects on humans. The pests will simply avoid the collar and go elsewhere on your body.

The Department of Defense has a very effective and approved insect repellent system available to all Soldiers. The DOD Insect Repellent System has two components: the regular-issue uniform treated with permethrin, and DEET insect repellent lotion. Permethrin is available in either an impregnation kit that treats one uniform and lasts the life of the uniform, or in an aerosol spray that treats one uniform and lasts five or six washes. Permethrin kills most insects upon contact with the fabric. A thin coat of DEET lotion should be applied to all exposed skin and should last up to 12 hours, depending on the climate.

For the DOD Insect Repellent



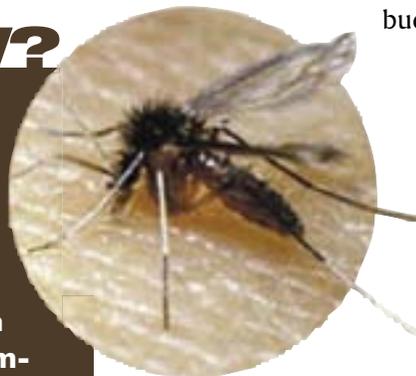
System to be effective, you must wear your uniform properly. Keep your sleeves rolled down, tuck your pants into your boots, and keep your undershirt tucked into your pants. One common misconception suggests that securing the pant legs closed with a flea collar shuts off access of biting insects to the skin. However, your uniform does the same thing—without the harmful side effects—as long as you keep your pants tucked firmly in your boots with the blousing cords drawn tight.

The Army's provided all you need to stay flea, fly, and pest-free through your deployment. You're not a pet. You're a vital part of the fight, and the Army and your buddies need you—fleas and all. 

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DID YOU KNOW?

Sand flies are silent and only one-third the size of mosquitoes. These tiny insects carry diseases such as leishmaniasis ("Baghdad Boil") and feed most often from dusk to dawn. For more information on sand flies, flea collars, and other health-related topics in theater, visit the U.S. Army Center for Health Promotion and Preventive Medicine at chppm-www.apgea.army.mil.



Everyone knows the desert is hot, but you can't imagine just how hot it really is until you get there. We left for Kandahar, Afghanistan, from Fort Campbell, KY, where a blanket of snow covered the ground. Kandahar was the total opposite, though—hot and sunny. Everyone was told to drink water and watch out for their buddy because of the heat.

One factor got overlooked, however. An airframe exposed to sunlight can get extremely hot. I found this out the hard way while assembling aircraft parts left out in the sun.

We had put together one aircraft and were starting to assemble a second. I reached for the aircraft's stabilator, which was bubble-wrapped to protect it during shipment. After I grabbed it I quickly tried to let it go, because it was scorching hot! That definitely didn't happen at Fort Campbell in the winter.

I suffered a thermal burn and lost about two layers of skin off my fingers from grasping the hot metal.

After my injury, it became standard for personnel to

use gloves whenever touching an aircraft during daylight hours—no exceptions. We quickly forget in “real world” operations things we take into consideration during planning and training, such as the greenhouse effect on vehicle and aircraft exteriors. These oversights can lead to some pretty painful lessons learned.

Remember that vehicle exteriors and tools can get extremely hot when exposed to sunlight for only a few minutes. Vehicle crewmembers and maintenance personnel must wear gloves to prevent first- and second-degree burns when touching these items. However, should you or a buddy “get burned” by a vehicle or other hot metal, follow these first-aid procedures:

- Control any bleeding using direct or indirect pressure and by elevating the affected area.
- Run cool water—not freezing water or ice—over the burned area for at least 30 minutes. Smaller burns can be kept completely submerged in cool water. Flush the burn before calling for help.

- Remove all clothing and jewelry from the burned area, because swelling can develop rapidly. However, don't remove clothing that sticks to the skin. Leave that job for the professionals.

- Cover the burn with dry, sterile dressings if they're available. Don't break blisters or apply ointments of any kind.

- Always seek medical attention, no matter how small the burn might be. You can't risk an infection in the desert.

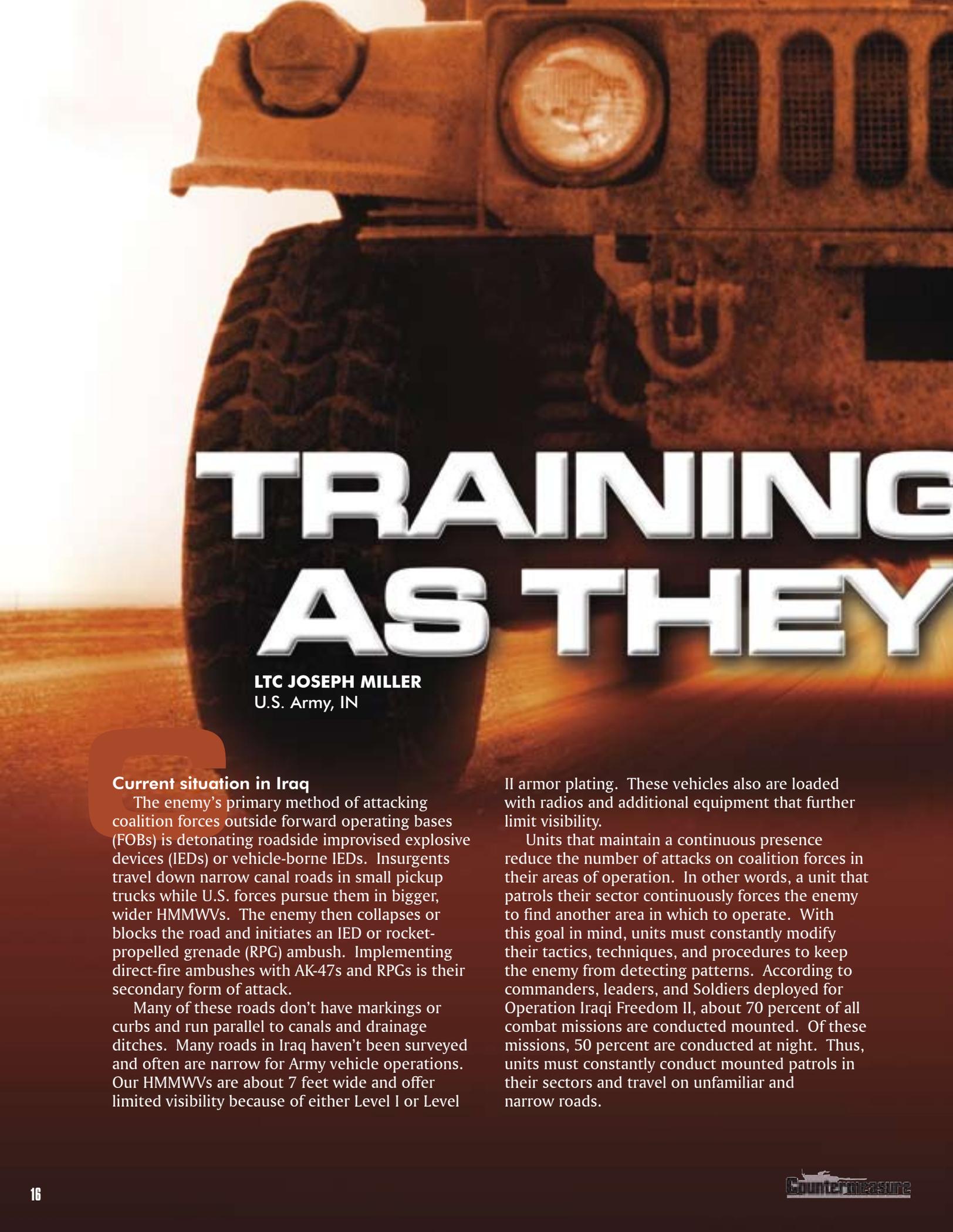
Remember, things are probably hotter than they appear. Wear your gloves and continue to be safe when you climb inside your vehicle. The heat of summer will end eventually, and we want you around for winter! 

Comments regarding this article may be directed to the editor at (334) 255-1218, DSN 558-1218, or by e-mail at julie.shelley@safetycenter.army.mil.

Ouch!



ANONYMOUS



TRAINING AS THEY

LTC JOSEPH MILLER
U.S. Army, IN

Current situation in Iraq

The enemy's primary method of attacking coalition forces outside forward operating bases (FOBs) is detonating roadside improvised explosive devices (IEDs) or vehicle-borne IEDs. Insurgents travel down narrow canal roads in small pickup trucks while U.S. forces pursue them in bigger, wider HMMWVs. The enemy then collapses or blocks the road and initiates an IED or rocket-propelled grenade (RPG) ambush. Implementing direct-fire ambushes with AK-47s and RPGs is their secondary form of attack.

Many of these roads don't have markings or curbs and run parallel to canals and drainage ditches. Many roads in Iraq haven't been surveyed and often are narrow for Army vehicle operations. Our HMMWVs are about 7 feet wide and offer limited visibility because of either Level I or Level

II armor plating. These vehicles also are loaded with radios and additional equipment that further limit visibility.

Units that maintain a continuous presence reduce the number of attacks on coalition forces in their areas of operation. In other words, a unit that patrols their sector continuously forces the enemy to find another area in which to operate. With this goal in mind, units must constantly modify their tactics, techniques, and procedures to keep the enemy from detecting patterns. According to commanders, leaders, and Soldiers deployed for Operation Iraqi Freedom II, about 70 percent of all combat missions are conducted mounted. Of these missions, 50 percent are conducted at night. Thus, units must constantly conduct mounted patrols in their sectors and travel on unfamiliar and narrow roads.



DRIVERS FIGHT

The heightened operations tempo is taking a toll on in-theater vehicle fatalities. From 12 September 2001 to 14 February 2005, the Army suffered 173 HMMWV accidents that killed 53 Soldiers. Our Strykers were involved in 20 accidents during the same period, killing five Soldiers.

Rollover trends

Leaders should incorporate several lessons learned during their pre-deployment training for mounted combat operations in theater. Drivers should be trained to operate their vehicles at faster speeds to avoid IEDs. Drivers, vehicle commanders, and gunners should be taught to function and communicate as a team. Crewmembers must be trained to scan and communicate road hazards with one another and receive instruction on driving,

backing, and turning their vehicles on narrow roads. Additionally, units deploying to Iraq should receive their M1114 HMMWVs to train with before deployment. In the past, some units have gotten their M1114s in Kuwait and driven them into Iraq without additional training.

When leaders conduct their risk assessment before combat missions, they update and brief the tactical or enemy risks extremely well but often leave out the accident or hazard-based risks. Leaders must brief locations along the routes where the roads are narrow or have steep drop-offs. Drivers also should know the effects of current weather on driving. In sum, leaders must incorporate Composite Risk Management to account for all potential hazards encountered on any given mission.

In the past, some commanders have directed

“ IN SUM, LEADERS MUST INCORPORATE COMPOSITE RISK MANAGEMENT TO ACCOUNT FOR ALL POTENTIAL RISKS ENCOUNTERED ON ANY GIVEN MISSION.”

their Soldiers not to wear their seatbelts in case they must egress the vehicle quickly. These commanders based their decision on the perceived threat of being trapped in a burning or overturned vehicle with the enemy firing on them. However, being hit with an IED or rolling over in an accident are the primary threats in Iraq. Seatbelts allow Soldiers to remain conscious and in their seats within a violently tumbling vehicle and then exit the vehicle after it stops. Commanders now know that, statistically speaking, it's better for their Soldiers to wear seatbelts.

Rollover drills must be rehearsed. Without rehearsals, there's no "muscle memory"

instilled in the Soldiers when a rollover does happen. Gunners are crushed because they haven't physically trained to drop down into the gunner's hatch. Another problem is that some rollover drills often don't include procedures for egressing the vehicle through a single door. M1114s don't have an emergency opening that allows Soldiers to evacuate the vehicle quickly if it's upside down and the doors are blocked. These factors have caused Soldiers to drown because they were trapped inside their vehicles. Other Soldiers have suffered severe shock and hypothermia while trying to rescue comrades trapped in very cold water.

Recommendations

Units currently deploying to Iraq, as well as the ones already there, must train day and night until they achieve proficiency as a team on the following tasks:

- Alerting other crewmembers and other vehicles of upcoming hazardous conditions
- Recognizing when a road is too narrow and stopping the vehicle
- Turning and backing the vehicle on a narrow road lined by canals
- Safely driving through simulated traffic at faster-than-normal speeds to imitate traveling through areas with possible IEDs
- Driving around cones





**INCORPORATE
IT INTO
HAZARDS
MISSION.**

without hitting them so crews can understand their vehicle's required clearances

- Driving the vehicle partially off the road and correctly re-entering the road without rolling over

- Correctly transitioning from blackout drive to service drive, and then back to blackout drive

- Conducting rollover drills in accordance with Graphic Training Aid 55-03-030, "HMMWV Up-armored Emergency Procedures Performance Measures," available through the Reimer Digital Library at https://atiam.train.army.mil/soldierPortal/atia/adlsc/view/restricted/20779-1/GTA/55-03-030/5503030_TOP.HTM. You must have an AKO user id and password to access this site.

- Rehearsing, at a minimum of once a month, rollover drills with the crew egressing out a single door with the combat lock engaged

- Training all the above tasks when the unit receives its M1114s or Stryker slat armor in Kuwait

Commanders and leaders must conduct a composite risk assessment before every combat operation, including follow-on missions. A composite risk assessment is a running estimate of the

situation that must be updated continuously. It combines accidental risk factors such as weather, crew selection, terrain, illumination, or traffic with the tactical risk posed by the enemy.

Additionally, commanders and leaders must ensure all Soldiers wear their seatbelts during mounted combat missions outside the FOB. Leaders should rehearse rollover drills at least once a month, to include evacuating the vehicle through a single door. The Program Executive Officer-Combat Support and Combat Service Support currently is working to modify the HMMWV family of vehicles so Soldiers can egress quickly if they're upside down in water with all four doors blocked.

Vehicle accidents have claimed far too many of our Soldiers already and continue to kill at an alarming rate. We must do everything we can to turn the arrow down and bring our Soldiers home safe. Operations in Iraq are a whole different ball game from what we're used to in the United States. Take note of your lessons learned and train your Soldiers right. 

Contact the author by e-mail at joseph.k.miller1@us.army.mil.

Probability, Perception, and Putting on Your Seatbelt

CW4 JEFFERY DANITZ
A Company, 7th/158th
Aviation Regiment
Fort Hood, TX

Would you go to Las Vegas and bet your life on a spin of the roulette wheel? I hope not! You'd probably question the intelligence of anyone willing to make such a gamble. Yet many of our Soldiers bet their lives every day when they don't use their seatbelts in tactical vehicles, especially in theater. Why is this happening?

I heard all the familiar excuses while working as a safety advisor to the Combined Joint Task Force-7 command staff in Iraq. "The seatbelt keeps me from getting out of the vehicle fast." "It restricts me from turning sideways in the seat." This one really scares me: "I was told not to use it."

Aside from commanders telling them not to use seatbelts, why would Soldiers make an independent decision not to buckle up in combat? People make decisions based on their perception of the likelihood an event will occur. Roadside bombings and ambushes are common in Iraq, so it's natural that Soldiers will do everything possible—including not wearing seatbelts—to "protect" themselves during these events.

Perception of occurrence is influenced by perception of control, and these factors play into Soldiers' decision-making processes, including seatbelt usage. When someone thinks they're in control, they perceive a low likelihood of having an accident. Many Soldiers think accidents only happen to other people; this overconfidence results from their feelings of control. However, we can't control the enemy and can't predict with any certainty when he'll

strike. Thus, just in case they're ambushed or bombed, Soldiers feel they have more control if they don't wear their seatbelts.

This skewed perception can get Soldiers in trouble. Most Soldiers believe they're more likely to die because they can't get out of a vehicle quickly during an ambush or bombing. In their minds, the risk of injury or death in a rollover or other accident is secondary. It makes sense to them, then, not to wear seatbelts in combat.

This logic is flawed. Army regulations say seatbelts must be worn at all times—even in combat—for a simple reason. Statistics show many more Soldiers are injured or killed because they aren't wearing their seatbelts than are killed by the enemy because they can't get their seatbelts off quickly. Did I mention there hasn't been a single documented case of the latter happening? In other words, ZERO Soldiers have died because they were trapped by their seatbelts during enemy activity, but many have been killed because they weren't buckled up during a vehicle accident.

An intelligent person learns from their own mistakes, but a wise individual learns from the mistakes of others. I hope you'll make sound decisions and carry out safe operating procedures every time you begin a mission. Remember, the probability of you making it home safe is MUCH greater if you wear your seatbelt. Your family, friends, and the Army will thank you for it. 

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The Road to Baghdad

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Looking back, it seems like the battle for Baghdad was the easy part. My unit, the 10th Logistics Planning Augmentation Team, prepared for months before being deployed for Operation Iraqi Freedom I. We're a 7th Army Reserve Command unit based out of Germany, and we were mobilized to support the V Corps G4. The battle was easy because we'd trained for it. The hard part, which we hadn't trained for, came later.

After Baghdad fell, V Corps moved from Balad to Baghdad to establish the

Combined Joint Task Force-7 (CJTF-7) headquarters in one of Saddam Hussein's former palace complexes. The CJTF-7's mission was to assist the Iraqi people in reconstruction efforts and also to oversee the transition of authority to an interim Iraqi government. This was a big task, but we had to get to Baghdad before we could start. This was the hard part—getting everyone to the base camp without an accident or enemy incident.

Although the road from Balad to Baghdad was only about 60 kilometers, the way was fraught with

risks. Risk management is a vital part of planning and executing operational missions, so an assessment of the situation was in order. The difference between this movement and a road march in a training environment was the introduction of real-world threats and the uncertainty of the tactical situation. We expected to encounter anything from organized ambushes to rocks thrown at us from bridges as we passed underneath.

The situation clearly called for a composite risk analysis. Composite Risk

Management (CRM) blends tactical, threat-based dangers with accidental hazard factors to provide a more complete picture of the overall risks. Once we identified all the risks, we conducted an analysis to assess the likelihood of each one occurring and their potential impact.

In addition to the standard preventive measures taken for a tactical road march, we developed emergency action drills so every Soldier could react to any situation. The NCOs ensured every driver and passenger had their

Don't Drive It Like You Stole It!

Drive it like you stole it!" Leading up to this deployment, I heard these words at least a thousand times. During training, we initially were taught convoy procedures according to Army doctrine. Guidelines for safe and tactically sound convoy operations were passed on to us as we prepared to enter Iraq, with its infamous history of roadside bombings and ambushes. But over time, as the lessons learned began to trickle back from Iraq, the above statement became our battle cry.

I've had difficulty judging this tactic's merits. It seems to make sense, or does it? The faster you drive, the less time you spend on the road (even though traffic studies in the U.S. have shown the amount of time you actually

respective instructions and rehearsed the drills. Everyone took the training seriously, especially since we weren't a combat unit making the trip in armored vehicles. Instead, we were riding in "soft-skinned" HMMWVs and open 5-ton trucks.

We trained and prepared until we mitigated the risks as much as possible. The only remaining task was to supervise and evaluate our performance while executing the movement

"save" by speeding is negligible). Logic dictates that by saving even a few seconds (and seconds count in combat) on the road, you're exposed to less danger from the human enemy. However, you're at greater risk for a catastrophic accident such as a rollover. So, does the time-saving benefit outweigh the gain of safely operating the vehicle? I'm not qualified to say, but I've seen firsthand how this attitude can create a "cowboy" mentality behind the wheel. This mentality often lingers after the mission and affects the way vehicles are operated within the boundaries of our forward operating bases (FOBs).

I witnessed a vehicle accident my first day in Iraq. A Soldier didn't use a ground guide and backed into a parked HMMWV. Just recently I

plan. Everyone was apprehensive and the tension was high a few times along the way, but we made it to Baghdad without incident. It wasn't luck—I believe our success was influenced by leaders who cared enough to do the right thing and practice CRM. Our Soldiers will never forget that trip, and they're all here to remember it. That's true victory. 

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Balad, Iraq

was walking to the mess hall across a gravel field when a HMMWV came speeding into my path. I had to jump out of the way to avoid being hit. Apparently the driver had decided to take a shortcut across the gravel field instead of using the road. He'd still have been speeding even if he'd been on the road, and as he passed I saw that he and the assistant driver were engaged in some sort of horseplay. They never realized I was there until I yelled for them to slow down.

This place is dangerous enough without doing senseless things behind the wheel of a vehicle. It's little wonder motor vehicle accidents—both here and at home—are the number one cause of Soldier deaths outside combat. There's no excuse for not following the rules simply because you're in combat—safety should never be compromised! Instead, adopting safety and implementing Composite Risk Management is the means to sustain combat power and preserve our readiness. I don't mean to scold or preach, but the bottom line is simple: Most accidents are preventable. Keep the following rules in mind when you're behind the wheel:

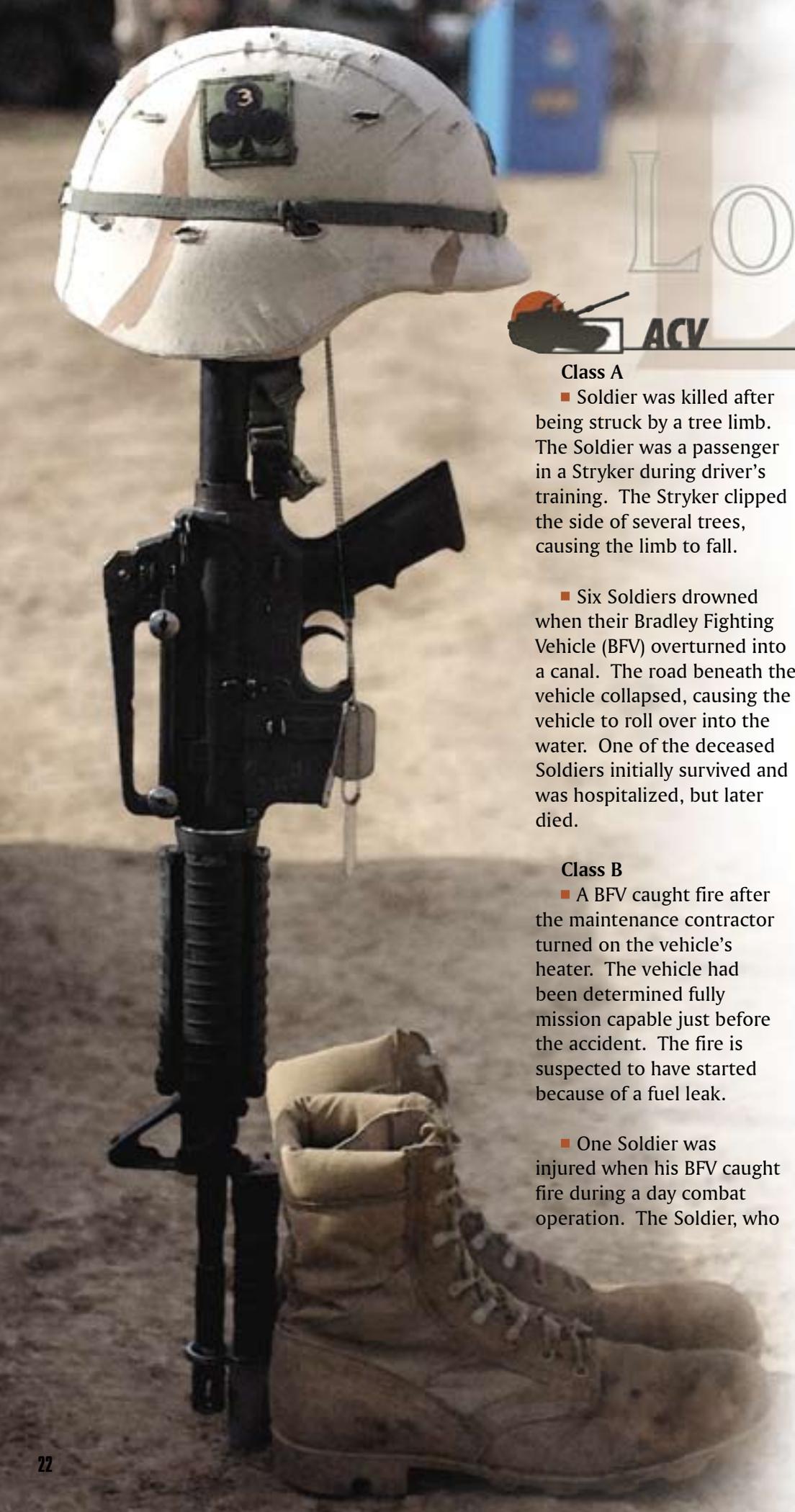
- Wear your seatbelt
- Wear your helmet



- Obey speed limits, or use common sense in their absence
- Practice rollover drills
- Use ground guides when backing or operating a vehicle in confined areas
- Use nametag defilade in turrets

The chances of you getting pulled over by an angry state trooper here are nonexistent. In their place are commanders, sergeants major, and first sergeants who must make vehicle safety a top priority. Keep the roads inside our FOBs safe, and plan for all hazards on the outside roads—those posed by the enemy, the environment, and you. The life you save could be your own! 

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Lost



ACV

Class A

- Soldier was killed after being struck by a tree limb. The Soldier was a passenger in a Stryker during driver's training. The Stryker clipped the side of several trees, causing the limb to fall.

- Six Soldiers drowned when their Bradley Fighting Vehicle (BFV) overturned into a canal. The road beneath the vehicle collapsed, causing the vehicle to roll over into the water. One of the deceased Soldiers initially survived and was hospitalized, but later died.

Class B

- A BFV caught fire after the maintenance contractor turned on the vehicle's heater. The vehicle had been determined fully mission capable just before the accident. The fire is suspected to have started because of a fuel leak.

- One Soldier was injured when his BFV caught fire during a day combat operation. The Soldier, who

was driving the vehicle, was treated for smoke inhalation. The source of the fire was not reported.

- Three M1A2 tanks suffered Class B damage when one of the tanks collided with the other two. Two of the tanks had stopped to allow the third tank to pass. The third tank slid on the road's surface and struck the two stopped tanks.



AMV

Class A

- One Soldier and one Department of Defense contractor were killed when their HMMWV was broadsided by a Stryker. No other details were reported.

- Two Soldiers drowned when their up-armored HMMWV overturned into a canal. The crew was part of a night multi-vehicle patrol mission at the time of the accident.

Soldier suffered a fatal gunshot wound to his head when a .50 cal machine gun discharged in the motor pool. The Soldier had driven his M1A1 tank into the motor pool after a combat mission, and the tank's crew was securing the gun when it discharged.

- Soldier died after a HMMWV struck him during a battalion-level tactical road march. No other details were reported.

- Two Soldiers were injured and one civilian was killed when the Soldiers lost control of their M915 while going to refuel. The M915 slid into another lane and collided with three civilian vehicles, causing the civilian fatality and an additional civilian injury.



Personnel Injury

Class A

- Soldier died after complaining of chest pains during a physical training (PT) test. The Soldier was transferred to a local hospital, where he went into cardiac arrest and died.

- Soldier collapsed and died during a PT run. No other details were reported.

- Soldier was killed after she hit the ground during an Airborne operation. The Soldier's primary chute apparently failed, and her reserve chute was not deployed.

- Two foreign national troops suffered fatal gunshot wounds when a Soldier opened fire on them. The two troops were moving suspiciously around a bunker

and were unidentified at the time of the shooting. One other foreign national troop was wounded.

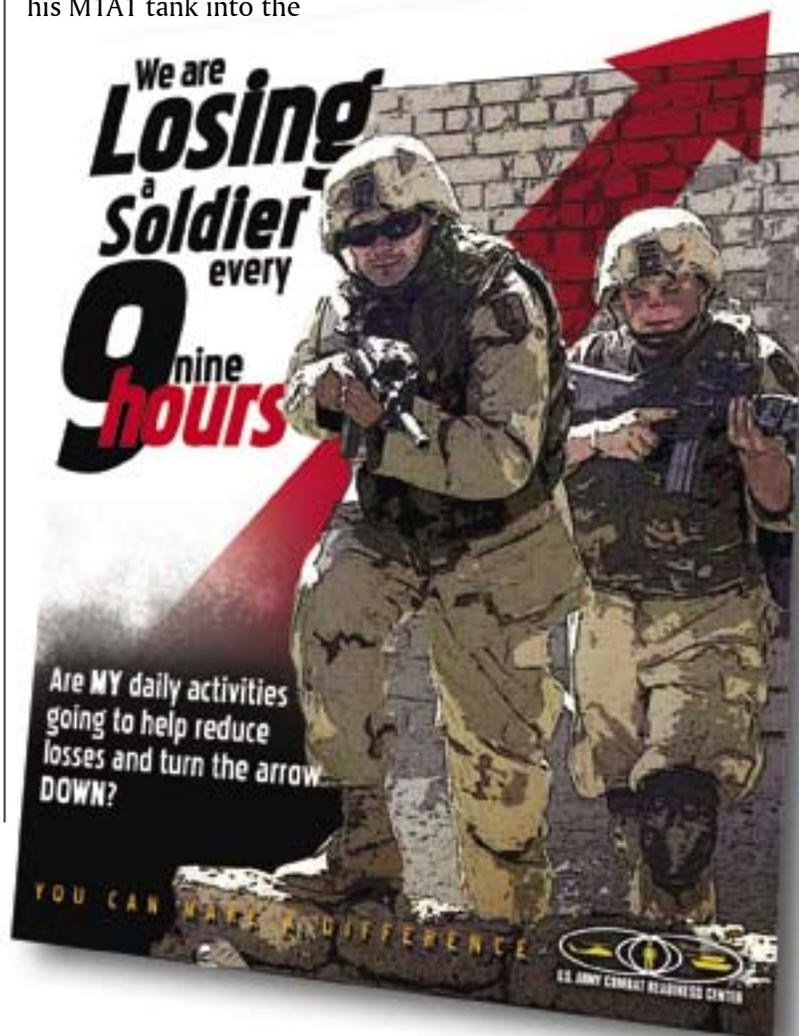
- Soldier suffered a fatal gunshot wound during a joint patrol with foreign national troops. One of the foreign troops' AK-47s accidentally discharged, striking the Soldier.

- Soldier suffered a fatal gunshot wound to his head when a .50 cal machine gun discharged in the motor pool. The Soldier had driven his M1A1 tank into the

motor pool after a combat mission, and the tank's crew was securing the gun when it discharged.

Class C

- Soldier suffered a concussion and short-term memory loss after his rucksack struck him in the back of the head. The Soldier had completed an Airborne operation and was running to the assembly area when he tripped in a depression and fell, causing the rucksack to hit his head.



115°F in the shade

Let's say that it's 100 °F outside (and it gets much hotter in Iraq). The human body wants to stay at 98.6 °F. The only way to stay at 98.6 is to sweat. By putting moisture on the skin and letting it evaporate, your body can cool itself very effectively and keep its temperature in the proper range.

Sweat works really well as long as there's plenty of water in your body—it takes water to manufacture sweat. If you run out of water, sweat stops and your body rapidly overheats. And, it's extremely easy to run out of water: Your body can produce 0.5 gallons (2 liters) of sweat every hour in a hot environment. Unless you are drinking water at the same rate, you'll dehydrate and then stop sweating. Your internal thirst meter often is not sensitive enough when you need that much water (and it's been said that by the time you feel thirsty, you're already dehydrated). You must keep drinking, no matter how thirsty you feel!

Don't Forget the H₂O!



U.S. ARMY COMBAT READINESS CENTER



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Countermeasure

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JUNE 2005

Keepin'
on
Track

Countermeasures

CONTENTS

- 3 Attention! Heaters Need Year-round Maintenance!**
- 6 The Basics of Bradleys**
- 8 Great Blazin' Tanks!**
- 10 Mission Time, Not Training Time**
- 12 Is That What You're Wearing?**
- 14 Warrior Stories
But I Was Tired!
Short Three Soldiers**
- 15 "Letters From War: Medical"
DVD Now Available**
- 16 Investigator's Forum
Too Little Training,
Too Much Speed**
- 18 Saving Soldiers—
One Breath at a Time**
- 18 An Almost Rolling Disaster**
- 20 Big Brother vs. Band of Brothers**
- 22 Accident Briefs**
- 24 SFC Paul Ray Smith**

features



6



12



18



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ATTENTION!

HEATERS NEED YEAR-ROUND MAINTENANCE

For many professions, the word “hazard” brings to mind visions of toxic chemicals, heavy moving machinery, explosives, or other commonplace dangers. However, there’s one hazard we’re all exposed to frequently and don’t even realize it—complacency.

Complacency is defined as “a feeling of security, often while unaware of some potential danger or defect.” This definition can be applied to an

individual performing a routine action while overlooking a change in conditions that could affect the outcome. The only way to overcome complacency is through thorough attention to detail and careful examination of all tasks being performed. Easier said than done, right?

How often do you check your car’s air conditioning in January, or the heater in July or August? Probably not very often. The Army has some of the most sophisticated and efficient equipment in the world, yet we run into the same problem. Our

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System Safety Officer
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equipment is only as safe as its operators, and performing preventive maintenance checks and services (PMCS) on all components is vital, no matter the season. A rash of recent Bradley Fighting Vehicle (BFV) and M1 tank fires attributed to fuel leaks illustrates this point.

PMCS are specified in all vehicle technical manuals to ensure the user keeps the equipment fully operational,

safe, and mission capable. Our business is to keep Soldiers alive, intact, trained, and ready to fight. It's just as important to ensure our equipment is always ready to support the mission at hand.

Required heater checks in Army vehicles often are overlooked during the summer months. The heaters haven't been used since the same checks were performed the last time, so why check them now? Although we don't commonly use heaters in the summer, there are still some inherent risks associated with the overall system that must be addressed. Regardless of the season, the inspection procedures must be completed as directed in the technical manuals.

All PMCS procedures require the heater system fuel lines, hoses, tubes, and fittings be checked for fuel leaks. The procedures specify that "any fuel leak" is a non-mission capable deficiency. All fuel leaks—regardless of category—must be reported immediately to the maintenance facility or element responsible for

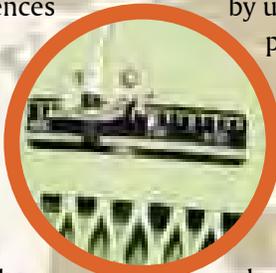
supporting your unit or vehicles. Smaller leaks can evolve into more severe leaks and, if undetected, the fuel will pool in the vehicle's bilge.

Any amount of fuel in the vehicle's hull is a fire waiting to happen. This fuel can be disguised as fuel-soaked dirt or dust, both of which act as a flammable solid. The "mil" relation references currently listed in BFV technical manuals are transposed and will be corrected in the next manual revision. The correct turret position to perform PMCS checks on the heater is 5200 mils. The correct turret position to inspect all fuel tank fittings and lines is 4100 mils.

The recent increase in BFV fires has resulted in detailed procedural reviews and component analysis. Current procedures are under review to put more emphasis on heater systems. The review also places more focus on a detailed annual inspection to be performed before the anticipated cold season and after long-term vehicle storage. The procedures incorporate a heater inspection by unit-level maintenance

personnel with the heater turned off (static inspection). This inspection includes the following checks:

1. Prepare the location to allow total visual and physical access to the heater.



2. Inspect the heater body and occupied space (including hoses and fittings) for any indications of prior or current leaks. Prior leaks can be identified by dried fuel stains.

3. Remove the top cover (commonly referred to as the “doghouse”).

4. Check all rubber hoses for leaks, dry rot, cracking, or hardening.

5. Check all fuel system junctions and connections for indications of leaks.

6. If no indications of fuel leaks or system deficiencies are found, continue to operational check 7. If leaks are detected, refer to check 13.

7. While observing the heater, have a helper turn it on.

8. Observe the heater and look for active leaks using the same procedures as the static inspection, outlined in checks 1 through 5.

9. Look for smoke around the heater and in the heated air stream.

10. Smell for an abnormally strong fuel presence in the heater area.

11. Let the heater run for 20 minutes and observe.

12. Turn the heater off.

13. If any fuel leaks or equipment deficiencies are found during this inspection, remove the heater and turn it in to direct support for service.

(Note: As the

Army transitions

from older to newer-style electronically controlled heaters, these photos may not reflect the same visual relation found in each vehicle. These photos reflect the newer style. The inspection procedures apply to all style heaters.)

Crewmembers must always be aware of the warning signs of potential fire—abnormal smells, smoke, flames, or fuel leaks—while operating their vehicles. If any area of your vehicle has

questionable shortcomings, report them to maintenance to be on the safe side. Always be sure someone is occupying the vehicle when the system is running. Don't allow your heater compartment to erupt into an uncontrollable fire that could've been prevented with an inspection.

Even if all procedures are followed to the letter, the potential for fire still exists. Crewmembers must physically rehearse fire and evacuation drills on a regular basis in accordance with the operator's manuals and applicable field manuals. As duty positions change, so do individual responsibilities during fire and evacuation. Institute these drills in your routine training activities and practice them until they become second nature. 

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The Basics of Brac

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How ready is your crew for a fire in your Bradley Fighting Vehicle (BFV)? What actions must the driver take? What about the Bradley commander (BC)? What about the guys in the back?

You say, “C’mon, that’s all common sense stuff—we did all that fire evacuation training years ago.” Unfortunately, common sense isn’t so common—but Bradley fires are. If you don’t rehearse basic fire evacuation drills, you’re leaving the safety of your Soldiers’ lives and equipment to chance. Let’s take a few minutes to review some of the basics.

First, let’s discuss

how the Bradley’s fire suppression system works. The BFV has two separate fire suppression systems—one for the squad compartment and one for the engine compartment. Each system has separate fire bottles. The squad compartment bottles are located next to the turret. The fire bottle for the engine compartment is found underneath the instrument panel. It’s important to remember the two systems are totally independent of one another—the activation of one system won’t automatically trigger the other.

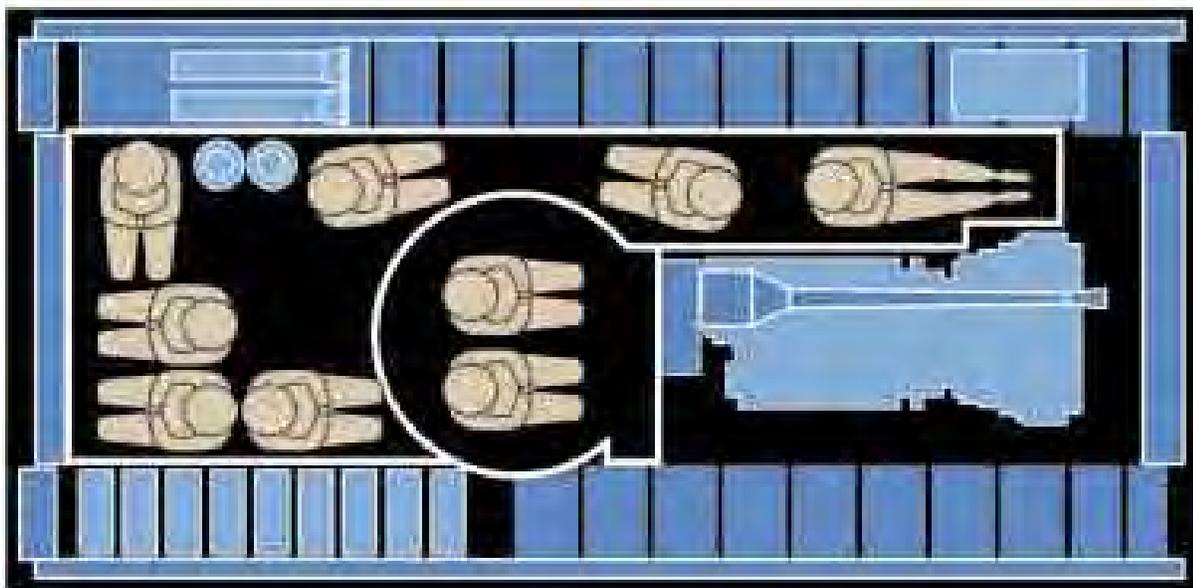
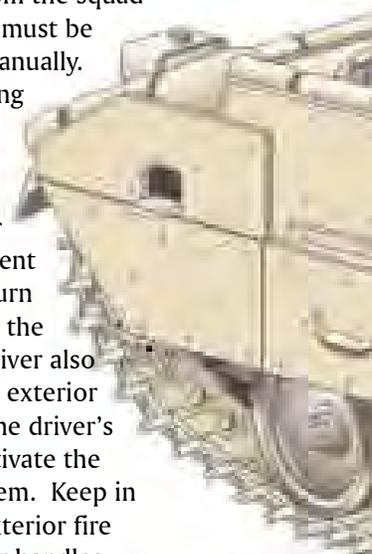
The squad system (the one in the back) will work in either the automatic mode or

manually, depending on how the switch is set. In the automatic mode, the system activates and discharges Halon fire suppression agent once the vehicle sensors detect a fire. The Halon comes from the two rear fire bottles in the squad compartment. Pulling the fire extinguisher handle in the squad compartment’s right rear (by the ramp) or the exterior handle at the Bradley’s right rear manually activates the system.

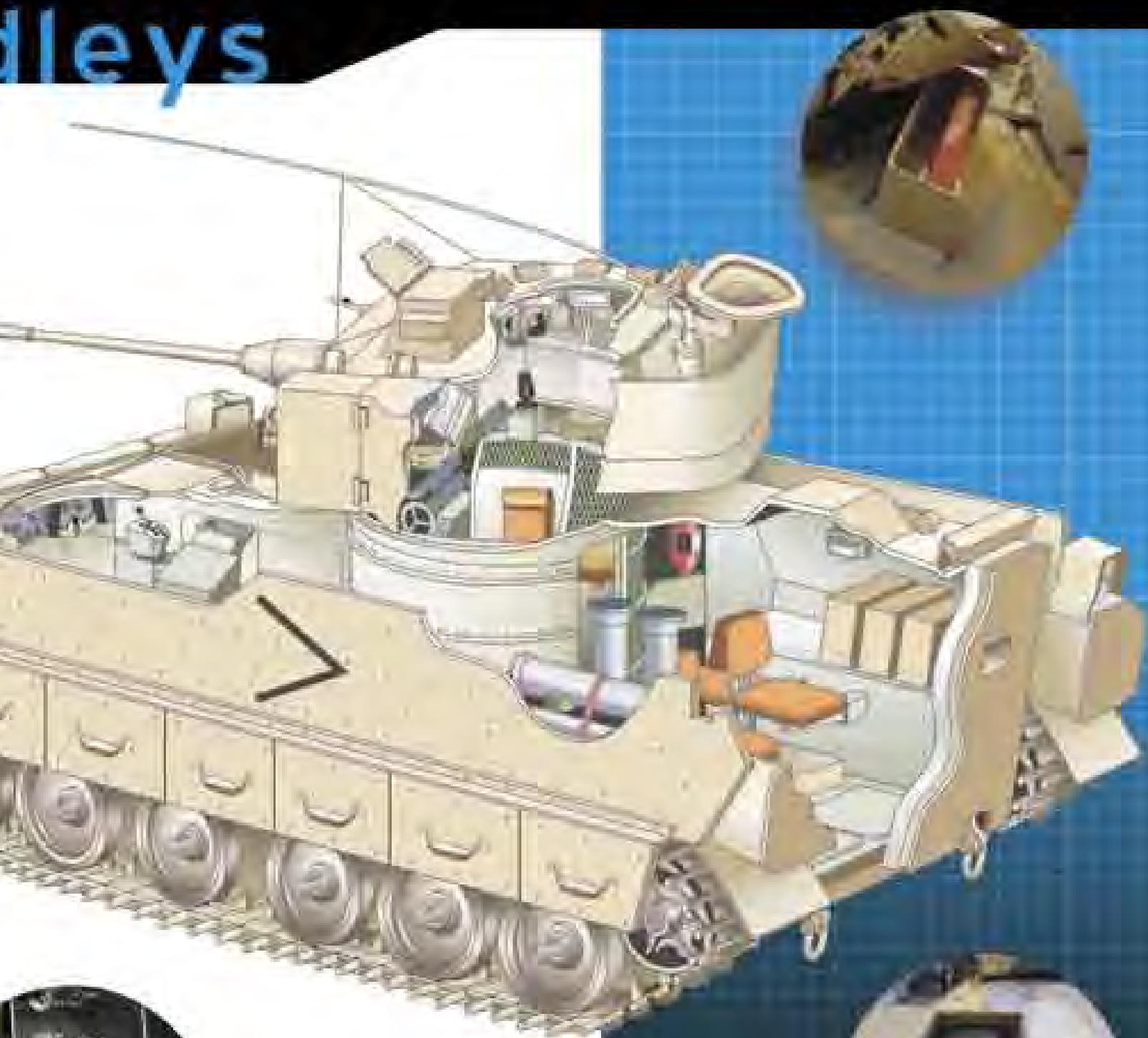
There’s a common myth that Halon will suck the oxygen from the lungs of unknowing Soldiers. Don’t panic! Those horror stories are simply untrue and Army “urban legend.” The threat of getting burned, however, is very real. The good news is there’s plenty

of time to get out if a fire does occur. A good load plan and rehearsals of Crew Drill 3 in Field Manual (FM) 3-21.71 (7-7J) are important aspects of the evacuation process. And, this drill can be used or modified for any of the turreted Bradley variants.

The engine fire suppression system is separate from the squad system and must be activated manually. After shutting down the engine, the driver must reach under the instrument panel and turn the knob to the left. The driver also can pull the exterior handle by the driver’s hatch to activate the engine system. Keep in mind the exterior fire extinguisher handles



dleys



operate only ONE system. The right-rear handle is for the crew compartment; the left-front handle is for the engine compartment.

When was the last time you checked the fire suppression system? How about that fire bottle under the instrument panel? True, it's a pain to check. However, without good preventive maintenance checks and services (PMCS), how do you know it'll work if you need it? Be sure to check the cables that run from the outside handles to the bottle valves. These cables deteriorate, lose support, and develop kinks over time. If the cables look bad, write them up and have the mechanics check them out.

Surviving a Bradley fire is a good thing, but preventing them is the ultimate key to a long and happy Army career and life. PMCS and attention to detail are vital to keeping BFVs safe and serviceable. Ground Precautionary Message (GPM) 02-001 addresses a problem with cracked fuel fittings on the engine. This GPM directs mechanics to replace the brass fittings with steel fittings the next time they pull the pack. Do yourself a favor and ensure the fuel fittings on your Bradley have been replaced.

There's been a recurring problem over the years with the driver's night viewer power cable getting pinched in the driver's hatch. The cable then can short out and cause a fire in the vehicle. Engineers developed a new cable and routing to fix this problem, described in issue number 31 of "Bradley Bits."

"Bradley Bits" can be found on the Army Knowledge Online Web site at www.us.army.mil/suite/doc/1518966.

Finally, keep the hull clean. If possible, pull the pack in a place where you can wash out the hull (easier said than done—but a rag will help!). A large pool of petroleum, oil, or lubricants in the bottom of the hull can quickly become a fire hazard.

Don't let your BFV become a fire statistic in the Combat Readiness Center database. Follow your -10 PMCS and take a minute to educate yourself on the fire suppression system. If you're trained and know what to do, you won't have to be afraid. You can save your life and preserve a critical piece of equipment. 

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DID YOU KNOW?

BFVs in Iraq are racking up a normal year's mileage in a single month, in addition to carrying heavy loads such as reactive armor. Bradley transmissions are taking the brunt of this punishment and need special care. Your BFV transmission failing in the middle of an enemy engagement isn't the most ideal of scenarios, so take the following precautions to ensure your crew makes it back to the FOB:

- Take Army Oil and Analysis Program samples every 60 days and follow the lab's guidance. The lab in theater is at Camp Anaconda, Balad.

Call them at DSN (312) 992-3986 (prompt 1-7828) or e-mail aoapiraq@mmc.army.mil.

- If the mission doesn't allow for oil analysis, then change the transmission fluid and filter every 750 miles (rather than the normal 1,500 miles) in accordance with Field Manual 90-3, *Desert Operations*.

- Not sure what's wrong with a transmission? Your Tank-Automotive and Armaments Command (TACOM) Logistics Assistance Representative (LAR), UDLP, or GD Field Service representatives can help with troubleshooting.

- Protect unserviceable transmissions from further sand or rain damage by covering all openings. Also use the reusable shipping container, if available.

- Turn in unserviceable transmissions for repair. Again, your TACOM LAR can help.

—Reprinted courtesy
May 2005 *PS* magazine

Great Bits

SFC (RET) BENNIE CAGLE

Shut it down!

M1 tank fires continue to plague armor crews both in theater and at home. The most recent Class A tank fire occurred in Iraq when an M1A1 experienced mechanical problems during a combat mission. The crew smelled diesel fuel and aborted the tank engine, but the right side of the tank began to smoke heavily. The crew pulled the manual engine fire suppression T-handles and conducted evacuation drills. All crewmembers egressed without injury; however, the tank was destroyed.

Tank fires are extremely tense situations that call for a clear head and decisive action. In most any tank-related incident, the first three things that must be addressed are evacuation of the tank, extinguishing any fire, and shutting down the engine. In many cases, aborting the engine is a crucial part of extinguishing the fire.





Mazin' Tanks!

M1 engines produce a lot of power and heat. They also are loaded with electrical components, fuel, and oil, none of which are conducive to a stable atmosphere in an accident scenario. So, just how do you shut down the engine on an M1 tank?

According to the operator's manual for the various M1 configurations, there are only four ways to shut the engine down. Two of these shutdown mechanisms are located in the driver's compartment: the ENGINE SHUTDOWN switch on the driver's instrument display (DID), which is the usual way

to shut the engine down; and the ENGINE 2ND SHOT switch on the DID, which will shut the engine down and then, 18 seconds later, discharge the second engine fire bottle.

The third mechanism is the emergency fuel shutoff located in the turret wall. This shutoff is a yellow T-handle that must be pulled out and held until the engine shuts down. After the engine shuts down, the handle must be pushed back in

completely.

The fourth and quickest way to shut down the engine is with the fuel quick disconnect (QD). The turret must be over the side to reach the fuel QD. The procedure is to open the battery box covers and then open the top-deck right grille door. Inside are various cable connectors and a red QD. This red QD is the fuel line. The coupling must be pulled back and turned counter-clockwise to disconnect and stop fuel flow to the engine. The engine will shut down when this procedure is performed.

Using whichever of the four methods above you choose, always SHUT IT DOWN if an accident occurs.

The T-handle

M1 crewmembers should know what the T-handle is—that bright-red fire extinguisher handle on the outside left of the tank. There are a lot of myths about this handle. Some Soldiers believe it will shut down the engine. Some Soldiers think that after you initiate the 2ND SHOT switch on the DID, the 2ND SHOT bottle should go off immediately. If the 2ND SHOT bottle doesn't go off by the time the crew gets on the ground—so the legend

goes—then they should pull the handle.

Both these assumptions are WRONG! Pulling the T-handle only accomplishes discharging the 2ND SHOT Halon fire extinguisher bottle—nothing more. Pulling the T-handle will not shut down the engine. If the fire extinguisher bottle discharges while the engine is running, the Halon will be sucked up by the transmission oil cooler fans and ejected out the tank's rear.

Moving the FIRE EXTINGUISHER 2ND SHOT switch to the forward position will shut down the engine. The 2ND SHOT bottle will discharge approximately 18 seconds after the switch is moved forward. This time delay is designed to give the engine time to shut down and reduce airflow, thereby allowing the Halon to remain in the engine compartment. If the engine is already shut down and the switch is moved to the forward position, the bottle will discharge immediately.

Should the crew pull the T-handle if they

evacuate the tank after moving the switch to the forward position? If the engine is still winding down the crew should let the bottle discharge electronically, as the system was designed. They should pull the T-handle if the bottle doesn't discharge after the engine shuts down completely.

M1 tanks can and do burn. The Halon system will extinguish most fires if it's used properly. Understanding the tank and its fire suppression system will give crews and vehicles a fighting chance if a fire breaks out.

Editor's note: This article was authored by SFC (RET) Cagle when he was the armor liaison NCO at the Combat Readiness Center. It was first published in the October 2002 Countermeasure and updated for publication in this issue. 🚗

Comments regarding this article may be directed to the editor at (334) 255-1218, DSN 558-1218, or by e-mail at julie.shelley@safetycenter.army.mil.

Mission Time, Not Training Time

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Mission time isn't training time. Even during the "simplest" of missions, situations can and do happen that require quick thinking and reaction. A sudden enemy ambush or improvised explosive device attack isn't the time to be training on what to do. The M1A2 accident in Baghdad below occurred in Baghdad during one such "easy" mission.



The mission was an administrative move of a tank section to a HETT pick-up point about 26 kilometers away. The warning order was issued the day before the move. On the day of the mission, the tank commander (TC) and section sergeant of one of the vehicles involved, C24, briefed the TC of C21, the accident vehicle. C24's TC wanted C21's gunner to drive the tank because the regular driver wasn't available.

The company commander gave the order to move over the radio and gave a start time of 0945, with link-up at 1030. About 1000, C21's TC told the new loader he was going to drive the tank. The TC thought the mission would provide a good opportunity to begin the loader's driver's training, since he was scheduled to move into a driver's slot anyway. However, the TC didn't consult the section sergeant before he made the decision to let the new loader drive.

The section departed about 1015. The majority of the route was on a hardball road. C21 was the lead tank when the movement began. The section sergeant thought C21 was moving too slow, so his tank passed C21 and took another route to the hardball road. When he saw C21 had made it to the road, the section sergeant directed his driver to continue.

The section sergeant started the section moving again and decided to keep a closer eye on the rear. C21 was lagging again, but then began maintaining a 300- to 500-meter interval. The section sergeant thought C21's TC was simply keeping a longer-than-normal "dust" interval. He quickly lost sight of C21 due to the interval and a curve in the road.

The section sergeant tried to contact C21's TC on the radio, but



“He should’ve told his chain of command he wanted the loader to drive so a proper risk assessment could be performed before the mission began.”

he didn't receive a reply. As he looked back down the trail, the section sergeant saw a cloud of black smoke rising up. Thinking C21 had encountered an ambush, he had his driver turn around and “step on it.” The section sergeant then heard a call over the net that a tank had overturned.

Fortunately, the only injuries stemming from C21's rollover was a broken nose and lacerated knee. However, a fire started in the exhaust section of the tank's engine compartment. This part of the M1 doesn't have fire sensors or vehicle extinguisher outlets, so the fire couldn't be suppressed by conventional means. The driver executed published fire procedures and personnel emptied 20 dry chemical fire extinguishers, but it took packing mud into the exhaust outlet to put out the fire. The tank suffered Class B damage.

Why did this accident happen? There are several reasons. First, C21's TC directed an unlicensed, inexperienced Soldier to drive the tank. The Soldier had driven an M1 for only a brief time in advanced individual training; he had 18 to 20 hours of simulation time. C21's TC also made a risk decision beyond his level of leadership. He should've told his chain of command he wanted the

loader to drive so a proper risk assessment could be performed before the mission began. Finally, the command didn't provide adequate time for the movement. There was only 45 minutes between the word to move and the link-up time, and the section started movement 30 minutes late. These factors caused the section leader to push the drivers beyond safe limits.

We understand the time restraints during certain missions, but there are risk decisions that must be made to keep all personnel safe for the next fight. Sustainment training must occur often enough to train new Soldiers and minimize skill decay. Army units train and successfully accomplish their missions through frequent sustainment training on critical tasks (see Field Manual 25-100, paragraph 2-22). In a combat zone, leaders must assess the mission's risks and hazards before training their Soldiers during the mission. Missions are not the time for training! 🚫

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is that what you're wearing?

One of the standards Bradley Fighting Vehicle and tank crews deviate from most is proper wear of the uniform and personal protective equipment. Burns from a vehicle fire are no fun! For instance, mixing Nomex and the combat vehicle crewman (CVC) uniform with issue-type polypropylene underwear can give a whole new meaning to the words “rump roast.”

Nomex can withstand temperatures up to 700 degrees F.

Polypro, on the other hand, melts at less than half that heat. During a fire, Nomex can transfer enough heat to your polypro underwear to melt it to your skin! That type of injury definitely isn't comfortable.

So, if you can't wear polypro, what can you do? During winter, a combat vehicle is just like a refrigerator—and in the summer, just like an oven! Your only choice is to wear aramid or 100-percent cotton underwear. Below is a table of national stock numbers (NSNs) for both types. Tell your supply folks to use an advice code

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U.S. Army Combat Readiness Center
and
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of 2b, which will ensure you don't get a substitute made of synthetic materials.

A second issue is the gloves available for wear with the Nomex CVC uniform. Gloves procured through a commercial vendor or at the PX may not meet flame or fire-resistant test criteria and therefore aren't suitable for wear with the Nomex uniform. Several years ago, the Army adopted the Glove, Flyers, Summer and the Glove, Flyers, Intermediate, Cold Weather as replacements for the older CVC glove. The list below provides the NSNs for the proper gloves to wear with your Nomex uniform in hot or cold climates.

Two balaclavas/hoods are authorized for crewmen to wear with the Nomex uniform, depending on the temperature. The Hood, Antiflash (NSN 8415-01-268-3473) is made from a light material and suitable for wear in hot weather. The Hood, CVC (NSN 8415-01-111-1159) is designed for wear in colder climates.

There have been numerous reports from Iraq and Afghanistan that armor crews are wearing the aviation battle dress uniform (ABDU) instead of the CVC one-piece Nomex coverall. The ABDU doesn't have a built-in integral extraction strap, as does the one-piece Nomex uniform. The extraction strap allows other crewmen or emergency personnel to pull an unconscious or injured crewman up and out of the vehicle in emergency situations.

Finally, keep the CVC uniform clean. Oil, grease, or household starch will cause Nomex fabric to burn. Cleaning the CVC uniform to remove these contaminants will restore its fire-retardant properties.

Don't survive a vehicle fire only to find yourself with polypro

melted to your skin or third-degree burns to your hands. Worn properly, the CVC uniform and gloves will help protect you from burns should a fire happen in your combat vehicle. 

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Gloves, Flyers, Summer

- 8415-01-482-8417 Size 4
- 8415-01-040-2012 Size 5
- 8415-01-040-1453 Size 6
- 8415-01-029-0109 Size 7
- 8415-01-029-0111 Size 8
- 8415-01-029-0112 Size 9
- 8415-01-029-0113 Size 10
- 8415-01-029-0116 Size 11
- 8415-01-482-8420 Size 12

Gloves, Flyers, Intermediate, Cold Weather

- 8415-01-446-9247 Size 5
- 8415-01-446-9248 Size 6
- 8415-01-446-9252 Size 7
- 8415-01-446-9253 Size 8
- 8415-01-446-9254 Size 9
- 8415-01-446-9256 Size 10
- 8415-01-446-9259 Size 11

Drawers, 100-percent Cotton, Cold Weather

- 8415-01-051-1175 X-small
- 8415-00-782-3226 Small
- 8415-00-782-3227 Medium
- 8415-00-782-3228 Large
- 8415-00-782-3229 X-large

Undershirt, 100-percent Cotton, Cold Weather

- 8415-01-051-1174 X-small
- 8415-00-270-2012 Small
- 8415-00-270-2013 Medium
- 8415-00-270-2014 Large
- 8415-00-270-2015 X-large

Undershirt, Flyers, Man, Aramid

- 8415-01-043-8375 X-small
- 8415-00-485-6547 Small
- 8415-00-485-6548 Medium
- 8415-00-485-6680 Large
- 8415-00-485-6681 X-large

Drawers, Flyers, Aramid

- 8415-01-043-4036 X-small
- 8415-00-467-4075 Small
- 8415-00-467-4076 Medium
- 8415-00-467-4078 Large
- 8415-00-467-4100 X-large

Drawers, Brief, Cotton, Brown

- 8420-01-112-1957 Size 28
- 8420-01-112-1958 Size 30
- 8420-01-112-1959 Size 32
- 8420-01-112-1960 Size 34
- 8420-01-112-1961 Size 36
- 8420-01-112-1962 Size 38
- 8420-01-112-1963 Size 40
- 8420-01-112-1964 Size 42
- 8420-01-112-1965 Size 44

Undershirt, Man, Cotton, Brown

- 8420-01-112-1472 XX-small
- 8420-01-112-1473 X-small
- 8420-01-112-1474 Small
- 8420-01-112-1475 Medium
- 8420-01-112-1476 Large
- 8420-01-112-1477 X-large
- 8420-01-112-1478 XX-large
- 8420-01-112-1479 XXX-large

But I Was Tired!

DENNIS MOTOWYLAK

Safety Intern
XVIII Airborne Corps
Fort Bragg, NC

It was 0100, and we were in the middle of a 2-week field training exercise. We'd just settled down to sleep from running tank lanes on the drop zone—a job we'd been doing since 0500 the day before. The entire armor company was a mere step away from complete exhaustion. The combination of securing our gear and the rush to our cots almost took us to that next step.

Another combat medic and I were assigned to provide medical support. The other medic was a brand-new Soldier, just out of advanced individual training the month before. He didn't have an M113 license and had never even ridden in an ambulance carrier. Since I was licensed, I got to be both the driver and track commander. This wasn't a matter of prestige, however—being driver, navigator, communications coordinator, mentor, and trainer is a little more tiresome than sharing responsibilities.

We'd finally made it to our racks and I was "out cold" for about 15 minutes when I was awakened abruptly by the company commander. He yelled, "Wake up! SGT Graham just crushed his hand in the

breach block!" I grabbed the other medic, and we sprinted to the spot where the tankers had gathered around to help SGT Graham. We stabilized SGT Graham by the light from the tankers' flashlights, chem lights, and any other kind of illumination they could find. His hand was crushed beyond recognition, and he needed immediate hospital attention.

I ran to get our M113 and radioed for an evacuation vehicle to meet us at a rally point. I then started the carrier and drove over to pick up SGT Graham. Once he was secured inside, we set off for the rally point. The trip was smooth, and SGT Graham was transferred into a wheeled ambulance for transport to the local hospital.

Everything was going great until we returned to the bivouac area. In the fatigued—yet adrenaline-filled—rush to evacuate SGT Graham, I didn't use a ground guide. I only traveled 500 feet, but I managed to bump and damage a HMMWV, crush a pile of rations, pull down two tents, and sever the power line from the field generator. All this destruction occurred in less than 2 minutes. Luckily I didn't run over

any Soldiers who might've been sleeping through the excitement.

Although the damage wasn't costly, there was a lot of it. The company commander was satisfied that SGT Graham's hand was saved, so I wasn't reprimanded or punished. However, he did make me provide the morning vehicle safety brief for the remainder of my time in the unit.

My "adventure" was the topic of conversation for many years to come. I've often heard the



Short Three

Soldiers

JIM BINFORD
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Fort Hood, TX

I was stationed at Fort Hood as an active-duty Soldier in the late 1980s. My crew and I were cleaning our Bradley Fighting Vehicle (BFV) one day when a Soldier came running into the motor pool, obviously very distressed. He was screaming about an accident somewhere on the tank trail.

We jumped in my POV and went to look for the accident. By the time we got to the scene, a MEDEVAC helicopter was already there and medics were working on the injured Soldiers. My gunner turned white as he looked at me and said, "That guy's dead." I saw that CPR was being administered to the Soldier I thought the gunner was talking about. I said, "As long as he's being worked on, he still has a chance." My gunner said, "I'm talking about the guy by your foot."

I looked under the overturned BFV and saw a Soldier lying motionless under the TOW launch tubes. I hadn't seen him when we first arrived. He was dead, and he wouldn't be the only one. Later that night, two more Soldiers died from their injuries.

The accident investigation

team discovered the driver wasn't licensed, and neither was anyone else in the vehicle. The unit had doubled its services quota that month. The mechanic decided to road-test the vehicle himself to complete its services—even though he wasn't licensed or trained to drive a BFV. He took a turn too fast and rolled the vehicle. Had there been a guard on the gates to check dispatch books, this accident never would've happened. Had the mechanic had the patience to wait for a licensed driver, those three Soldiers would be alive today.

There are so many "if only" scenarios, but here's the bottom line. We must know our Soldiers' capabilities and train them to never do anything outside their operational area, regardless of mission priority. 🚛

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entire company learned a valuable lesson from my mistakes that night. Everyone in the unit—including me and especially the new medic—learned the importance of using a ground guide, regardless of the situation or our physical state. Tactical vehicles are great and do their jobs well, but they're deadly to unknowing Soldiers on the ground. Always use a ground guide! 🚛

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"Letters From War: Medical" DVD Now Available

The Army Combat Readiness Center recently released "Medical," the fourth DVD in its Letters From War series. Among other features, the DVD highlights a scenario where a member of the Army medical team from the combat area prepares an incoming military member for the environmental hazards he'll face while deployed to Southwest Asia. Additional resources including relevant field manuals, Department of the Army

pamphlets, and reference guides are included as DVD-ROM content on the disk. Topics covered include an introduction to the Army Center for Health Promotion and Preventive Medicine Web site; heat protection; vector protection; eye protection; hearing protection; and respiratory protection.

To order this or any of the Letters From War series DVDs, go to <http://dodimagery.afis.osd.mil/davis/> and type in "Letters From War" or "medical" as a

keyword search. Then select the DVD you want and add it to the shopping cart. If you need more than one copy, ask for extra copies in the "comments" box. Please remember this product is restricted in release for official use only.

We'll announce upcoming DVDs in future issues of *Countermeasure*. Future topics include "The Joint IED Defeat Task Force UNCUT" and "Fort to Port." Please give us feedback—we want to know if we're on the right track! For more information contact Rebecca Nolin at (334) 255-2067, DSN 558-2067, or by e-mail at video@safetycenter.army.mil. 🚛



The Army National Guard light Infantry unit mobilized in November 2004 for deployment to Iraq, where they would serve as a motorized rifle company with a brigade combat team. The unit conducted readiness preparations at their home station during normal drill periods in November and December. They also performed a mission analysis during this time and identified vehicle crews to meet the MTOE requirements for motorized operations. Upon arrival at their mobilization (MOB) station, they conducted every mission in a tactical operations format.

Too Little Training, Too Much Stress

ACCIDENT INVESTIGATION DIVISION
U.S. Army Combat Readiness Center

Part of the MOB station training consisted of day and night qualification on the multi-purpose machine gun range. The night before the range exercise, unit leadership identified which Soldiers would participate in the exercise and assigned vehicles for each crew. The accident vehicle's driver and the other Soldiers woke up at around 0500 the next morning and prepared their equipment. The driver and truck commander (TC) went to the motor pool and picked up the accident vehicle, an M1025 HMMWV. They conducted preventive maintenance checks and

services, but without the technical manual because one wasn't available. The convoy commander gave an abbreviated convoy briefing and identified the order of march and tactical vehicle speed before the unit departed for the range.

At approximately 1830, the driver prepared for movement from the range to the National Guard Training Center (NGTC). The convoy consisted of three vehicles, and the accident vehicle—carrying four Soldiers—was the last one. About 3 to 5 minutes before the accident convoy departed, a five-vehicle convoy left the range for the NGTC. The earlier

convoy took a wrong turn and became intermixed with the accident convoy.

What happened

As the intermixed convoy turned onto the highway toward post, an unidentified vehicle from the earlier convoy was in front of the accident vehicle. At about 1913, the accident HMMWV—traveling about 54 mph—approached a curve north of the entrance gate. As the vehicle entered the curve, the driver made an abrupt left turn away from two barricades blocking an access road to the right. The abrupt maneuver caused the HMMWV's rear to slide right.

The driver attempted to correct the slide by turning the vehicle's steering wheel to the right. However, the HMMWV went into an uncontrolled left slide toward a ditch on the right, just past the access road. The vehicle slid off the road about 15 feet. The left-front and left-rear tire seals broke during the slide, causing the driver-side tires to deflate.

The deflated wheels regained traction and the HMMWV

flipped toward the driver's side, eventually rolling 360 degrees. After rotating another 180 degrees, the vehicle impacted the ground on the passenger-side roof and overturned back onto its wheels. When the HMMWV finally came to rest, it was facing in the opposite direction of its original path.

None of the HMMWV's four occupants were wearing seatbelts. The senior occupant (SO) and left-side passenger in the back seat were thrown from the vehicle during the rollover. The driver and right-side passenger in the back seat remained in the HMMWV. The ejected back-seat passenger suffered fatal injuries.

Why it happened

The home station battalion provided only 2 days of classroom and hands-on training for new drivers at battalion level.

This policy violated standards set in Training Circular 21-305-4, which requires 40 hours of training. The home station battalion also didn't document drivers' qualifications on DA Form 348-E.

The driver and SO were overconfident. The driver had driven this road many times before, but the HMMWV was traveling too fast for the curve. The driver and SO also neglected one of their primary responsibilities by failing to ensure all occupants wore their seatbelts.

The driver didn't receive adequate school and unit training for operating the HMMWV in limited-visibility conditions. The SO also didn't properly supervise the driver, who was driving the HMMWV in excess of 50 mph in a 30-mph zone. As a result, the driver lost control of the vehicle as he attempted to negotiate the curve.

The driver's training program implemented in the accident unit and most other units of this major Army component was deficient. Soldiers were not provided sufficient training to become proficient in on- and off-road driving conditions. Drivers shouldn't acquire their off-road driving skills when they're in Iraq on a support mission. Instead, they should get this vital training while they're still home and in a controlled environment.

Recommendations

- Include SO responsibilities in pre-deployment training, and ensure training addresses all requirements in Army Regulation (AR) 600-55.

- Ensure units activated for duty in Iraq understand the requirements for driver's training as outlined in AR 600-55.

- Ensure pre-deployment driver's training for units deploying to Iraq is tailored to their mission there.

- Enforce the requirements of AR 385-55 and all aspects of safe motor vehicle operations. Also incorporate additional PCI/PCC checks to ensure Soldiers are using safety equipment and seatbelts, which increase survivability in a vehicle accident.

- Emphasize how not wearing seatbelts can lead to injuries and fatalities, and stress the requirements of AR 385-55 regarding the use of seatbelts during vehicle operations. Also emphasize the requirement in AR 385-55 that convoy commanders conduct safety briefings before any convoy operation during training.

- Assist the training unit in ensuring strict enforcement of seatbelt use during convoy operations.

Today's training is fast pace, but training to standard is still a requirement that must be on target in every training event. Mothers and fathers have entrusted us with the care of their sons and daughters. As NCOs and officers, we must take care of them. 

Comments regarding this article may be directed to the editor at (334) 255-1218, DSN 558-1218, or by e-mail at julie.shelley@safetycenter.army.mil.

SAVING SOLDIERS

One Breath at a Time

Soldiers returning home from Iraq or Afghanistan often are ready to “let their hair down” and party to celebrate making it back alive from combat. However, far too many returning Soldiers are dying in alcohol-related POV and motorcycle crashes. Last summer, the Combat Readiness Center recognized Legal Limit BreathScan devices as a potential “best practice” from U.S. Army-Europe. Since then, units in all four sister services have adopted the BreathScan as a way to protect troops wherever alcohol is available. Below is a testimonial from a Fort Meade, MD, Soldier:

“One of our sergeants was the designated driver while out to dinner with friends. He assumed he could have a couple of drinks. But, when it was time to go, he

used a BreathScan to be safe. He had a buddy administer the test and, to his surprise, he was legally drunk. Instead of risking his friends’ lives, he suggested they all go to a movie at the same mall so he would have time to sober up. Not only did they see a great movie, they made it home safely!”

For more information on the Legal Limit BreathScan or to order some for your unit, visit www.povsafety.com on the Web. Orders may also be placed through Mr. Larry Martin, developer of the BreathScan, by e-mail at lmartin@povsafety.com or by calling (727) 410-3048. 🚗

Comments regarding “News & Notes” may be directed to the editor at (334) 255-1218, DSN 558-1218, or by e-mail at julie.shelley@safetycenter.army.mil.



ovement operations might not sound dangerous, and they’re certainly not all that glamorous. As my unit’s movement officer, I must confess I wasn’t thrilled at the prospect of moving our equipment—all 1,500 pieces of it—from theater and being the last to arrive home. We were redeploying from Iraq after a year-long tour, and all of us were anxious to see our families and loved ones.

AD ALMO

Despite our “get-home-itis,” we managed to clean all the equipment in record time and with no injuries. This feat was due to the great leadership and supervision of our NCOs. Everyone got on the plane and headed home, except about 15 troops who stayed behind to help load the ship.

We received the last of our equipment at the port the day before our ship arrived. The equipment was mostly ISU-90s, but there were a few broken vehicles that had been hauled to the staging area by privately contracted civilians. Everything was accounted for except a broken fuel truck, which finally arrived at 2300 that night. By that time, we’d been up for 18 hours and really wanted to get some sleep. Needless to say, we were anxious to get the fuel truck unloaded and end the day.





ost Rolling Disaster

Since the fuel truck wasn't operational, the contractors had winched it onto a low-boy wrecker for the drive. Now the problem was getting the truck off the low-boy. We didn't have a crane that could lift the vehicle, and it would've taken hours to get one. The contractor driver suggested elevating the low-boy's platform to roll the fuel truck off the back while another driver rode its brakes. I

tired, I still was concerned the truck's tires might slide off the low-boy's side as it rolled down the platform. The sergeant got in the truck and gave the thumbs-up for the contractor to lift the platform. Everything looked good as the truck slowly started to back off with its wheels straight, and my mind eased a little.

By that time, we'd been up for 18 hours and really wanted to get some sleep. Needless to say, we were anxious to get the fuel truck unloaded and end the day.

thought this sounded like a great idea, and we even had a sergeant who was licensed and had lots of experience driving fuel trucks.

Even though I was

However, the truck shot off the wrecker as soon as its rear tires hit the ramp. I remember thinking, "Wow! This guy really knows how to drive!" That confidence

quickly faded as the truck kept rolling right through a barbed-wire fence and crossed the street toward our stacked ISUs. Fortunately the truck's rear tires hit a cement barricade just short of the ISUs, and the vehicle came to an abrupt stop. Disaster was averted another day.

If you've ever driven a HEMMT or fuel truck, you can probably figure out what went wrong with our plan. The driver didn't start the truck and allow the brake system to pressurize, so the truck just kept rolling even though he was slamming the brakes. The truck wasn't damaged, and thankfully no one was hurt.

ANONYMOUS

We were lucky—but we also were careless because we were very tired. I was the movement leader, and I allowed safety to take a back seat to mission accomplishment. Even with high operational tempo, we've got to slow down and put safety first. 🚛

Comments regarding this article may be directed to the editor at (334) 255-1218, DSN 558-1218, or by e-mail at julie.shelley@safetycenter.army.mil.

BIG BROTHER VS. B

Army regulations! DA pamphlets! DOD regulations! Standing operating procedures! All these rules to keep me confined in my space! I do them because I don't have a choice, right? This is the Army!

Does this describe how you feel? Let's look at the other side of the coin. Do you flash your lights at oncoming traffic when you know a policeman is waiting a little further down the road? Do you give your sister company a warning call when battalion comes in for inspection, you know, to tell them what they're looking for?

All these "for instances" illustrate the constant battle in our everyday lives, on duty or off, where we as individuals and organizations wrestle with being part of the "band of brothers" versus "big brother." In both cases, big brother is the large entity "out

there" trying to instill order and discipline to keep us safe from each other and ourselves. The band of brothers is "us." At all levels of our lives, whether we are alone in our cars or operating at the various levels of Army organization, we band together to protect each other from big brother's intrusions or repercussions.

I'm sure a human factors professor would describe these behavioral impulses as the "herd" mentality between predator and prey. I would like to extend a simpler explanation. My hope is each side of this equation can see the other's rationale for their actions.

It's Operation Iraqi Freedom III, and we're at the Corps of Engineers' PAD 3, Camp Virginia, Kuwait. Big brother says, "Why do you have all these Texas barriers around your PAD? Can't you see you're building a compound within the wire?" Band of



BAND OF BROTHERS

LTC THOMAS MCDERMOTT

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U.S. Army Combat Readiness Center

brothers says, "We have to protect our stuff. People are walking through here all night, and we might lose our tools."

Big brother understands because he once was where this lieutenant now stands. The lieutenant is just protecting his stuff and making his Soldiers feel special. But, big brother still must tell the band of brothers what they don't see. They've never seen tents catch fire and watched as 40 burned in minutes. They've never seen how complicated it is to get fire/rescue across a forward operating base or base camp. They've never run between tents and tent ropes with stretchers and lifesaving equipment to reach the Soldier having a heart attack. They simply don't know what they don't know.

Band of brothers takes all this in and says big brother just doesn't get it, or big brother is "old Army" and this is the "new Army." And he's right on both points. Band of brothers is the center of the

bell curve of today's Army. The 18- to 26-year-old Soldiers are the majority of this force and part of the "Y" generation. For you baby boomers, the "Y" means that every time you tell them something, they always ask "Why?"

Both junior and senior leaders—WE—must bring these two differing perspectives to the table. The old-Army types must understand our young Soldiers see a huge difference in perspective of purpose and intent. Band of brothers must see the "old Army" has been there, done that, and doesn't want young Soldiers to experience the hard lessons learned. Experience is the best teacher, but this old saying is true: "Experience teaches slowly and at the cost of mistakes." 🍌

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Lost

AMV

Class A

- Two Soldiers were killed when their M1114 HMMWV overturned at or on a railroad crossing during a day convoy movement. One of the deceased Soldiers was serving as the vehicle's gunner, and the other deceased Soldier was a passenger. Two other Soldiers were injured.

- Two Soldiers drowned when their M1114 HMMWV rolled over into a canal. The HMMWV's driver was backing the vehicle near a drainage ditch when the bank suddenly collapsed, overturning the vehicle in the water. The two deceased Soldiers were serving as the HMMWV's driver and truck commander, respectively. Both Soldiers were wearing their seatbelts.

- Three Soldiers drowned when their M1114 HMMWV overturned into a canal. The vehicle was part of a patrol convoy and veered off the roadway before rolling over into the water. The accident occurred in the early morning.

- Soldier was killed when his M998 HMMWV collided

with an M1114 HMMWV. The deceased Soldier was driving the M998, and he was ejected from the vehicle and suffered massive head injuries. He was not wearing his seatbelt or helmet. The accident occurred in the early evening.

- Soldier suffered fatal injuries when the M915 she was driving overturned after colliding with a civilian vehicle on a curve. The Soldier was trapped in the vehicle following the accident, which occurred during the day.

- Soldier died when the LMTV he was driving struck a barrier and rolled over. The vehicle was part of a day convoy.

Class B

- Three Soldiers were injured when the M1114 HMMWV they were riding in rolled over. The driver overcorrected the vehicle after hitting a dip in the road, causing the vehicle to overturn. All four occupants, including the driver, were ejected. The passengers suffered head, arm, and pelvic injuries. The driver was not injured. The accident occurred during the day.

- A 2 1/2-ton truck suffered Class B damage when it flipped over a guardrail



into the opposite lane on a highway. The driver lost control of the truck after swerving to avoid a civilian vehicle. The accident occurred at night, and snow and ice conditions were reported. Neither Soldier in the truck was injured.

Class C

■ Soldier suffered a lacerated liver and cuts to her knee when the fuel tanker truck she was riding in rolled over. The Soldier was trapped inside the vehicle after the accident. The driver was not injured. The truck was part of a day convoy.



Personnel Injury

Class A

■ Soldier suffered a fatal gunshot wound when the Soldiers at the traffic control point he was manning opened fire on a civilian vehicle. The Soldiers opened fire after the vehicle's driver failed to stop after repeated warnings. The accident occurred at night.

■ Soldier died when an explosion occurred inside a bunker. Several Soldiers were placing AT-4s inside the bunker at the time of the explosion. The deceased Soldier was in a storage room when the explosion occurred.

■ Soldier suffered a permanent total disability when she slipped from a storage rack while stocking

What Was He Thinking?

Or, more aptly, why wasn't he thinking? A Soldier drove his M915 to the refuel point following a mission. His fuel key didn't work, so he got in the truck, fired it up, and began the drive to get the key. What the Soldier didn't realize, however, was that the fuel pump nozzle was still attached to the M915's gas tank. Fortunately the

Soldiers on post weren't wowed by a bright orange explosion, but the flashing blue and red lights from emergency response vehicles caused quite a stir. The unfortunate Soldier was ordered to attend remedial drivers training, including special instruction on proper fueling procedures. He also got to pay for all damages to the fuel pump.

items in a warehouse. The Soldier was stepping down from the rack onto a forklift when she fell.

Class B

■ Soldier's left-hand fingers were amputated when an unidentified piece of ordnance exploded in his hand. No other details were reported.

■ Soldier's finger was amputated when it caught on the railing of an LMTV. The Soldier was exiting the rear of the vehicle at the time of the accident. Subsequent surgery failed to reattach the finger.

Class C

■ Soldier suffered chemical burns to his eyes while servicing an M988

battery. The Soldier was installing cables to a PLGR mount and removed the battery cap to loosen a nut from the battery terminal. The battery sparked when the Soldier accidentally grounded the terminal with a metal ratchet, and acid shot into his eye. The Soldier, who was not wearing goggles, was expected to recover fully.

Sergeant First Class Paul Ray Smith

MEDAL OF HONOR

I WILL ALWAYS PLEASE THE MISSION.

I WILL NEVER ACCEPT DEFEAT.

I WILL NEVER QUIT.

I WILL NEVER LEAVE A FALLEN COMRADE.

“Like every one of the men and women in uniform who have served in Operation Iraqi Freedom, Sergeant Paul Smith was a volunteer. We thank his family for the father, husband, and son and brother who can never be replaced. We recall with appreciation the fellow Soldiers whose lives he saved, and the many more he inspired. And we express our gratitude for a new generation of Americans, every bit as selfless and dedicated to liberty as any that has gone on before—a dedication exemplified by the sacrifice and valor of Sergeant First Class Paul Ray Smith.”

President George W. Bush,
White House Ceremony, 4 April 2005

ARMY GROUND RISK-MANAGEMENT INFORMATION

Countermeasure

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JULY 2005



Own the
Night



U.S. ARMY

DASAF'S CORNER

From the Director of Army Safety

Why the CRC and What's Next?

The Army Safety Center recently transformed to the Combat Readiness Center (CRC). Once an organization that focused solely on accidental losses, we're now looking at all losses of combat power. This holistic view is quickly providing a new capability for our Army to understand loss and become more effective through control measures and predictive analysis. So, what's next for the CRC? How will the Army operationalize this new knowledge to better

support the combatant?

Guidance from the Chief of Staff, Army (CSA) and Secretary of the Army (SECARMY) is clear. In their words, we must "manage risk where the rubber meets the road, not be risk averse, and aggressively take the fight to the enemy by better understanding the risk and the required control measures." However, we can't meet this requirement unless the knowledge is relevant and in the hands of the user.

More than 300,000 American Soldiers currently are serving in 120 countries across the globe. Our Army's junior leaders are gaining a wealth of knowledge on



combat operations, both on the ground and in the air. They've got a lot to say, and it's important that senior leadership listen as we move forward in our transformation. This point became clear to me as I was preparing my thoughts for this article and dialoging with my aide-de-camp.

My aide is a combat veteran, like many of our young leaders. In his brief career he's served tours in Korea, Afghanistan, and Iraq. I've dragged him around the world with me; he's participated in more than 120 briefings and been closely involved in countless Army-level investigations. So I asked him, "Why the CRC and not the Safety Center?" He quickly responded, "Sir, just last night I placed the twenty-third red tab in my West Point yearbook. Each red tab marks a peer of mine that's died... we need the CRC."

Losing friends is personal. His response was moving, so I decided to dig a little deeper and asked, "From your foxhole, what should be next for the CRC?" Early the next morning I found the following e-mail on my BlackBerry:





“Sir, you asked me two questions. First, ‘Why the CRC?’ Here are my thoughts.

“It’s the CRC because our Army can’t afford to lose combat power, particularly during this Global War on Terror. On average, one American Soldier has died every 9 hours since 11 September 2001. Updating you each day on our statistics is very sobering, especially this early in my career.

“The number one killer of DOD personnel in Operation Enduring Freedom is incidents involving helicopters; these incidents rank third in Iraq. However, these statistics pale in comparison to the number of Soldiers dying in vehicles from accidents, roadside bombs, and improvised explosive devices. This year alone, an average of one Soldier has died each day in a combat vehicle and two have died each week in their privately owned vehicles. Two-thirds of the Soldiers lost to accidents thus far have died in vehicles. And, the numbers continue to rise.

“We can’t help but see the magnitude of our challenge on the roadways, both at home and in theater. In the air—both in and out of combat—we’ve lost nearly 160 Soldiers and

more than three battalions’ worth of helicopters at a cost of nearly \$2 billion. These trained men and women weren’t just Soldiers; they also were friends, sons, daughters...and classmates.

“The CRC will be the focal point for analyzing all accidents, serious incidents, and combat losses. It’s about capitalizing on current technologies to become predictive and identify tactics, techniques, and procedures to mitigate and prevent future losses. The answer to the question of ‘why’ is why hasn’t there been a CRC all along?

“I took notes this past February when the CSA and SECARMY directed the Safety Center to transform to the CRC. Its new mission was to continue embracing safety, but also fulfill a requirement to report, track, and analyze combat losses. The CSA and SECARMY stated that before the CRC, there wasn’t a ‘single source’ data depository for composite Army losses. They also pointed out there wasn’t an Army-level resource explaining how combatant commanders should report, investigate, and—most importantly—prevent composite losses. Looking out my foxhole, it appears

there's very little Composite Loss Awareness (CLA) shared across the battlefield.

"Your second question was, 'What's next for the CRC?' Clearly, we must enhance CLA where the rubber meets the road. From my perspective, CLA is defined best as providing and sharing holistic loss data so Soldiers can understand each mission's unique characteristics, similarities, and relevance to previous incidents. For nearly 2 years, senior leaders knew seatbelts weren't being worn in vehicles; aircraft were flying too low and too fast in certain conditions; and hazards often were overlooked in anticipation of enemy engagement. Regardless of the number of policy letters written, every unit relief in place or transfer of authority resulted in learning the lessons anew. How do we become more aware and not repeat our mistakes? How can the CRC provide CLA?

"CLA works only if everyone in the formation understands what can take them out of the fight, regardless of the cause. This understanding exists in the tactical and non-tactical environment when Soldiers know and manage the risks. Composite Risk Management (CRM) insists that all players know the dangers, understand the trends, and comprehend the particular environment in which they operate, combat or not.

Therefore, acquiring CLA is essential to managing composite risk.

Leaders then can make the right decisions rapidly and without lengthy, calculated, and metric-based computations ('old safety'). Digital warriors already are familiar with the concept of CLA, and the CRC will enable them in combat.

Here's how.

"There's a grid coordinate location associated with every incident report the Army sends and receives, whether the report is generated through the in-theater SIGACTS, ArmyWatch, Joint IED Task Force, Army Shootdown Assessment Team (ASDAT), serious incident reports, or CRC accident reports. The intelligence community has known for many years the value of populating a map with enemy movement and reports. Why hasn't the safety community grasped this same concept? Safety isn't operationalized by doctrine and, therefore, often isn't seen as a composite part of the fight.

"Imagine the Force Battle Command, Brigade-and-Below (FBCB2) or BlueForce Tracker (BFT) overlay on the M1114 HMMWV. These screens look a lot like the interactive moving maps displayed on any navigation system in a newer-model car. The route is planned, the briefings are conducted, and the patrol begins. Using these existing systems, the CRC should live up to its potential and provide our Soldiers with relevant, interactive, and worthwhile information. This same concept applies to the young aviator planning his mission on the Aviation Mission Planning System (AMPS) and op cell monitoring on BFT. The maps generated by these current Army systems should include an overlay of composite loss data.

"Since the CRC will maintain a centralized loss database, it has the capability to plot on these maps a color-coded dot (orange) for every accident occurring in Iraq since the first movement. Additionally, the CRC should receive real-time reports from the IED Task Force and ASDAT or SIGACTS. Those incidents can be plotted easily with another color (red) to indicate enemy activity. Interactively overlaying this information with two basic choices—length of time



(30, 60, or 90 days or 6 or 12 months) and the type of loss (air or ground)—will justify its relevance to the user.

“When a cursor drops over any particular dot, the specifics of the incident will display in a small pop-up window (e.g., ‘M1114 Rollover/Speed’ or ‘OH-58D Shutdown/SA16’). If the user wants more information, a simple double-click immediately will link him to the loss or accident report for that particular incident. The tool’s value is that it will remain a single-entry requirement from current databases across the Army. Multiple venues and users will engage simultaneously on the SIPRNET as a software program from current technologies (AMPS and BFT).

“If these maps were printed and posted at every ALOC convoy sign-out location, in the commander’s office, or beside every flight operations hazard map, the Army’s junior leaders could visualize the importance of not speeding, wearing seatbelts, and rehearsing rollover drills. A majority of orange dots undoubtedly would convince a young convoy commander. For aviators, these orange dots sometimes would justify altitude restrictions, airspeed, or airspace constraints, which often are overlooked.

“What if this information was interactive and with the user at all times? Step back into that M1114 HMMWV and sit at the BFT screen. Along the route, imagine the TC or company commander is scrolling the menus and happens to see on his 10-meter imagery a series of orange or red dots 5 miles ahead. A closer look reveals this road historically has more IED attacks than accidents, or that the orange dots are rollovers caused by excessive speed in oversized vehicles. In seconds he can pick up the radio and tell the other vehicles to reduce their speed for the next 2 miles. Single entry, multiple use, and relevant to

the combatant—a real-time, interactive CLA overlay providing the necessary situational awareness and rapid risk mitigating decision skills necessary to cut all types of Army losses.

“One step further would allow unit adaptation. The CRC manages the minimal Army data and map-populated points. However, the software allows catered modifications for any deployed unit that wishes to annotate additional near-miss information or collect close-call data (missed enemy engagements or near mid-air collisions). The CRC will work closely with the software and rapidly modify it to fit the unit’s request.

“We’ve lost the equivalent of three brigades since 9/11, and nearly half these losses weren’t in combat. For often unforgiving and preventable reasons, many superb Army leaders are no longer in the fight. We’re the best Army in the world and we can do better—our Nation deserves it. Understanding and learning from composite losses is the fastest way our combatant commanders can make the appropriate decisions to prevent the loss of combat power. CLA through digital technology will save lives and enable CRM—it’s the way ahead for the CRC and the key to helping our combatant leaders.

“Very Respectfully,
Travis”

So, why the CRC and what’s next?
Hmm...I couldn’t have said it better myself! ★


BG Joe Smith



CONTENTS

- 2** **DASAF's Corner**
Why the CRC and What's Next?
- 6** **Dark Days**
- 8** **Night Vision:**
Not Just For Superman!
- 10** **Afraid of the Dark?**
- 12** **Pitch Black? No Problem!**
- 14** **Night Moves**
- 16** **Patrolling by Leadership**
- 18** **The All-seeing Airborne Eye**
- 21** **Halfway There in FY05**
- 22** **Accident Briefs**

features



on the web
<https://crc.army.mil>

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Dur Soldiers are serving in all corners of the globe. Their missions and living conditions vary, but their locations all have one thing in common—it gets dark sometime. When night falls, even the most mundane tasks become a lot harder, and this is especially true of driving. In Iraq, blowing dust and sand often make driving during the day a challenge; darkness only intensifies already poor conditions. In fact, most OIF veterans will tell you night in Iraq

is a whole lot darker than night at home.

Our missions must go on, however, no matter the conditions. As such, Soldiers must take driving at night seriously. Since the beginning of Fiscal Year 2005, the Army has lost 22 Soldiers in nighttime vehicle accidents. The loss of these Soldiers has led to many dark days for their buddies, their units, and their families. The paragraphs below highlight each of these accidents and include the time of occurrence. It's worth noting that more than

Days

JULIE SHELLEY
Editor

half these accidents occurred between 1900 and 2000 hours, and almost all occurred in Iraq.

- **HMMWV collision, 1850 hours, Iraq:** M1114 and M998 collided. The M998 driver was ejected from the vehicle and suffered fatal injuries. He was not wearing his Kevlar helmet or seatbelt.
- **HMMWV rollover, 1916 hours, U.S.:** M1025 rolled over during a convoy movement. The driver was speeding and made an abrupt turn to avoid two barricades in the roadway, causing the HMMWV to overturn. One Soldier was killed, and the driver and two other Soldiers suffered minor

injuries. None of the Soldiers were wearing seatbelts.

- **BFV rollover, 1950 hours, Iraq:** An M2 rolled over into a canal after the roadway collapsed beneath the vehicle. Five Soldiers drowned initially; one other Soldier died after he was hospitalized.
- **ASV collision, 1951 hours, Iraq:** M1117 Armored Security Vehicle hit a civilian automobile head-on. The civilian driver reportedly lost control of the vehicle and was killed in the accident. One Soldier suffered minor injuries.
- **HMMWV collision, 1945 hours, Iraq:** M1114 collided with a civilian vehicle during

a mounted patrol in black-out drive. The civilian driver was killed. The M1114 driver and two other Soldiers were injured.

- **HEMTT rollover, 2000 hours, Iraq:** M984 overturned during a convoy movement when the driver experienced difficulty with the brakes. The gunner was ejected and suffered fatal injuries.
- **HMMWV rollover, 2000 hours, Iraq:** M1114 rolled over into a drainage ditch after the driver steered the vehicle too close to the road's edge while making an improper turn. The HMMWV landed upside down 5 feet of water. The driver and one other Soldier drowned.

• **HMMWV rollover, 2002 hours, Iraq:** M1114 rolled over when the driver lost control after attempting to pass a slower convoy. The vehicle crossed the median before it overturned. The gunner was killed.

• **HMMWV rollover, 2045 hours, Afghanistan:** M1037 rolled over while the driver was negotiating a 4-foot wadi during a combat patrol. The gunner was killed. The vehicle occupants, including the gunner, were wearing seatbelts.

• **HMMWV rollover, 2246 hours, Iraq:** M1114 hit a barrier and overturned during a convoy movement. The gunner suffered fatal injuries.

• **HEMTT rollover, 2248 hours, Iraq:** M1075 struck a barrier and rolled over after the driver lost control of the vehicle. The truck commander was killed.

• **HMMWV rollover, 0005 hours, Iraq:** M998 overturned down a 20-foot aqueduct spillway when the driver made an improper right turn. One Soldier was killed, and eight other Soldiers suffered minor to serious injuries.

• **HMMWV rollover, 0105 hours, Iraq:** M1114 overturned during black-out drive for unknown reasons.

The vehicle occupants were ejected when one of the doors separated during the rollover. One passenger was killed.

• **BFV rollover, 0350 hours, Iraq:** M2A2 rolled over into a canal while on a combat patrol. The vehicle's white lights were on at the time of the accident. The track commander suffered fatal injuries.

• **HMMWV collision, 0435 hours, Iraq:** M1025 crashed into the back of an M1A1 parked on a bridge. The tank's infrared flashers were activated at the time of the accident. The M1025 truck commander suffered fatal injuries.

• **HMMWV rollover, 0512 hours, Iraq:** M1114 ran off the roadway and rolled over into a canal during a patrol convoy. All three vehicle occupants drowned.

Most of these accidents can be attributed to operator error. No Soldier should be afraid of the dark, but carelessness or a simple misjudgment that leads to tragedy is something to fear. Fight at night, survive, and keep the days ahead bright. 

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NIGHT VISION Not Just For SUPERMAN

OPERATIONS DIVISION

U.S. Army Combat Readiness Center

T

oday's battlefield is drastically different from the large-scale conflicts seen in the early to mid-20th Century. The enemy in Iraq and Afghanistan is a scattered force that lurks in the shadows and fights by indirect means. Effectively fighting and maneuvering at night is essential to winning our Nation's wars in the face of this elusive enemy.

You don't have to be Superman to see and fight at night. Kryptonite might not be available through your local supply chain, but night vision devices (NVDs) are. For several decades, Soldiers have been using NVDs to see, maneuver, and shoot at night or during periods of reduced visibility. The Army currently issues several variants of two different NVD types: image intensifying devices and thermal forward-looking infrared (FLIR) devices.

Image intensifying devices amplify available light, and there must be some light present for them to work. These devices intensify available light by 2,000X to 5,000X. Most image intensifying devices are classified as night vision goggles (NVGs). **Current NVG systems include:**





AN/PVS-14 Monocular Night Vision Device (MNVD).

Combat infantry leaders use this small, lightweight device for observation and command and control. It interfaces with the AN/PVS-7D head and helmet mounts and the 3X magnifier. The MNVD also can be mounted on small arms weapons with a rail grabber.



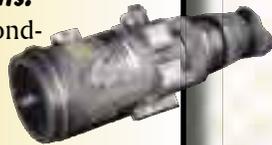
AN/VVS-2 Driver's Night Vision Viewer.

The AN/VVS-2 is a night vision scope that provides closed-hatch night vision capability in combat vehicles. Its second-generation image intensifier tube is an improvement over unaided night vision, but is inferior to any third-generation intensifier.



AN/PVS-4 and AN/TVS-5 Weapon Sights.

Both these systems are lightweight, second- or third-generation scopes and can be mounted on a variety of weapons or handheld for surveillance purposes.



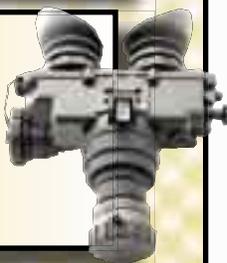
AN/PVS-5.

The AN/PVS-5 is one of the original NVG systems developed for individual use. This system uses a second-generation image intensifier tube for combat, combat support, and combat service support operations.



AN/PVS-7D.

This system is a lightweight goggle that uses a single third-generation image intensifier tube. Its performance is significantly better than the AN/PVS-5. Its uses include combat, combat support, and combat service support operations.



AN/PVS-10 Sniper Night Sight (SNS).

The AN/PVS-10 SNS is an integrated day and night sight for the M24 sniper rifle. With this system, snipers can acquire and engage targets during low or high ambient light conditions. The AN/PVS-10 SNS, which mounts on the M24, uses the same mil-dot reticle as the existing Leopold day scope and provides 8.5X magnification.



Thermal FLIR detectors (sometimes called "sensors") detect the temperature difference between an object and the surrounding environment. FLIR systems are installed on certain combat vehicles and helicopters. These systems include:

AN/VAS-5 Driver's Vision Enhancer (DVE).

Combat and tactical wheeled vehicle drivers use the DVE during day or night operations when their vision is degraded by smoke, fog, dust, or similar conditions.



AN/PAS-13 Thermal Weapon Sight (TWS).

Soldiers can see deep into the battlefield with the AN/PAS-13, which increases surveillance and target acquisition ranges and allows obscurant penetration during day or night. The second-generation TWS is a major improvement over the image-intensifier night sights currently used on small arms.



The systems described above represent advances in technology that wouldn't have been possible even 50 years ago. The Army's given you the best equipment available to fight at night and survive. Use your "superpowers" and make it home!

Comments regarding this article may be directed to the editor at (334) 255-1218, DSN 558-1218, or by e-mail at julie.shelley@safetycenter.army.mil.



All too often, what you can't see can kill you. This is especially true when you're driving across unfamiliar terrain at night. Although night vision goggles (NVGs) are a great improvement over the unaided eye, they don't come close to actual daylight. You can't let your guard down at night, even for a second! Some of the limitations associated with NVG use are listed on the next page, so take note before you head out on your next night mission.

AFRAID OF THE DARK

OPERATIONS DIVISION
U.S. Army Combat Readiness Center

Reduced field of view (FOV) and scanning

Looking through NVGs is a lot like peering down a tunnel. Your normal FOV is almost 190 degrees, but with NVGs your FOV is only 40 degrees. This is because your peripheral, or side, vision just isn't there with NVGs. To compensate, you must turn your head constantly to scan for hazards.

You can get into trouble very quickly if you don't scan, or if you scan but don't do so properly. This lesson has been learned the hard way far too many times.

Several years ago the U.S. Army Aeromedical Research Laboratory studied scanning in Army Aviation and developed a recommended strategy for aircrews on NVG missions. Many of their recommendations also work well during ground operations.

Here are a few:

- Formal scan or search patterns aren't necessary. After relatively little training, search performance is better with "free" viewing.
- Adjust your vehicle's speed to fit your location. Typically, the faster you drive, the slower you tend to scan. This is because your eyes take longer to identify fine details at

higher speeds. As such, reduce your speed when driving in congested areas or on rough terrain and in limited-visibility conditions.

- Your first priority when scanning is to identify hazards. Identify objects as far away as possible and monitor them until your vehicle is clear. However, to prevent fixation, don't look at any object for more than a second or two.

- The best resolution is in the tube's center, so don't practice off-center viewing under NVGs.

- Don't turn your head too quickly while scanning. Sudden movement can lead to disorientation. Remember that scanning naturally slows down or even stops altogether when you're tired and during emergencies or stressful situations.

- NVG missions are a team effort. All NVG users must help their drivers identify any hazards, especially those on the road's right shoulder.

Reduced visual acuity (sharpness)

NVGs don't provide the same level of sharpness you're accustomed to in daylight. Normal vision is 20/20, but your vision through NVGs is only about 20/25 to 20/40 in *optimal* conditions. Your visual acuity drops as illumination or contrast

decreases, giving you an even "fuzzier" image.

Reduced depth and distance perception

Normally you use both eyes (binocular vision) to estimate an object's distance and depth. With NVGs you're essentially using only one eye (monocular vision), which poses real problems. For example, imagine two different-size objects sitting side by side. Under NVGs, the larger object will appear nearer. Similarly, the object in front of a series of overlapping targets appears nearer (possibly much more so than true) through NVGs. Some objects also might appear farther away than they actually are.

We tend to associate the loss of detail sharpness with distance. However, a light source that's not part of a terrain feature—for example, a light atop a tower—might look closer than it really is. You must be aware of these potential problems and recognize that you'll overestimate distance and underestimate depth under NVGs.

Dark adaptation

Your eyes need time to adjust from day to night vision. When you first walk into a dark movie theater during the day, you can barely see because your eyes need time to

adjust to the darkness. The same principle holds true with any night vision device (NVD). You're basically getting a dim-day view through NVDs, so when you remove them your eyes have to adapt to the darkness.

Adaptation time depends on how long you've been wearing the NVDs. Most people achieve about 75 percent dark adaptation within 30 seconds. This fact is especially important to remember if you're using NVDs as binoculars (basically lifting them to your eyes and then lowering them).

Accidents ranging from fender-benders to mission stoppers sometimes happen because people misinterpret what they see through their NVDs. To train safely and win on the battlefield, you must understand the limitations of your night vision equipment and be skilled in using it. Leaders also must be aware of the hazards involved in NVD operations and take measures to control the risks. Be safe and own the night! 

Comments regarding this article may be directed to the editor at (334) 255-1218, DSN 558-1218, or by e-mail at julie.shelley@safetycenter.army.mil.

PITCH BLACK?



NO PROBLEM!

1LT MATTHEW NOWLIN
A Co., TF 1-151 AVN (ATK)
Balad, Iraq

It's overwhelmingly dark in Iraq. In the United States, we grow up under the orange glow of streetlights and neon fast-food signs. There's light in most places, even when it's dark. But it's so different over here, and it's difficult to describe to someone who's never experienced it personally. The darkness literally swallows every detail, and you can become disoriented in just a matter of seconds.

I'd adjusted—or so I thought—to the dark abyss that cloaked my forward operating base every night. We were forbidden from using white

lights, lest we attract small arms or indirect fire from the enemy elements that always lurked outside. So, nearly everyone—me included—carried a small LED light to find our way around. My light had grown increasingly dim over several weeks, but I never replaced the battery. I'd developed this misguided confidence that I could find my way around, even through the maze of barriers and concertina wire.

One night I was working in the TOC and felt nature's call. No problem! I knew the path from the TOC to the latrine well and, since I'd been on duty for several hours, my eyes had



adjusted to the dark somewhat. With only a few stumbles along the way, I made it to the well-lit latrine and took off my helmet. I was in the latrine for just a couple of minutes, but my night vision deteriorated significantly—a fact I found out the hard way.

I paused for a second when I walked out of the latrine, helmet in hand. I was surprised at how much darker it looked outside. I started climbing down the stairs, still carrying my helmet by the chin strap. I was almost home-free when, at the bottom of the stairs, I tripped and fell head-first into a concrete bunker. I got up okay, but the sharp pain in my forehead and blood streaming down my face told me this injury wasn't pretty.

Several stitches later I was sitting in the aid station, nursing my wounded pride and wondering what I could've done to prevent this accident. Suddenly, a peace came over me. I realized I lacked balance in my life!

Achieving balance is the key to risk mitigation. I know you're thinking, "What does my inner 'tao' have to do with making the combat environment safer?" Simply put, the answer is everything!

With too many controls, missions become over-involved and ineffective. On the other hand, too few controls allow

unnecessary dangers to creep into an already hazardous situation. Leaders must perform a thorough risk analysis during the mission-planning process to determine the mission's "tao."

Leaders must give consideration to the most common conditions their units might encounter. Some scenarios are difficult to predict, while others are too improbable to demand exhaustive planning. However, adding a few unlikely scenarios will help provide balance to most plans. Controls should address how to prevent a given scenario from occurring and, if it does occur, how to reduce its impact on the mission.

Looking back now, I should've analyzed my environment and developed controls to reduce the hazards waiting in the dark. I obviously couldn't use a spotlight because of the tactical hazards posed by white light. So, I accepted the accidental hazards and walked around totally unaided. If I'd simply replaced my battery—and put my helmet back on when I left the latrine—I'd have saved myself some pain and pride! 

Contact the author by e-mail at matthew.nowlin@us.army.mil.

NVGS

Don't Prevent Falls in the Dark!

A tracked vehicle parked in front of the aid station is never a good sign in a war zone. This Soldier emerged from the back of one such vehicle with a large, bloody dressing on his head. He was on patrol and wearing his NVGs when he tripped and fell forward on his face. The impact embedded the goggles in his left eyebrow and cut the flesh to the skull. Two layers of sutures, one deep and one surface layer, were required to close the wound. Watch your step—NVGs don't prevent falls in the dark!

—Photo and caption courtesy LTC Roman Bilynsky, Chief of Neurology Service, William Beaumont Army Medical Center, Fort Bliss, TX. The photo was taken in early 2004 while LTC Bilynsky served with the 4th Forward Support Battalion, 4th Infantry Division, in Tikrit, Iraq. He may be contacted by e-mail at roman.bilynsky@us.army.mil.

DID YOU KNOW?

Serious injuries don't always bleed heavily, and some relatively minor injuries (like the scalp wound the Soldier in this story suffered) can bleed profusely. When in doubt, see the doc!



Night

SFC JOHN TEMPLE

Accident Investigator

U.S. Army Combat Readiness Center

It was a typical summer night at the Joint Readiness Training Center—hot and humid. A unit training there was conducting an exercise that simulated an assault on a town. The exercise included mounted and dismounted Soldiers. Shortly after the exercise began, the light infantry dismounted from a truck about a kilometer from the objective and linked up with some M1 tanks.

It was getting dark, so the tanks' drivers switched on their driver's night sights. The dismounted infantry took up positions near the tanks. About an hour later the company commander called one of the tanks forward. Although the tank was moving very slowly, the driver didn't notice the dismounted Soldiers lying in a ditch about 50 yards to his front. A few minutes later

someone yelled, "Stop the tank! Stop the tank!" The driver didn't know what was wrong, but he stopped the tank anyway. He soon discovered that he'd run over and killed two dismounted Soldiers.

The driver hadn't attended night driver's training. He also didn't know his driver's night sight was deadlined because it couldn't be focused at 50 feet. He simply assumed

that was the way the sight worked. Driving with any type of night vision devices (NVDs) is a challenge under the best of conditions, but especially with little or no training and deadlined equipment.

The driver of that tank made several fatal errors—mistakes made, however, because he hadn't been trained properly. A good driver's training program must focus on all

ht Moves

aspects of driving, whether during the day, at night, or in between. These programs also must be tailored to the area of operations and include specifics of NVD use and maintenance.

Training with NVDs is a critical component of any driver's training program, but particularly important before deployment. Soldiers deployed to Iraq and Afghanistan are driving in some of the most demanding terrain ever encountered. One common problem is depth perception, which is diminished naturally with NVDs. However, brownout caused by blowing dust or other low-visibility conditions restrict depth perception even further.

One possible threat emerges when a highly skilled driver with in-theater experience leads inexperienced drivers in a night convoy. Since the new drivers' skills are inadequate, they often fall too far behind and lose sight of the lead vehicles. To compensate, the inexperienced Soldiers drive faster to make up the distance and maintain convoy discipline. This is a dangerous game.

The landscape in Afghanistan and Iraq is unforgiving, and the roads are often narrow and full of unforeseen hazards. Leaders must instruct Soldiers to dismount and ground-guide their vehicles in restricted areas and during periods of limited visibility. Commanders also must establish tactics, techniques, and procedures for stopping and transitioning from unaided driving to NVDs. In addition, leaders must brief the transition to NVDs on every mission.

Use Army Regulation 600-55 and Training Circulars 21-305 (wheeled vehicles) and 21-306 (tracked vehicles) to develop a driver's training program that's transportable to the theater of operations. Training must include provisions for Soldiers transitioning to driving positions and new Soldiers coming into the unit. Commanders must stay involved in licensing and driver

selection, even in the area of operations.

Plan to conduct sustainment training that focuses on the changing environment (both terrain and weather) units will encounter in theater. Sustainment training must be conducted at least once a year. However, with the intensity of deployed operations and the potential for personnel movement, units should plan to conduct sustainment training more often as conditions permit. An effective driver's training program that includes driving at night and in other limited-visibility conditions will improve readiness and preserve combat power. 

Editor's note: This article was written shortly before SFC Temple left the CRC for a position at Camp Shelby, MS. We'd like to thank SFC Temple for his many contributions to Countermeasure during his time at the CRC. He may be contacted by e-mail at john.templejr@us.army.mil.

DID YOU KNOW?

NVDs have been around more than 40 years and are categorized by generation. Each substantial change in NVD technology establishes a new generation. Generation 0 was the original night vision system developed by the Army and was used in World War II and the Korean

War. Unfortunately, it didn't take long for hostile armies to duplicate Generation 0 NVDs. Enemy soldiers then used their own NVDs to locate American personnel.



A patrol is a mission. The unit that has the mission organizes the patrol. Unit integrity should be maintained as much as possible while organizing the patrol. For example, when a squad is tasked to conduct a patrol, the squad leader automatically becomes the patrol leader (Field Manual [FM] 7-7, chapter 7-1). The incident described below is one of many mounted combat patrol accidents that resulted in a HMMWV rollover.

The section leader of two M1114 up-armored HMMWVs established a nighttime observation post (OP) to watch over a main road in Iraq. The section's Soldiers frequently drove in the area and were very familiar with the roads and ditches along the various routes. The section leader placed the second HMMWV approximately 70 meters behind him so its crew could provide rear security.

The section leader spotted a suspicious vehicle and alerted the HMMWV behind him. The second HMMWV's driver prepared to follow the section leader's HMMWV, which had turned right onto a paved road. The driver, who was wearing AN-PVS/7 night optical devices (NODs), drove down the dirt road without the vehicle's lights on. His senior occupant wasn't wearing NODs and was busy adjusting his equipment and the radio instead of scanning outside the vehicle.

The second HMMWV's driver turned on the vehicle's lights and began to turn right as the HMMWV reached the paved road. He removed his NODs at the same

time. Suddenly, the passenger-side tires missed the edge of the paved road, and the vehicle began to slide down toward the ditch. The HMMWV rolled over and landed upside down in 5 feet of very cold water. Two Soldiers—the driver and a passenger—drowned.

Patrol leaders must consider several factors before any mission. First, they must analyze the mission and decide what elements and teams are needed. Then, they must select personnel to fill the elements and teams, and also decide what weapons and equipment to provide. One mistake in the accident above was made by the NCO platoon leader. He allowed the accident vehicle's senior occupant and primary driver to go on leave at the same time. An alternate senior occupant and alternate driver took their place, although other primary drivers and senior occupants were available. Leaders must consider the hazards associated with crew assignments and ensure senior occupants know to scan for hazardous road conditions and correct their drivers when needed.

Patrol leaders also must determine the best technique to accomplish the mission (FM 7-7, chapter 7-39). They also should use their unit's normal organization and chain of command, including squad leaders and platoon sergeants, to man the patrol (FM 7-7, chapter 7-2). The elements, planning considerations, control measures, and techniques for mounted patrols are the same, regardless of whether the mission is for combat or reconnaissance.

Finally, commanders and leaders must conduct composite risk assessments and consider all the hazards associated with a





trolling Leadership

MSG MELVINE ALEXANDER

Accident Investigator

U.S. Army Combat Readiness Center

given mission. Once the hazards have been identified, they must develop and implement appropriate control measures. In addition, the platoon leader, platoon and section sergeants, and senior occupant on any patrol

mission must coordinate continuously throughout the planning and preparation phases. Some of the patrol leader's coordination is done by these other leaders. Therefore, the patrol leader should double-check all

preparations to ensure nothing is overlooked.

Leadership is the key to mission success. When leaders set the example and do their jobs properly, Soldiers' lives are saved. There's not a more worthwhile job in the Army! 

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The All-Seeing A

SFC BALDEMAR GONZALES

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U.S. Army Combat Readiness Center

Daytime Airborne operations are full of known and unknown risks. The fall of night, however, introduces a host of other potential problems. Good vision is vital to successful Airborne operations, particularly at night. When paratroopers seize an airfield in the wee hours of morning, they feel intense satisfaction. However, these type operations won't be successful without the watchful eyes of our Airborne Soldiers.

You haven't lived until you've stepped out of a "perfectly good aircraft" into total darkness with more than 100 pounds of equipment strapped to you. Hooah—when's the next jump?! Before you sail off into the deep blue yonder, let's review the five points of performance to demonstrate the importance of eyesight during Airborne operations.

First, a jumper must keep their eyes open and their chin on their chest so they can recognize and react to situations around them. Second, they must inspect the canopy and gain control of their chute. If the risers are twisted, the paratrooper then must compare their rate of descent to that of the other jumpers. Third, jumpers

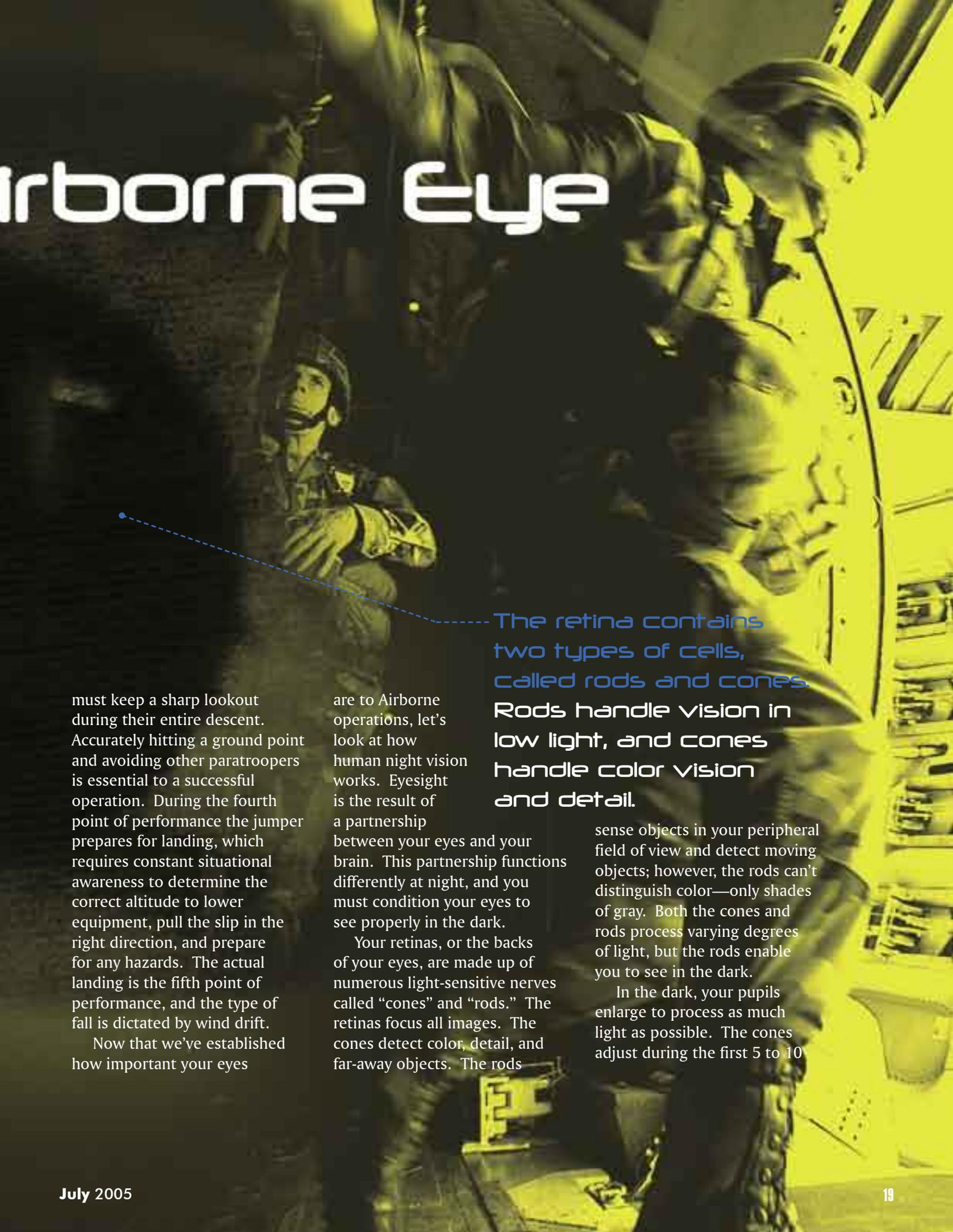
Brain Power

The brain combines the images that each eye sees into one picture.

Basic Anatomy

Although small in size, the eye is a very complex organ. The eye is approximately 1 inch (2.54 cm) wide, 1 inch deep, and 0.9 inches (2.3 cm) tall.

Airborne Eye



must keep a sharp lookout during their entire descent. Accurately hitting a ground point and avoiding other paratroopers is essential to a successful operation. During the fourth point of performance the jumper prepares for landing, which requires constant situational awareness to determine the correct altitude to lower equipment, pull the slip in the right direction, and prepare for any hazards. The actual landing is the fifth point of performance, and the type of fall is dictated by wind drift.

Now that we've established how important your eyes

are to Airborne operations, let's look at how human night vision works. Eyesight is the result of a partnership between your eyes and your brain. This partnership functions differently at night, and you must condition your eyes to see properly in the dark.

Your retinas, or the backs of your eyes, are made up of numerous light-sensitive nerves called "cones" and "rods." The retinas focus all images. The cones detect color, detail, and far-away objects. The rods

The retina contains two types of cells, called rods and cones.

Rods handle vision in low light, and cones handle color vision and detail.

sense objects in your peripheral field of view and detect moving objects; however, the rods can't distinguish color—only shades of gray. Both the cones and rods process varying degrees of light, but the rods enable you to see in the dark.

In the dark, your pupils enlarge to process as much light as possible. The cones adjust during the first 5 to 10

DID YOU KNOW?

Night blindness occurs when severe vitamin A deficiency is present. Vitamin A is necessary to form retinal, which is part of the rhodopsin molecule. When the levels of light-

sensitive molecules are low due to vitamin A deficiency, there might not be enough light at night to permit vision. During daylight, there is enough light stimulation to produce vision despite low levels of retinal.

minutes of darkness, when your eyes are about 100 times more sensitive to light. The rods adjust after about 30 minutes, when your eyes are 100,000 times more sensitive to light. This process is reversed when you enter a lighted area—at first your eyes are dazzled by the light, but they adjust after a few seconds.

You must protect your vision at all times, but especially while conducting night operations because it takes such a long time for your eyes to adjust to the dark. After-images caused by an unusually bright light in the dark can cause you to misjudge or incorrectly identify objects in your path. These type mistakes can be detrimental to the mission, or even fatal.

A technique called off-center viewing can

help prevent after-images and even sharpen your vision during night operations. In the daytime, you see best if you look at an object directly. However, you see better at night if you look at an object's edge. Practice scanning at night to heighten your off-center viewing skills.

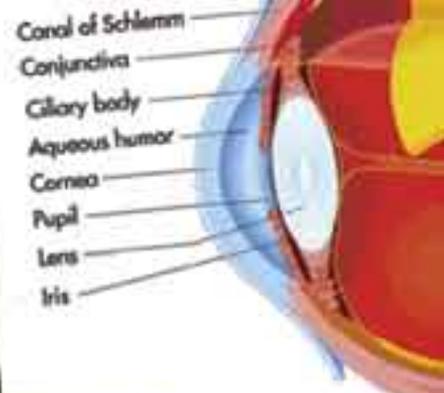
It's important to remember that overall physical health is directly linked to your eyesight. Fatigue, colds, vitamin deficiency, alcohol, stimulants, smoking, or medication can seriously degrade your vision. Keep these factors in mind and take any other precautions to protect your vision. The following tips also can improve the effectiveness of your night vision:

- Adapt your eyes to darkness before an operation and keep them adapted. After

exposure to bright light, it takes about 30 minutes for your eyes to adjust to their maximum efficiency.

- Close one eye when exposed to bright light to help avoid the blinding effect.
- Don't wear sunglasses after sunset.
- Move your eyes more slowly in the dark than in daylight.
- Blink your eyes if they become blurred.
- Concentrate on viewing objects.
- Force your eyes to view off center.
- Check out chapter 4 of Field Manual 21-75, *Combat Skills of the Soldier*, which outlines procedures that can help in night observation. 

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Canal of Schlemm
Conjunctiva
Ciliary body
Aqueous humor
Cornea
Pupil
Lens
Iris



HALFWAY THERE IN FY05



The Army experienced 166 Class A through C Army Motor

JOSEPH MACFADDEN

Engineering Research Analyst
Operations Research and Systems Analysis Division
U.S. Army Combat Readiness Center

Vehicle (AMV) and Army Combat Vehicle (ACV) accidents during the first half of Fiscal Year 2005. These 166 accidents killed 39 Soldiers and cost the Army more than \$14.5 million. Of that total, AMVs accounted for 84 percent (139) of the accidents and 74 percent (29) of the fatalities. ACVs accounted for 16 percent (27) of the accidents and 26 percent (10) of the fatalities.

AMVs

The vast majority of AMV accidents—71 percent (98)—occurred in HMMWVs, HEMTTs, or LMTVs. Accidents involving HEMTTs accounted for 12 percent (16) of accidents and about 14 percent (4) of fatalities. Also reported were two M915 tractor-truck accidents, with one fatality; one destroyed firefighting truck; one fatality in a cargo truck accident; one LMTV M1078 accident, with one fatality; and one fatality in a 5-ton GOV truck.

Well over half these accidents, or 69 total, happened in HMMWVs and accounted for 72 percent (21) of all AMV fatalities. Up-armored M1114s were involved in about 45 percent (31) of the HMMWV accidents. M998s and M1025s accounted for 38 percent, or 19 percent each, of AMV accidents, with 13 per model. Nearly half of all HMMWV accidents were attributed to rollovers (44 percent, or 30 total), and the 17 Soldiers killed in these accidents made up 81 percent of all AMV fatalities. Alarming, rollovers accounted for 30 percent (49) of all reported AMV accidents.

There were 12 reported Class A AMV accidents with 13 fatalities during the first quarter of FY05. This number increased to 15 Class A AMV accidents with 16 fatalities during the second quarter. More than 82 percent of these accidents occurred OCONUS

(21 in Iraq and 2 in Kuwait). Four accidents, or 14 percent, occurred in the United States. Just one accident, accounting for less than 1 percent of the total, happened in Afghanistan. Reportedly, 54 percent (15) of the AMV accidents occurred during the day and 46 percent (13) at night.

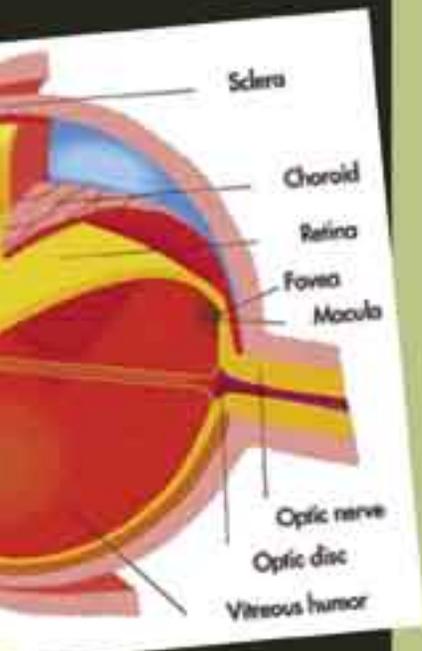
Army Combat Vehicles

Accidents involving Strykers, M1-series tanks, and Bradley Fighting Vehicles accounted for 70 percent (20) of the ACV Class A through C accidents and 90 percent (9) of fatalities. About 74 percent (20) of the ACV accidents and all 9 fatalities occurred in Iraq. Most of these accidents involved collisions with multiple factors. The top three reported factors were collision with objects other than pedestrians; moving forward and colliding with another moving vehicle; and rollovers. The vast majority of these accidents—78 percent (21)—happened during the day, while 22 percent (6) occurred at night.

There were 15 reported ACV Class A through C accidents with 2 fatalities during the first quarter of FY05. During the second quarter, 12 ACV Class A through C accidents with 8 fatalities were reported. As of mid-July 2005, 12 more ACV Class A through C accidents with 5 fatalities had been reported to the Combat Readiness Center.

Information collected from accident reports is essential to predictive analysis and “connecting the dots” on all losses. Reporting accidents and incidents in a timely manner and maintaining good records is vital to this process. This knowledge can save lives in the future!

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Lost



ACV



AMV

Class A (Damage)

■ An M1A1 tank was destroyed by fire. The tank experienced unspecified mechanical problems, and the crew aborted the engine after they smelled diesel fuel. The tank then began to smoke heavily and caught fire. No injuries were reported. The accident occurred during the mid-afternoon.

Class B (Damage)

■ A BFV suffered Class B damage when a smoke grenade exploded and ignited the vehicle's ammunition. The crew had stowed some equipment in the vehicle during pre-mission inspections. No injuries were reported. The accident occurred during the early morning.

■ A BFV suffered Class B damage when it caught fire en route to a warehouse. The crew immediately stopped the vehicle, closed all the hatches, and deployed the fire suppression system. However, the fire continued to burn. No injuries were reported. The accident occurred during the mid-afternoon.

Class A

■ Soldier drowned when the HMMWV he was riding in rolled over into a water-filled ditch. The Soldier was serving as the vehicle's gunner. The Soldiers were on patrol when the road beneath them gave way, causing the HMMWV to overturn into the ditch. The accident occurred during the early afternoon.

■ Three Soldiers were injured when their up-armored HMMWV collided with a civilian vehicle during a black-out drive patrol. The driver of the civilian vehicle was killed. The accident occurred during the early evening.

■ Soldier suffered fatal injuries when the HEMMT she was riding in struck a barrier and overturned. The driver reportedly lost control of the vehicle before hitting the barrier. The deceased Soldier was serving as the truck commander. The accident occurred during the late evening.

■ Soldier was killed when the HMMWV he was driving rolled over. Three other Soldiers suffered minor injuries. The HMMWV was part of a convoy traveling from their field training site back to garrison. The accident occurred during the early evening.

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Class B (Damage)

■ An M106 mortar carrier suffered Class B damage when its engine caught fire. The carrier was on its way to a range at the time of the accident. The crew employed the vehicle's fire extinguisher system and also used hand extinguishers to put out the fire. The accident occurred during the mid-morning.



Personnel Injury

Class A

■ Two Soldiers suffered fatal burns while performing guard duty in an observation tower. The Soldiers were wearing ghillie suits at the time of the accident. The source of the fire was undetermined as of press time. The accident occurred during the late evening.

■ Soldier collapsed and died following the 2-mile run portion of the APFT. The Soldier said he felt lightheaded just before he collapsed and stopped breathing. He was pronounced dead at the local hospital. The accident occurred during the mid-morning.

■ Soldier suffered a permanent total disability when he failed to eject his equipment during a free-fall jump and impacted the ground. The Soldier suffered

injuries that reportedly will render him quadriplegic. The accident occurred during the mid-afternoon.

Class B

■ Soldier's left-hand fingers were amputated when the grenade he was demonstrating detonated immediately upon activation. The accident occurred during the mid-morning.

■ Parts of a Soldier's hand and fingers were amputated when his hand was crushed between the leg and underside of a flatbed trailer. The Soldier was lowering the support leg of the trailer at the time of the accident. The accident occurred during the early morning.

■ Soldier's finger was amputated when he jumped from an LMTV and caught his hand on the vehicle. The Soldier was preparing the vehicle for add-on armor. The accident occurred during the late afternoon.

Class C

■ Soldier was injured when he was struck by 9 mm simulation ammunition just above his right eye during a MOUT training exercise. The Soldier had removed his

safety goggles to clear fog from them during a lull in the fighting. The accident occurred during the mid-morning.

■ Soldier injured his knee while conducting PMCS on an M1070 HET. The Soldier, who'd recently had surgery on his knee, lost his balance and fell off the back of the HET. He was treated and released from the troop medical center.



Other

Class B (Damage)

■ Fire destroyed 31 pallets of Class VIII materials and damaged a supply building. The fire was caused by a generator that overheated. Estimated cost of damage was \$550,000. The accident occurred during the late evening.

■ An H-6 explosive detonated while descending into the kettle on the downcomer. The downcomer was destroyed, 12 to 15 acres of land were burned, and hazardous materials left in the surrounding area required cleanup. Estimated cost of damage was \$247,000. The accident occurred during the late morning.

WHAT was he THINKING?

Soldier suffered second- and third-degree burns to his hands when his Kevlar helmet caught fire. The Soldier was lighting a cigarette and bent over to shield his lighter from the wind when a strip of burlap from the helmet blew into the flame and caught fire. The Soldier was burned when he removed his helmet. The accident occurred during the mid-afternoon.



VIEW SCANNING FINDER

The view through NVDs can be a lot like looking down a tunnel. Your normal field of view is almost 190 degrees—but that's cut down to 40 degrees with NVDs. That side—or “peripheral”—vision you're accustomed to, and from which you often see dangers, just isn't there. To adjust, you must constantly turn your head to scan for the dangers on either side of you that you can't see in your narrow field of view.

- Formal scan or search patterns aren't necessary. After relatively little training, search performance is better with “free” viewing.
- Users should adjust their vehicle's speed to fit their location. Typically, NVG users tend to scan more slowly the faster they are traveling because it takes longer to identify fine details. Because of that, vehicle speed should be reduced when driving in congested areas and when traversing rough terrain.
- The first priority when scanning should be to identify hazards. Drivers should identify objects as far away as possible and monitor them until the vehicle is clear. HOWEVER, it's important for drivers not to fixate on an object.
- To avoid becoming fixated, NVG users should not look at any object for more than a second or two.
- The best resolution is in the center of the NVG tube, so off-center viewing should not be used.
- NVG users should not turn their heads too quickly while scanning. Sudden movement can lead to disorientation.
- Scanning tends to slow down or even stop during emergency, unfamiliar, or stressful situations and also when the person is tired.
- All NVG users in a vehicle need to help the driver identify any hazards – especially those on the right shoulder of the road.



ARMY GROUND RISK-MANAGEMENT INFORMATION

Countermeasure

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AUGUST 2005



Going Somewhere?



stay
on the
edge

CONTENTS

- 2** Going Somewhere?
- 6** Building Battlemind
- 9** Does Your Helmet Fit?
- 10** Got Sleep?
- 11** A Cure for Negligent Discharges?
- 12** Leave It There!
- 14** Going Home
- 16** Flash, Bang, Burn!
- 18** Is There Anybody Downrange?
- 19** From the PLR Files
UXO and Explosives
- 20** Accident Briefs
Seatbelt Success Stories
What Were They Thinking?

features



on the web

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OPERATIONS DIVISION
G3, U.S. Army Combat Readiness Center

Thousands of Soldiers are either in or on their way to Iraq or Afghanistan—some for the second or third time. If you've been there before, you're familiar with the many different problems associated with living and fighting in the desert. If it's your first deployment, consider yourself fortunate that recent experience has provided numerous lessons learned so you don't have to figure things out the hard way.

You've already trained for the fight. It's just a matter of getting there now. Highlighted in the paragraphs below are certain unsafe hazards that have caused accidents in the past, followed by control measures. Remember that safety, survival, knowledge, and common-sense thinking will lead to mission accomplishment and bring you home safe.

Hazard: Individuals abandon safety in an effort to establish "combat posture."

- Ensure all personnel know and use the 5-Step Risk Management Process and Composite Risk Management in all operations.
- Establish a command climate from the outset that promotes safety. Begin by establishing a safety

network and designating safety personnel.

- Train to standard, enforce standards, and require all personnel to perform to standard in all operations.
- Ensure leaders complete the Commanders' Safety Course.

Hazard: Unsafe loading and shipment. Examples of violations include failure to identify

and mark containers, mixing Class A explosives with incompatible Class C ammunition, corrosives improperly certified and mixed with unidentified hazardous lubricants, MRE rations and undocumented insecticides on the same pallet, lack of MILSTAMP advanced cargo clearance, improper storage, and improper security.

- Train load teams to standard.
- Use Quality Assurance Specialist Ammunition Surveillance support.
- Nest all

equipment and supplies inside vehicles to minimize damage from rough handling at ports and on the high seas.

- Comply with Air Force Regulation 71-4 in airlift of hazardous materials and with guidelines in Technical Manual 38-250 (11 December 2001).
- Ensure vehicles have required tie-down shackles.
- Keep personnel from under equipment being lifted aboard ship.
- Coordinate and understand requirements for topping off vehicles before shipment.
- Coordinate port of embarkation shipping requirements for bulk fuel and petroleum, oil, and lubricants tank transporters through the servicing installation transportation office.
- Ensure that vehicle master switches are turned off immediately after loading.

Hazard: Chemical agent resistant coating (CARC) was used to repaint vehicles for deployment.

- Ensure CARC painting is completed in accordance with established requirements.
- Caution users that liquid CARC is flammable.

- Caution users that CARC is toxic and exposure to vapors or dust can lead to respiratory problems. It also can cause cancer.
- Ensure Soldiers wear proper personal protective equipment.

Hazard: Air travel caused dehydration and fatigue.

- Encourage hydration before and during air travel with juices and water, not caffeine or coffee.
- Ensure arriving troops are given the opportunity to rehydrate and rest before being assigned duties.
- Once on the ground, ensure Soldiers have sunscreen, sunglasses, and dust goggles and that everyone knows where water is available.

Hazard: Lack of depth perception in the desert.

- Stress that lack of contrast in terrain features reduces depth perception.
- Ensure vehicle drivers follow proper ground-guide procedures.

Hazard: Soldiers are performing strenuous manual labor.

- In general, 2 weeks are required to adjust to the humidity and extreme heat (acclimatization).
- Remind Soldiers to avoid

strains and lifting injuries by using proper lifting techniques (lift with the legs, not the back) and by getting help with heavy loads.

Hazard: Vehicle operations result in accidents.

- Ensure all primary and secondary drivers have the opportunity to experience driving armored tactical vehicles before arriving in theater and beginning actual combat missions.
- Ensure drivers and vehicle commanders understand the responsibilities for safe vehicle operations (e.g., establishing and enforcing safe vehicle operations based on personnel, training, terrain, environment, and equipment). Army Regulation 600-55, chapter 1-4, outlines these responsibilities.
- Ensure drivers are trained and licensed on the vehicle they are operating (check Optional Form 346).
- Ensure drivers drive defensively.
- Remind drivers to clear all sides before turning.
- Remind drivers not to allow passengers to ride on the outside of any vehicle unless such action is command directed.
- Caution drivers to use extra care when operating off improved



roads. Sand dunes drop off abruptly on the leeward side.

- Check loads to ensure cargo is secured correctly. Stress even load distribution, especially when traveling over sandy terrain.

- Train Soldiers on rollover procedures in accordance with Graphic Training Aid 55-03-030 and practice rollover drills.

- Enforce seatbelt and Kevlar requirements.

- Establish and enforce safe convoy and catch-up speeds for expected road and environmental conditions and include in the pre-march briefing. Remind drivers that driving too fast for conditions is a primary cause of accidents.

- Train drivers in the correct use of ground guides and train all personnel in how to perform as ground guides. Remind drivers to always use two ground guides while backing.

- Recon routes for mountain passes or any sharp turn that might require special control measures, as well as bridges or underpasses that might be too low for large vehicles.

- Train all drivers in their vehicle's correct braking procedures.

- Train crews in vehicle fire drills and practice them.

- Caution drivers that roads, bridges, and overpasses might not be posted with weight or height restrictions.

- Require safety briefings for senior occupants and vehicle drivers.

- Require the use of 10-foot extension hoses and tire cages for inflating and deflating split-rim tires.

Hazard: Not enough attention to weapons safety.

- Review fratricide prevention procedures.

- Remind Soldiers to handle all weapons as if they're loaded.

- Caution Soldiers not to play with knives.

- Don't allow target practice and blank ammunition to be mixed.

- Caution Soldiers not to burn ammunition boxes and to handle them with gloves.

- Execute drills on rules of engagement.

Hazard: Unsafe fuel handling and burning.

- Use Field Manual 21-10 for guidance on proper fuel mixtures.

- Ensure fuel isn't used as a substitute for cleaning solvents.

- Prohibit burning of aerosol cans and unopened MRE

packages—they will explode.

- Train Soldiers in the process of burning human waste.

Hazard: Eye exposure to sunlight degrades night vision.

- Enforce wear of the Ballistic Laser Protection System (BLPS). The sunglasses will reduce the adverse effects of sunlight on night vision. The sunglasses and clear lens also will help prevent eye injury.

- If BLPS aren't available, ensure Soldiers wear Wiley X sunglasses during the day to prevent night vision degradation.

For more information on general deployment safety, check out these Web sites:

- <https://crc.army.mil>
- <http://call.army.mil>
- <http://chppm-www.apgea.army.mil/>
- <http://tri.army.mil>
- <http://deploymentlink.osd.mil/>
- www.hqmc.usmc.mil/safety.nsf/

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BUILDING BATTLEMIND

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Battlemind is a Soldier's inner strength to face adversity, fear, and hardship during combat with confidence and resolution. It's the will to persevere and win. Battlemind contributes to the Soldier's will and spirit to fight and win in combat, thereby reducing combat stress reactions.

Soldiers are confronted with certain realities in combat operations that can't be replicated in the training environment. Combat is sudden, intense, and life threatening. Their job is to kill the enemy. Innocent women and children often are killed in combat. No Soldier knows how they'll perform in combat until the moment arrives. Although leaders can't fully simulate these factors before deployment, they can prepare their Soldiers for the mental aspects of combat before they arrive in theater.

Fear in combat is common.

More than two-thirds of Silver Star recipients reported increased fear as the battle progressed. Common symptoms of fear include violent shaking or trembling, loss of bladder control, weakness, cold sweats, and vomiting. Fear and anxiety are reduced in combat when Soldiers engage in actions used during training.

Leaders must drill and train

their Soldiers in the specific actions to use in combat conditions—tough training is the best preparation. Soldiers must have sufficient physical and mental “reset” time. Admitting and joking about fear will release tension. Fear is NOT a mental disorder; remember that even heroes feel fear.

Unit members will be injured and killed.

More than 1,800 service members have been killed and almost 14,000 wounded since Operations Enduring Freedom (OEF) and Iraqi Freedom (OIF) began. Studies have shown that Soldiers are angry when leaders fail to show they care regarding combat experiences, especially those involving injury or death.

To help, leaders must ensure their Soldiers don't assume unnecessary risks on missions. Leader-led after-action reviews and mental health debriefings from mental health professionals or chaplains can help relieve stress and anger.



When a Soldier is killed, leaders should conduct memorial services with the utmost respect and dignity. Leaders also should talk to their Soldiers personally about critical incidents. They won't care what their leaders know until they know their leaders care.

Combat impacts every Soldier mentally and emotionally.

Combat stress

reactions are both common and normal. Experiences such as nightmares, flashbacks, anger, and avoidance of expressing painful feelings might lead Soldiers to fear they are "going crazy." However, more than 90 percent of Soldiers who receive combat stress support are returned to duty. The intensity of reactions typically

lessen within 60 to 90 days following redeployment, but it might take longer for a Soldier to recover fully.

One useful tool for leaders is buddy-aid mental health training. This process allows participants to assist other Soldiers in coping with the stress of combat. Following redeployment, leaders must watch their Soldiers and offer help to anyone struggling. Restoring mental fitness after combat sustains professional warrior discipline, toughness, strength, and proficiency. Leaders also must let their Soldiers know that combat stress reactions are normal responses to trauma.

Soldiers are afraid to admit they have a mental health problem.

Post-traumatic stress disorder (PTSD) symptoms are common after combat—10 to 20 percent

of Soldiers report some symptoms after coming home. Combat stress often leads to excessive alcohol use and aggression. It's important not to ignore these symptoms because earlier treatment leads to faster recovery. Admitting a mental health problem is not a character flaw.

Leaders can help by establishing a command climate where they acknowledge their Soldiers are under stress and might need help. In theater, collocating mental health assets with the battalion aid station or troop medical center might encourage more Soldiers to seek help. A mental health outreach program also should be provided to each battalion. More information on PTSD can be found on the National Center for Post-Traumatic Stress Disorder

Web site at <http://www.ncptsd.org/index.html>.

Soldiers frequently perceive failures in leadership.

Good leadership is linked to higher Soldier morale and cohesion, better combat performance, and fewer mental health problems. However, Soldiers have reported that leaders frequently engage in actions to enhance their own career and personal well-being—not that of their troops. Soldiers also have complained that leaders often fail to exhibit clear thinking and reasonable action under stress. Courage and valor, never personal gain, are the measures of Soldier and leader performance.

Leaders should allow subordinates to seek clarification of orders or policies without responding defensively or considering the Soldier disloyal. Leaders do have the right, however, to remove, reassign, or demote subordinates who fail to measure up after being given the means and opportunities to succeed.

Breakdowns in communication are common.

Soldiers have reported that deployment policies often are inconsistently applied. Soldiers also have complained that they frequently don't know the status of wounded comrades and will resort to rumors if their leaders don't tell them the facts.

Leaders must keep their Soldiers informed. Saying "I don't know" is better than not telling them anything. Command policies and views on all matters should be expressed clearly and made known throughout the ranks. Leaders also should let their Soldiers know the status of wounded evacuees and disseminate news of their and other units' successes. Effective communication is a leadership responsibility.

Deployments place a tremendous strain on families.

Since OIF began in March 2003, nearly one-fifth of all Soldiers deployed to Iraq have reported marital concerns or problems. Soldiers have said their marital satisfaction declined after they deployed to OIF. They also generally are dissatisfied with their units' family readiness group (FRG) and rear detachment.

Leaders shouldn't allow family problems to go unanswered. It might help to assign at least one staff member to serve as an ombudsman or expediter of family problems. Deployed Soldiers also appreciate formal recognition of special family occasions such as births and graduations. Leaders also should address any reported problems with the FRG or rear detachment to ensure timely action.

The combat environment is harsh and demanding.

The combat environment and its heat, noise, and lack of privacy takes a toll on Soldiers. Sleep is a big issue in theater. Soldier performance progressively deteriorates with less than 8 hours

of sleep daily. Soldiers also are extremely sensitive to perceived inequalities in the distribution of Morale, Welfare and Recreation (MWR) resources.

Leaders must ensure their Soldiers get adequate rest, hydration, and other force-protection measures. They must be aware of their Soldiers' physical condition and sleep patterns and insist that physical training is maintained during the deployment. Leaders also must insist on a fair distribution of MWR resources and prevent double standards among officers, NCOs, and junior enlisted Soldiers.

Unit cohesion and team stability are disrupted by combat.

Soldiers function best in combat with those they know. These bonds, however, will be disrupted by combat deaths, medical evacuations, emergency leave, and other factors. Changes in task organization and forward operating base locations also impact unit cohesion.

Leaders can lessen these impacts by maintaining unit integrity to the greatest extent possible. Units, not individual Soldiers, should be rotated during combat. Conducting team-building exercises throughout the deployment also might help. Finally, all new Soldiers should be welcomed and integrated into the unit immediately.

Combat poses moral and ethical challenges.

Combat exposes the reality of death—something many Soldiers will be exposed to for the first time. These situations test the character of both leaders and Soldiers. Every Soldier needs to come home with a war story he can live with.

Leaders should reward and recognize their Soldiers on a regular basis for their personal sacrifices and tell them when they've done a good job. Harassment and mistreatment of Soldiers should never be allowed. Leaders also must discuss the moral implications of each Soldier's behavior in combat and how individual sacrifice contributes to America's enduring fight for freedom.

Conclusion

Combat isn't easy on any Soldier. Leaders must keep their Soldiers ready—both physically and mentally—for this fight and future conflicts. Use the resources available and make sure your Soldiers are prepared for what they'll face in theater and back home.

Editor's note: This article originally was published in the April 2005 NCO Journal and was adapted for publication in Countermeasure. 

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Does Your Helmet Fit?

Receive

Armor System, Ground Troops (PASGT) helmet or the Advanced Combat Helmet (ACH). Soldiers whose helmets are fitted poorly or worn improperly
Army Tank-Automotive Command issued Safety of Use Message 05-006 outlining proper wear and fit of these two helmets.

ersonnel
, the U.S.

PASGT Proper Wear & Adjustment

GTA 07-08-001

If the PASGT is too tight or loose:

- Adjust headband in small increments.
- Reposition headband on the web strap.
- Adjust headband clip in area that feels tight.
- Try different shell size.

If the PASGT is too high:

- Judge at brow and ear opening.
- Adjust drawing tab toward helmet crown.
- Try next larger shell size.

If the PASGT is too low:

- Adjust crown directing tab toward rim.
- Try next smaller shell size.

Parachutist helmet modifications:

- Retention strap hook-pile tape faces rear.
- Check pads for tears and compressibility.

References:

PASGT: Natick PAM 70-2
ACH: TM 10-8470-204-10
<https://www.peosoldier.army.mil>

Prepared by: U.S. Army Infantry School
Fort Benning, GA
1 June 2005



WARNING! Risk of serious injury or death is greater with improper helmet wear.

The PASGT helmet should be fitted in accordance with the instructions in Natick PAM 70-2 by measuring head length, width, and circumference. A properly fitted PASGT helmet should have a minimum 1/2-inch space between the head and the helmet. A properly sized and fitted helmet will sit level on the Soldier's head, with the lower edge of the front rim being set at the top of the eyebrow and level to the ground or slightly inclined with respect to the ground. When tightened, the chin strap will be centered with equal distances on each side between the chin cup and mounting location on the helmet. The bottom of the PASGT should come to the bottom of the Soldier's ear.

ACH Proper Wear & Adjustment

GTA 07-08-001

A Soldier's ACH size might not be the same as their previously issued PASGT helmet. For example, the front rim of the ACH rests about 1/2-inch higher than the PASGT. The ACH should be fitted in accordance with the instructions in Technical Manual (TM) 10-8470-204-10 by measuring head length, width, and circumference.

The ACH should fit so the front rim is approximately 1/2-inch above the eyebrows. A properly sized and fitted ACH will sit level on the Soldier's head. While looking upward by only moving his eyes, the wearer should be able to just see the rim's edge. All ACHs should be fitted with the thinner size 6 crown pad, which should touch the top of the wearer's head. Helmet fit can be modified by adjusting the pad positions, tightening the retention straps, or exchanging the helmet shell for a larger size. The bottom of the ACH should rest at the top of the Soldier's ear canal opening.

If the ACH is too tight:

- Rearrange side pads in a vertical, diagonal, or horizontal configuration.
- Remove front or back pads and rearrange side pads.
- Create space in the area that feels tight.
- Try next smaller pad size.
- Try next larger shell size.

If the ACH is too loose or unstable:

- Rearrange side pads in a vertical, diagonal, or horizontal configuration.
- Tighten chin strap retention system.
- Increase number of pads.
- Try next larger pad size.
- Try next smaller shell size.

If the ACH is too high:

- Judge at brow and ear. Soldier should see rim of helmet when looking up. Portion of ear above ear canal is covered.
- Try next smaller sized pad set.
- Try next larger shell size.

If the ACH is too low:

- Try next larger sized pad set.
- Try next smaller shell size.



WARNING! Risk of serious injury or death is greater with improper helmet wear.

Other information

Keep in mind that both helmets should be adjusted accordingly when other items such as headsets, cold weather caps, or nuclear, biological, and chemical masks are worn.
can be found online at <https://www.peosoldier.army.mil>.

Comments regarding this article may be directed to the editor at (334) 255-1218, DSN 558-1218, or by e-mail at julie.shelley@us.army.mil.



GO T SLEEP?

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Sleep—like food, water, and air—is a necessity, not a luxury. In the combat environment, however, sleep is taken for granted all too often. When you don't get enough sleep, performance suffers and everyone is put at risk.

The effects of sleep deprivation sneak up on you. When you don't get enough sleep, your judgment is affected in many ways. You can't really gauge the impact those sleepless days and nights have on your abilities or the decrease in your performance. The following scenarios illustrate just a few examples of accidents that can result from sleep deprivation:

- Drivers falling asleep at the wheel, causing vehicle accidents and rollovers
- Medical personnel administering the

wrong type or wrong dose of medicine

- Soldiers failing to recognize or reacting too slowly to a threat
- Soldiers transposing digits while entering coordinates into a fire control system

A sleep-deprived Soldier can make bad tactical decisions. The bottom line is that sleep deprivation can get you and your buddies killed!

Sleep deprivation and performance

The longer you go without sleep, the poorer your performance on any number of tasks. Your performance begins to suffer as soon as you start losing sleep. If you're struggling to stay awake, your ability to function is already impaired.

In general, you can sustain normal performance without noticeable

impairment for about 16 hours after you wake up. After 16 hours, however, you suffer a noticeable decrease in performance. If you're consistently awake for 24 hours, your reaction time is worse than if you were legally intoxicated. After 28 hours without sleep your performance is significantly impaired, and the likelihood of you making a critical error rises to an unacceptable level.

Sleep management

To sustain performance over the long haul you need at least 6, and preferably 7 to 8, hours of sleep out of every 24 hours. Your performance will degrade over time with less than 6 hours of sleep. Getting 4 to 6 hours of sleep every 24 hours will keep you in

the "amber zone," where the risk for mission-critical errors is increased but still at acceptable levels, for several weeks. You'll be in the "red zone," where the risk for mission-critical errors is unacceptably high, if you get less than 4 hours of sleep.

Keep in mind that sleep doesn't have to be continuous. Although uninterrupted sleep time is preferred, several shorter sleep periods that add up to 6 to 8 hours likely will be sufficient.

DID YOU KNOW

Your brain creates dreams through random electrical activity. About every 90 minutes your brain stem sends electrical impulses throughout your brain in no particular order or fashion. The analytic portion of your brain—the forebrain—desperately tries to make sense of these signals. This haphazard activity is why your dreams seem so disjointed.

A Cure for Negligent Discharges?



CW2 ROBERT HAUBER JR.
Safety Officer
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The combat environment leads to human error, whether the primary factor is fatigue, preoccupation with something other than the mission, or a simple failure to stay alert. Every day Soldiers are placed in a multitude of situations that require attention to detail to make sure their fellow Soldiers aren't injured, maimed, or killed. Efforts to eliminate factors that hurt Soldiers are vital links in the chain of accident prevention.

Soldiers gearing up for a combat deployment must handle their weapons on a daily basis, and those weapons never leave their side when they get to theater. Yet many of these Soldiers are ill-equipped to make the transition to 24-hour warfighter. The rash of negligent discharge incidents since the beginning of the War on Terror illustrates the importance of constant weapons status awareness. Most of the accidental discharges in theater to date have occurred in tents or in the dining facilities at forward operating bases.

All Soldiers, whether they're training on a range or performing a combat mission in theater, must be conscious in preventing negligent discharges. However, Soldiers must also be provided the proper tools to make this task more realistic. The Indicator, Safety Rifle (NSN 1005-00-418-8557) is currently available through the Army supply system. This simple piece of plastic can differentiate between a "safe" weapon and a deadly one.

The Indicator, Safety Rifle (which is compatible with all M-16 and M-249 weapons) is inserted into a weapon's chamber any time the weapon status is green or amber. The indicator keeps the bolt away from the breech and protrudes

out the gun's side at the dust cover. Therefore, it's impossible for a round to be in the chamber with the indicator installed. Any Soldier can tell the weapon is safe just by glancing at it. The indicator should be installed when Soldiers enter any area where the weapons status is not red.

Many Soldiers deploying to Iraq and Afghanistan aren't used to carrying ammunition, but it's a reality in combat. In fact, many Soldiers involved in negligent discharge incidents have said they simply weren't used to carrying ammunition. In addition to using the Indicator, Safety Rifle, it's also recommended that Soldiers at the pre-mobilization site carry a blank clip in their weapons. This exercise will get Soldiers in the habit of dropping the clip before they pull the charging handle back.

Negligent discharges don't have to happen. Training and the right equipment can save Soldiers' lives and preserve combat readiness. Call your supply chain today to procure this valuable piece of equipment!

Editor's note: While there is no "magic bullet" to cure negligent discharges, individual Soldiers can help prevent such accidents by following the proper clearing procedures for their type weapon. Check out the "Weapons Handling Procedures" guide on the Combat Readiness Center's Web site at https://crc.army.mil/MediaAndPubs/magazines/countermeasure/2004_issues/safeweaponpullout.pdf, which outlines correct clearing procedures for currently issued individual weapons. The guide also is available in hard copy in the July 2004 Countermeasure.

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Tips for sleep management

Tips for Soldiers

- Don't sleep in areas with regular activity or in or under any vehicle.
- When sleeping, minimize exposure to noise and light by wearing earplugs and blackout shades.
- Avoid over-the-counter "sleep aids," which cause grogginess, not actual sleep.
- Sleep whenever possible; even a little sleep is better than none. Several "catnaps" can add up quickly.

Tips for leaders

- Develop a unit sleep management program that allows your Soldiers at least 6, and preferably 7 to 8, hours of sleep every 24 hours.
- Soldiers trying to sleep during the day require longer or more frequent opportunities to sleep. These extended periods compensate for the body's normal reaction to sleep cycle disruption.
- Never put your Soldiers in a position where they must choose between sleep and something else they'd enjoy.
- Arrange sleep schedules so your Soldiers can sleep at consistent times.

Caffeine

If sleep loss can't be avoided, use caffeine. Drink the equivalent of two cups of coffee (about 200 mg of caffeine) every 2 to 4 hours. This amount will help you maintain your performance even in periods of moderate sleep loss. Keep in mind, however, that caffeine is a temporary solution to the problem and too much can make you jittery.

You must have adequate sleep to execute your missions accurately and safely. Too many sleepless days and nights and you'll accumulate a sleep debt that must be paid. Now go get some rest!

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I've seen all kinds of things as officer in charge of the 42nd Infantry Division liaison cell in Camp Doha, Kuwait. Every day I see Soldiers attempting to bring illegal and dangerous souvenirs home from Iraq. This article takes a humorous look at these "mementos" of wartime service, but I hope you'll see this is a serious subject.

So, you're about to leave the combat zone for home. Your tour is over, and you want a souvenir of your time in the desert. But maybe you're not sure what constitutes an "appropriate" memento from Operation Enduring or Iraqi Freedom. That's why I'm here—to help you decide!

Part of my job is to brief Soldiers on what they can and can't bring back from Southwest Asia. I'll share these tips with you now. First, your keepsake must be tasteful, safe, and legal. The military customs inspector at your redeployment camp determines what's safe and legal; your spouse back home has the final say on

Leave

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taste. While shopping for souvenirs, think about what your wife or husband will say (or scream). That life-sized brass camel statue that looked so attractive in the bazaar will get through customs but most likely won't pass inspection with the "Household 06." If you can imagine your spouse exclaiming, "There's no way you're bringing that thing into my house," you might want to reconsider your selection.

All kidding aside, there are some "trophy" items you simply cannot bring back to the U.S. These banned items might seem obvious to anyone blessed with common sense, but as we all know, common sense really isn't that common. That's why friendly customs inspectors search your stuff before you go home. To make their jobs easier and speed up your return home, here's a partial list of contraband that can't

be brought back from overseas.

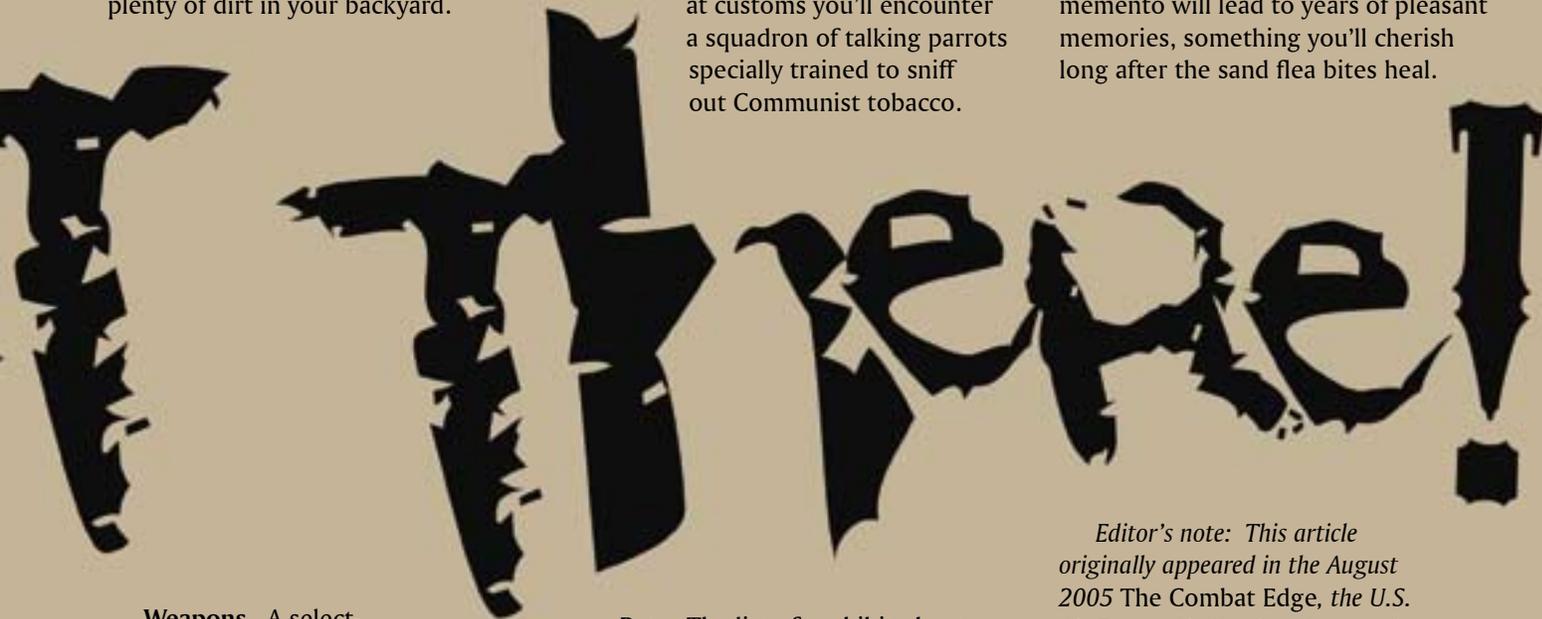
Sand. Southwest Asia currently is experiencing a critical shortage of sand—not even one grain can be spared! Besides, there’s a real threat that the spirit of an ancient warrior king, like the one in “The Mummy” movies, lives in the sand and will hurt you bad. The king’s spirit isn’t the only thing living in the sand that can hurt you either. Just imagine all those microorganisms that aren’t organic to U.S. soil. Trust me, there’s already plenty of dirt in your backyard.

to anyone challenged enough to play around with such stuff. Just because an explosive hasn’t gone off doesn’t mean it won’t. It’s easy—keep your hands to yourself and keep your hands! But don’t worry if you “accidentally” pack something you shouldn’t. The big bomb-sniffing dogs at the customs inspection will find it.

Cuban cigars. Anything that tastes this good has to be either illegal or bad for you. Cuban cigars are both. Enjoy your Havanas in Iraq, because at customs you’ll encounter a squadron of talking parrots specially trained to sniff out Communist tobacco.

in plastic, there’s no earthly reason why you need a sand viper. And admit it—the whole time you were deployed, all you thought about was home. The desert is their home. If you bring a pet back to the U.S., it’ll spend the rest of its life missing home. Is that what you really want?

Hopefully these hints will help you find the perfect—yet safe, appropriate, and tasteful—souvenir that’ll pass a customs search with flying colors. Selecting the right memento will lead to years of pleasant memories, something you’ll cherish long after the sand flea bites heal.



Weapons. A select-fire assault rifle is an excellent and even necessary item to have in the combat zone, but not so much back home. Your neighbors might be impressed with your new AK-47, but local law enforcement authorities likely will be even more impressed. They’ll probably want to talk to you about how you got such a powerful weapon—maybe even through a bullhorn!

Ammunition, explosives, and unexploded ordnance (UXO). Of all the things that can be used as a paperweight, the hand grenade is a poor choice. It’ll roll all over your desk and maybe even detonate without notice. The term “dud” is commonly used to identify UXO but also applies

Pets. The list of prohibited pets includes grasshoppers, lizards, camel spiders, scorpions, snakes, and anything else that can make you say “ouch!” Whether they’re dead or alive, squished, stuffed, or encased

Editor’s note: This article originally appeared in the August 2005 The Combat Edge, the U.S. Air Force’s Air Combat Command safety publication. It was adapted for use in Countermeasure.

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DID YOU KNOW?



Camel spiders live in arid regions all over the world—even the southwestern United States, where there are more than 50 species! These creatures are arachnids, like spiders and scorpions, but they’re scientifically classified as solpugids. Camel spiders have gained a lot of notoriety since the beginning

of Operation Iraqi Freedom, when various e-mailed photographs and horror stories began circulating around the Internet. Camel spiders aren’t venomous, but they’re extremely aggressive and pack a mean bite. They rarely attack humans but, if you see one, don’t play with it—and don’t bring one home!

GOING

Thousands of Soldiers are deploying to the Middle East, and the duration of these deployments most likely will stay at a year or longer. Being away from the people you love for such a long time can create issues that won't be fully apparent until you return home. Although these strains might be evident during R&R leave, they usually won't be fully obvious until you're redeployed. Your relationship with your spouse and children probably will be most affected, but you also might experience difficulty with other social relationships.

The primary factor to consider on your return is the pre-deployment status of your relationship. If the relationship wasn't good before the deployment, it most likely won't have improved any when you get back. Don't think you can simply start over when you redeploy.

Your relationship with your children probably will be most affected. The extent of change depends on several variables, and each child's age is the best determining factor for reintegration. Babies typically are least impacted and the quickest to recover, although many don't recognize the deployed parent. Teenagers typically don't show their true feelings about the returning parent, and it isn't easy to determine the deployment's effects on younger adolescents. Don't try to force yourself back into their lives; instead, give them time and space to adjust.

NEED HELP?

Adjusting to life back home after a lengthy, intense deployment might prove difficult for many Soldiers and their loved ones. To find out more about available redeployment resources, visit the Army OneSource Web site at www.armyonesource.com or call their toll-free number, (800) 464-8107.

Slowly work your way back into your pre-deployment parenting role. Taking an extended vacation with your family is a good idea, but delay leaving for a week or two. Your role in the family will become more stable during these extra days, ensuring a more enjoyable time for everyone when you do get away.

Your spouse essentially has been a single parent during your deployment. They managed everything from household chores to finances while you were away and might be reluctant to give up control on many issues. You must work with your spouse to determine your new role, but make sure you let them know how you feel.

Counseling might be required to resolve these types of issues, and options are available through several different channels. Your chaplain or family readiness group will have information to get you started. Don't be embarrassed about seeking counseling. Some people need a springboard for their thoughts or just an outside observer to put things in perspective. Don't wait to request help, because by then it might be too late to save the relationship.

Your sexual relationship with your spouse might be strained at first. Your partner might feel abandoned; remember they've been alone a long time. Time and rebuilding your base relationship will help alleviate some of these feelings. Seek counseling if things don't get better over time.

It will be easiest for you to re-establish relationships with your other family members and friends. These people will probably give you the biggest welcome home. Some Soldiers might feel the welcome is undeserved, however, if they were deployed in a combat support role and never saw direct fighting. Even if you feel you don't deserve the attention, try to remain positive. Your friends and relatives will want to celebrate that you've made it home safe. Throwing a welcome-home party will make them feel good after the time they've spent worrying.

If you're a Reserve Component Soldier, remember you'll have to re-establish work relations with your civilian employer. Be honest when it comes to terminal leave and your return-to-work date. It's also important to know your rights before you go back to work. Your local Employee Support of the Guard and Reserve representative will see you through any problems.

Rebuilding your relationships will take time when you get back home. Realize you're not the only one having problems, and talk to other Soldiers in the same situation to see what's worked for them. Be prepared for these changes, but also be happy you're back with the people who matter most.

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HOME

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Flash, Bang, Burn!

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A foreign national engineer element supporting coalition forces in theater was tasked to destroy various captured enemy ammunition (CEA). It was a hot August afternoon—temperatures peaked at around 115 °F. The ammunition included 18 SA-7 missiles, unfuzed 60 mm mortar rounds, 14.5 mm and .50 caliber ammunition, RKG-3M Soviet hand grenades, and propellant bags from artillery rounds.

These munitions had been stored in an open pit and exposed to direct sunlight for an undetermined amount of time. The engineers loaded the CEA into a HMMWV and drove to a demolition site, where they began to download the munitions by hand. They placed the CEA into a pile within 2 meters of the HMMWV.

The engineers didn't notice that an unpackaged bag of double-base propellant had torn open and spilled on and around the other munitions. Within minutes, the spilled propellant flashed and ignited the remaining CEA



“CEA operations often are being conducted by personnel who lack formalized training and certifications.”

on the ground and in the HMMWV. Four engineers suffered various burn injuries, and the HMMWV was destroyed. The foreign engineers learned the hard way that double-base propellants ignite easily, have a high burn rate, and can self-ignite under high temperatures.

All CEA operations—including collection, transportation, and destruction—are inherently dangerous and pose a unique challenge for our forces. When you conduct a CEA operation, you're accepting the risks involved. Commanders must use the risk management process and plan these type operations carefully to mitigate the hazards.

Only trained personnel should handle CEA; however, many of these munitions are being encountered in theater and the number of trained personnel is limited. Therefore, CEA operations often are being conducted by personnel who lack formalized training and certifications. To minimize the risk, take the following precautions:

- Improvised explosive devices (IEDs) and unexploded ordnance (UXO) are not classified as CEA. Don't touch or move a suspected IED or UXO. Immediately mark the site and report the location to Explosive Ordnance Disposal (EOD) personnel through your command channels.

- EOD personnel should be involved in both the planning and execution phases of CEA operations. EOD personnel can reduce the hazards of these operations by providing an initial assessment to determine the hazard level and by destroying all items deemed unsafe for transportation or storage.

- Do not handle unpackaged munitions until a positive risk category is determined. Before this time, any assessment must be made without handling the munitions.

- Personnel trained in ammunition handling—such as certified Quality Assurance Specialists Ammunition Surveillance (QASAS) and Ammunition Specialists (MOS 89B)—can determine

proper packaging, transportation, and storage requirements.

- Whenever possible, use the original shipping container for transportation and storage. Other safe-to-ship packaging includes empty ammunition boxes lined with sand and packing material to prevent forward and backward movement.

- Handle all ammunition and explosives carefully! Improper, rough, or careless handling can cause accidental detonation.

- Limit the number of personnel engaged in ammunition and explosives handling to the minimum required for safe and efficient operations.

- When transporting CEA, block and brace packaged items so they can't move during transportation and always observe compatibility standards.

- Reference the following materials for more information on safe handling procedures:

- ▶ Field Manual (FM) 21-16, *Unexploded*

Ordnance (UXO) Procedures, 30 August 1994

- ▶ FM 4-30-13, *Ammunition Handbook*, 1 March 2001

- ▶ Department of the Army Pamphlet 385-64, "Ammunition and Explosives Safety Standards," 15 December 1999

- ▶ U.S. Army Combat Readiness Center pamphlet, "Munitions Handling 101"

- ▶ Army Safety Policy Memorandum, 28 June 2004

Leaders at all levels must understand the proper procedures to plan, execute, and react to CEA operations. Units must incorporate risk management into munitions handling operations to reduce the risks inherent with these missions. Do your part on the individual level and be safe! 

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Is There Anybody

Down

What happened

This was the first field training exercise for a new unit of action. The fire team received live ammunition for a live-fire range exercise. After receiving the ammunition, the fire team walked to the range and began their training. The first sergeant was on the range and, after the first dry-fire iteration (with no opposing forces [OPFOR] personnel present), called the range safety officer (RSO) on his hand-held radio.

The first sergeant asked the RSO to send forward OPFOR personnel. The RSO immediately sent two Soldiers to the range. Neither of these Soldiers had acted as OPFOR previously during this training. The OPFOR Soldiers (with blank ammunition) were positioned downrange in accordance with the company's training plan. The fire team was supposed to conduct two blank iterations with the OPFOR present.

After locking and loading their weapons with the live ammunition, the fire team moved onto the range. As they exited the wood line and began to proceed down the range, the team leader saw two pop-up targets and directed his Soldiers to react. The OPFOR Soldiers saw the fire team approaching but didn't fire their weapons.

As the fire team reacted to the targets, they separated into two buddy teams—one on the right and one on the left. The two Soldiers in the left buddy team bounded forward while the two Soldiers in right-side buddy team fired live ammunition at the two pop-up targets. At this point the OPFOR Soldiers were in the right-side buddy team's direct line of sight.

The right-side team then bounded forward while the left-side team engaged the near targets. Each buddy team bounded

one more time in the same manner. After this second bounding movement, the buddy teams shifted their fires from the near targets to the far targets. The buddy teams didn't move after the final bound.

A platoon leader acting as the left-side lane observer/controller (OC) asked the company commander if the OPFOR were off the range. The company commander called "cease fire." The buddy teams stopped firing even though they didn't know why the cease fire was called.

A platoon sergeant, who was acting as the right-side lane OC, had forgotten the OPFOR were on the range. He immediately started moving downrange to look for the OPFOR. While the platoon sergeant was moving down the range, the company commander saw one of the OPFOR Soldiers stand up, visibly shaken.

This OPFOR Soldier was 85 meters from the final bounding position and 20 meters left of the far target positions. He wasn't in either of the buddy team's direct line of sight. The company commander verified this OPFOR Soldier wasn't injured, but he soon saw the other OPFOR Soldier lying in a small tire rut. The second OPFOR Soldier had suffered fatal injuries during the live-fire engagement.

The platoon sergeant didn't know where the OPFOR had been positioned during the training iteration. He found the OPFOR Soldiers and the company commander only after he ran around the final objective.

Why it happened

Three failures were present and contributing in this accident:

- The range officer in charge (OIC) and the RSO failed to ensure the range was clear before the live-fire iterations began. Neither Soldier asked if anyone was downrange before the live-fire training began.
- The company commander and first sergeant failed to establish a clear delineation of responsibilities. The company commander and first sergeant said they were providing tactical oversight and weren't responsible for the OIC's and RSO's safety responsibilities. The company commander and first sergeant

Lessons

- Range OICs and RSOs must clear personnel from all ranges and ensure the ranges are clear before beginning live-fire operations.
- Range OICs and RSOs must be trained in separating their responsibilities for tactical evaluations and safety.
- Battalion commanders must ensure subordinate company commanders and first sergeants know their roles and understand that all actions or changes must be coordinated with the OICs and RSOs.



MSG ROBERT FISHER
Accident Investigator
U.S. Army Combat Readiness Center

made most of the decisions that pertained to the range, not the OIC or RSO. The first sergeant made changes including range layout, order of fire, OPFOR location, and rules of engagement.

- Both the RSO and OIC thought the company commander and first sergeant had taken over the range and were in charge, even though their intent was to provide tactical guidance only. Both the OIC and RSO were located in the marshalling area during the accident.

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Learned

- OPFOR must not be placed on any range where blank and live fires are being conducted simultaneously.
- Commanders must coach, teach, and mentor platoon leaders in troop-leading procedures, risk management, and back briefs.
- Range OICs must use range safety checklists when conducting a safety briefing.



This past February the Combat Readiness Center (CRC) developed a new tool for commanders called "preliminary loss reports" (PLRs), which are generated for each Class A Army accident involving a fatality. Every PLR contains the basic facts of the accident and suggested tactics, techniques, and procedures based on the information available and lessons learned from similar accidents. The PLRs are sent to brigade commanders and above and select command sergeants major to share lessons learned. Countermeasure will spotlight certain PLRs when a trend in ground tactical accidents emerges. This month's "PLR Files" focuses on explosives accidents, which have killed three Soldiers since May 2005.

Iraq: A specialist died when a piece of UXO detonated in a tent. The Soldier was packing gear to move from one tent to another when he either handled or unintentionally disturbed the UXO. The origin of the explosive item is unknown.

United States: A private first class was killed when a grenade exploded in his hand. The Soldier was in active duty for training status and was part of an advance party for live-fire training on a range. The private and two other Soldiers were conducting a reconnaissance mission when they reportedly broke away from their 12-man party and crossed into another range where they were not authorized to be. They were taking pictures and collecting dud rounds when the private picked up the grenade. He was killed instantly upon detonation.

After the accident, explosive ordnance disposal (EOD) personnel recovered multiple dud rounds, including 40 mm target practice rounds and 37 mm rounds, from the private's pockets. There is a possibility that one to two 40 mm high-explosive dual-purpose rounds contributed to the Soldier's injuries. The advance party reportedly was fully trained on restricted areas (which also were clearly posted as restricted) and on the safety policies prohibiting the handling of ordnance. The

accident range was littered with a broad spectrum of ordnance, from small arms to aircraft gunnery (short of missiles).

Afghanistan: A captain suffered fatal injuries when an explosive charge he was handling detonated. The unit's Soldiers were emplacing linear-shaped charges during "entry technique" training at the local range when the charge exploded unexpectedly. The captain presumably was handling one of the explosives. Two other Soldiers and a foreign national troop were injured, but all are expected to recover. Initial reports indicate the Soldiers were not wearing body armor.

Don't let these type accidents happen in your formation. Consider the following actions to help prevent similar incidents:

- Ensure personnel wear appropriate personal protective equipment as listed in Training Circular 90-1, paragraph 4-8, when handling explosive charges.
- Do not touch or move a suspected UXO item. Leave that mission to EOD personnel.
- If you find a suspected UXO item, mark the area, report it to your higher headquarters, safeguard your personnel, and follow UXO procedures in accordance with Field Manual 21-16 and local procedures.
- Check out the CRC's Web site at https://crc.army.mil/guidance/best_practices/CFLCC_Safety_Gram_UXO.jpg for a poster download. Hang the poster where all personnel can see it.
- Download the "Munitions Handling During Deployed Operations 101" handbook from the CRC's Web site at <https://crc.army.mil/Tools/handbooks/ground/munitionshandling.pdf> for additional information concerning UXO.
- Aggressively enforce UXO safety procedures.

To find the complete text of these and other PLRs, please visit the CRC Web site at <https://crc.army.mil> and click on the "Latest PLRs" box on the right side of the page. You must have an AKO password to access the PLR site. Also check out the article "Flash, Bang, Burn!" on page 16 of this issue. Be safe!

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Lost



ACV

Class A

- Two Soldiers suffered fatal injuries when the M113A3 Armored Personnel Carrier (APC) they were riding in rolled over. The vehicle's driver lost control when the APC gained speed going down a slight hill. The accident occurred during the mid-afternoon.

Class B (Damage)

- An M1A2 Abrams caught fire during a training center live-fire exercise. The fire originated in the tank's electric mechanical

fuel system. No injuries were reported. The accident occurred in the late afternoon.



AMV

Class A

- Soldier was killed when the M1114 up-armored HMMWV he was riding in rolled over. The Soldier was serving as the vehicle's gunner and was pinned in the vehicle after the accident. The accident occurred during the early morning.

SEATBELT SUCCO



st

Class B (Damage)

- An M978 HEMTT fuel tanker suffered Class B damage when it struck a guardrail and rolled over. The driver was merging with traffic when he steered the vehicle into the road's soft shoulder and hit the guardrail. No injuries were reported. The accident occurred during the early morning.

- A 5-ton gun truck suffered Class B damage when it struck a civilian

vehicle and rolled over. The civilian vehicle turned in front of the gun truck, which then ran over the vehicle and overturned off the roadway. The gun truck driver was wearing his seatbelt, and no injuries were reported. The accident occurred during the early afternoon.

The driver shut down the HMMWV when he noticed black smoke and flames coming from underneath the hood and through the heater vents. The crew conducted an evacuation drill but couldn't find the vehicle's fire extinguisher; instead, personnel in the tactical operations center

Class A

Two Soldiers suffered fatal injuries when the M113A3 Armored Personnel Carrier (APC) they were riding in rolled over. The vehicle's driver lost control when the APC gained speed going down a slight hill. The accident occurred during the mid-afternoon.

Class C

- An M998 HMMWV caught fire and suffered Class C damage while its crew was conducting a police call on a range. The vehicle had overheated earlier in the day, but maintenance personnel thought they had corrected the problem.

brought extinguishers to the accident site. The extinguisher was not stored in the proper place on the vehicle. Maintenance determined the fire started under the fuel filter, at which point the main fuel line came loose and sprayed fuel in the engine compartment.

STORIES Class C

Spotlighting Soldiers who wore their seatbelts and walked away from potentially catastrophic accidents



- The gunner of an M1025 HMMWV suffered minor injuries when his vehicle was hit head-on by a civilian tractor-trailer. The HMMWV was stopped on the side of the road when it was struck by the truck, which drove through a concrete barrier before it hit the HMMWV. The HMMWV's driver was not injured. The gunner was momentarily dislodged from his

seat upon impact, but his seatbelt kept him inside the vehicle.

- Two Soldiers escaped unharmed when their M2A3 threw a track and overturned. The vehicle tracks locked when the left-side track threw, causing one of the track shoes to break. The Soldiers were conducting route reconnaissance along a main supply route.

Both Soldiers were wearing their personal protective equipment (PPE) and seatbelts.

- The driver of an M915A2 was not injured when the truck overturned en route to a forward operating base. The truck was pulling an M872A3 trailer. A palletized load system (PLS) trailer, which was stacked with five PLS flat racks, was loaded

on the M872A3. The truck overturned when the driver approached an extremely tight turn in the road. The weight of the flat racks and the trailer's high center of gravity, along with a 10-inch drop-off on the side of the road, caused the accident. The Soldier was not speeding and was wearing his seatbelt and proper PPE.



Personnel Injury

Class A

■ Soldier suffered a fatal gunshot wound to his forehead during live-fire training. The Soldier was evacuated from the training area and died at a local hospital. The accident occurred during the early evening.

■ A foreign national troop suffered a fatal gunshot wound after an Army unit mistook the foreign nationals to be enemy forces and fired on them. The accident occurred during the late evening.

■ Soldier collapsed and died after completing a unit conditioning obstacle course and 2-mile run. The Soldier was pronounced dead at the local medical center. The accident occurred during the early morning.

■ Soldier collapsed while running during physical training. The Soldier was transported to the local medical center, where he died a short time later. The accident occurred during the mid-morning.

■ Soldier collapsed on a track while running and was pronounced dead within an hour at the local troop medical center. The accident occurred during the early morning.

■ Soldier collapsed and died while taking the Army Physical Fitness Test. The Soldier did not respond to lifesaving procedures. The accident occurred during the early morning.

Class B

■ Part of Soldier's left ring finger was amputated when it caught on the rear of an LMTV. The Soldier was dismounting the vehicle following night driver's training. The accident occurred during the late evening.

WHAT THINK were they

Forrest Gump might not have been a smart man, but he got one thing right when he said, "Stupid is as stupid does." These words came to mind as I looked through the Class D accident reports in the Combat Readiness Center's database, searching for the right story to kick off the new feature you're reading now. There's nothing funny when a Soldier gets hurt, whether by his own hand or the enemy's. However, there are some "Duh!" incidents out there that could've been much worse but fortunately weren't. This month's feature is one such story. The Soldiers involved will probably laugh about their "adventure" sometime in the future, but they've got to get back in their commander's good graces first. If you have a story you can laugh about now, we'll gladly publish it (anonymously, of course!) in this forum. For more information on how to share your story, send an e-mail to countermeasure@crc.army.mil.



Lost

based on preliminary reports of ground accidents.

ing?

THE A-TEAM

JULIE SHELLEY
Editor

Cut the guys some slack—they were just having a little fun, right? It was a beautiful summer morning in the American desert. A private and a sergeant took an M1009 Commercial Utility Cargo Vehicle for a preventive maintenance checks and services road test. Although they'd been instructed to stay on the asphalt roadway, the two Soldiers figured they'd check out the vehicle's off-road handling. Those open spaces were so tempting, and a small hill beckoned in the distance.

Thinking they'd found the perfect spot, the Soldiers jumped the truck over the hill. Since it was so much fun the first time, they jumped the hill again; however, their good time was short lived. The third

jump was the charm (or strike, depending on how you look at it). On that fateful jump, the truck hit the ground so hard its front end bent under and damaged several necessary parts.

Seeing they'd have a lot of explaining to do, the Soldiers decided to head back to the hardball road. What they couldn't see, however, was the busted oil pan or the trail of oil the truck was leaving behind. The truck ground to a halt as the engine froze, and the Soldiers had to call a wrecker to tow them to the armory.

Luckily these two "stuntmen" were wearing their seatbelts and walked away unharmed. Their backsides, however, didn't fare so well and their driving days are over, at least for

now. The classroom—not the open road—will be their domain for the next few months. Both Soldiers were ordered to retake the Defensive Driver's Course and were counseled on the proper way to follow instructions. They'll also be attending a risk management class before they attempt any future activity.

Lastly, these two adventurous Soldiers won't be road-testing other vehicles any time soon. Both their driver's licenses were suspended until their senior driver's training NCO can schedule them for refresher training. Give them a break? I don't think so! 🚛

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STOP THE LOSSES

WIN THE FIGHT

stay
on the
edge

USE COMPOSITE
RISK
MANAGEMENT



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ARMY GROUND RISK MANAGEMENT INFORMATION

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Taming Nature



CONTENTS

- 2 Cold Hurts!**
- 6 Don't Eat the Yellow Snow!**
- 8 Left in the Cold**
- 10 Winter's Fashion Statement**
- 12 Staying Warm the Right Way**
- 15 Equipment Gets Cold Too**
- 16 After the Storm**
- 20 Accident Briefs**
 - Seatbelt Success Stories
 - What Were They Thinking?

features



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A popular motivational saying goes something like this: "That which does not kill you makes you stronger." How many times have you heard that one? While this oft-quoted line might have some fundamental truth, it forgets to mention that those things that don't kill you often hurt a lot.

COOL HIT



COLD WOUNDS!

JULIE SHELLEY
Editor

Cold-weather operations present many hazards that, if not approached correctly, can lead to disaster: severe cold injuries, carbon monoxide poisoning, and tent fires, just to name a few. But the winter environment also introduces other not-so-serious risks that can increase pain and decrease productivity. These minor aches and pains are not only a nuisance, they are also costly in terms of lost man-hours and dollars.

Fortunately, most cold injuries are completely preventable if appropriate precautionary measures are taken. But

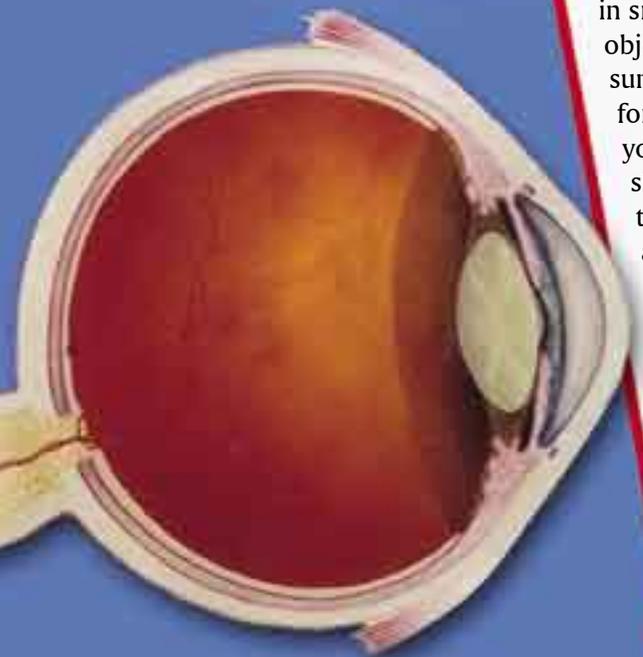
sometimes even the best-prepared Soldier can fall prey to one of the “minor” injuries listed below. Be on the lookout and seek proper medical treatment if you or one of your buddies exhibits symptoms for any of the following conditions.

Frostnip. This type of injury, along with more serious ailments such as frostbite, can occur any time the air temperature is below freezing (32 °F or 0 °C). Frostnip is caused by water freezing on the skin’s surface. In exposed skin, the risk of a freezing injury increases with higher wind speeds.

Frostnip occurs at temperatures of about 15 °C (59 °F). Frostbite occurs at temperatures of about 0 °C (32 °F)

COLD HURTS!

Solar radiation can "sunburn" unprotected eyes and lead to snow blindness.



Frostnipped skin will appear red and possibly swollen. Although painful, frostnip generally is limited to the skin's surface and causes no further damage after the affected area is rewarmed. However, repeated frostnip in the same spot can dry and crack the skin, making it very sensitive. It also is important to note that distinguishing between frostnip and frostbite can be difficult. Frostnip must be taken very seriously, and all frostnip injuries should be reported immediately.

Sunburn. You don't have to be in the desert or at the beach to get sunburned—the threat of sunburn depends on the intensity of sunlight, not air temperature. Add in snow, ice, and lightly colored objects, all of which reflect the sun's rays, and the scene is set for a major sunburn injury if you're not careful. Sunburned skin will be painful and hot to the touch, appear red, and possibly be swollen and blistered. With the potential to last for hours or even days, sunburn also can cause temporary incapacitation and increase heat loss during cold exposure.

To prevent sunburn any time of year and in all environments, use

sunscreen with a sun protection factor of at least 15 and cover all exposed skin. In cold weather, sunscreen should be alcohol-free. (The Army has an alcohol-free sunscreen that can be purchased under NSN 6505-01-121-2336). If you or another Soldier should become sunburned, prevent further exposure and apply a moisturizing lotion; aspirin or acetaminophen may be given for pain. Soldiers with large areas of injured or blistered skin should be evacuated for medical treatment.

Snow blindness. Snow blindness, like sunburn, is a threat posed by the intensity of the sun's rays, not the temperature outside. Solar radiation can "sunburn" unprotected eyes and lead to snow blindness. Symptoms of snow blindness include painful, gritty eyes with profuse tearing, blurred vision, and possibly headache. Soldiers suffering from snow blindness should be removed from sunlight and rest in a dark area with their eyes covered by cool, wet bandages until they can be evacuated. Bacitracin or erythromycin ophthalmic ointment also should be applied.

Protective eyewear or goggles that block at least 90 percent of ultraviolet radiation help prevent snow blindness, and sunglasses

SEEK IMMEDIATE MEDICAL HELP!

with visible light transmittance in the 5- to 10-percent range are needed to reduce the sun's reflection off snow. In addition to protective eyewear, sideshields or deeply wrapped lens designs should be used to reduce the chances of eye injury. It should be noted that not all commercially available sunglasses block enough solar radiation to protect against snow blindness. Polarized sunglasses purchased under NSN 8465-00-161-9415 will provide the proper sun protection needed in a winter environment.

Dry and chapped skin. The combination of sun, wind, snow, rain, and low humidity can wreak havoc on your skin, lips, nose, mouth, and throat. Nosebleeds, sore throat, minor respiratory difficulties, and chapped skin are all common ailments seen in the dry winter environment. To prevent nose and mouth irritation, cover the bottom part of your face with a balaclava or scarf. Chapped lips and skin can be prevented by using lip balm (NSN 6508-01-277-2903) and by limiting skin exposure to the elements. Use a moisturizing lotion to help the skin retain water.

Slips and falls. An increase in slips and falls, as well as vehicle accidents, generally

is seen during cold weather operations. Paths, walkways, and roads are frequently muddy or frozen. Heat escaping from the entrances of tents and buildings causes cycles of thawing and freezing on the ground surface, making those areas particularly hazardous. Add to the mix fatigue, bulky clothing, and vision-restricting hoods and hats, and the danger becomes very real.

To mitigate the risks posed by slippery, frozen surfaces, snow should be removed from the ground before tents are set up. Slippery paths and walkways should be marked with warning signs, and Soldiers should walk slowly in areas with snow and ice. Finally, sand, salt, ashes, or straw should be spread on known and potentially hazardous areas to increase traction.

Tent eye. Tent eye is an inflammation and irritation of the eyes resulting from exposure to fuel fumes and is most common in poorly ventilated shelters where stoves and heaters are being used. Rubbing itchy eyes caused by these fumes subsequently can lead to an infection. Anyone suspected of having tent eye should be moved to fresh air and taken to a medical facility for evaluation

The following cold injuries require immediate medical attention. Do not delay if you or your buddy exhibits any of the following symptoms:

Hypothermia: Shivering, an altered sense of consciousness, and uncoordinated movements. Hypothermia can be fatal if treatment is not given immediately.

Carbon monoxide poisoning: Flu-like symptoms including fatigue, drowsiness, and headache. Affected individuals also might become confused and develop blurred vision. Carbon monoxide is odorless, colorless, and tasteless. Suspected carbon monoxide victims must be moved to fresh air and given medical attention immediately!

Frostbite: Loss of feeling or a tingling sensation in the affected area along with white, gray, red, yellow, or waxy-looking skin. The frozen tissue will feel solid to the touch.

Trench foot: Numbness in the feet accompanied by burning sensations and shooting pain. Severely affected tissue will appear pale and slightly blue. Trench foot can lead to gangrene.

Chilblain: Reddened, slightly swollen skin accompanied by a prickly or burning sensation. Left untreated, chilblain can lead to more severe cold injuries.

COLD HURTS!

and treatment. Soldiers must ensure their shelters are properly ventilated to prevent tent eye and other serious problems such as carbon monoxide poisoning.

Burns. Stove and heater use sets the perfect environment for burns if Soldiers are not trained properly in their use. Contact with hot surfaces and fires or the explosion of stoves and fuel sources can cause a multitude of burn injuries. In addition, improper fueling and lighting techniques or inadequate ventilation can result in the accumulation of flammable fumes. If these fumes are ignited accidentally, potentially fatal fires can occur.

Anyone who's been burned should be taken from the heat source. Burning or smoldering clothing should be removed and cut away over and around the burn, unless it sticks to the wound. The wound itself should be covered with a dry, sterile dressing tied at the edge of the burn, not over it. **DO NOT** apply ointments, ice, or snow to the burn, and never break blisters.

Injuries stemming from the use of stoves and heaters are totally preventable if the correct safety measures are taken. Only properly trained Soldiers should be permitted to set up, light, refuel, and maintain stoves. A fire guard should be posted any time a stove or heater is being used, and horseplay should be prohibited inside the shelter. Air intake to the stove or heater should not be blocked, and the stovepipe should be tall enough to draft properly and be kept clean of soot and debris. Shelters and tents should not be sealed so tightly that ventilation is blocked completely. Lastly, tent and shelter doorways must be kept clear at all times to allow for easy escape should fire break out.

Remember that it's up to you when it comes to cold weather safety. The environment can't be controlled, but the risks associated with it can. Be prepared and think ahead about the small stuff! 

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don't eat the yellow snow

Yep, it's that time of year again! The thought of cold weather and cold injuries has been all but forgotten after this summer's record heat, both in theater and at home. I just returned from a trip to Pennsylvania State University, where I enjoyed a morning run in crisp 50 °F weather. What a treat! Now is the time for leaders and safety professionals to plan and take action against the upcoming cold.



WOW!

COL JOHN CAMPBELL
Command Surgeon
U.S. Army Combat Readiness Center

Lots of people work hard to ensure Soldiers are protected in adverse weather conditions throughout the year. Despite these efforts, however, cold injuries continue to happen year after year. How can we make this winter different?

I don't have an easy answer because the issue is complex. But I can tell you that proper training, appropriate equipment, physical and mental conditioning, proper nutrition, and concerned leadership can make a big impact on keeping Soldiers ready to fight in the cold. Also, some good "outside the box" thinking might be required in certain situations.

Early in my career, I was involved in an incident at Fort Bragg, NC, where

several ROTC cadets suffered from hypothermia at the beginning of summer. The cadets were at a field site when rain began pouring down. None of them had wet weather gear. After 4 hours of being out in the open and completely exposed, it became evident the cadets had to go back to the barracks. The unit sent buses and 2 ½-ton trucks to pick us up (we were lucky we didn't have to road march back!).

Unfortunately, the trucks didn't have their back covers installed. The soaked, tired, and hungry cadets were then exposed to 45- to 50-knot winds. Did I mention it was almost dark and the daytime temperature was rapidly falling to around 55 °F? Five of the cadets were later admitted to the hospital at Fort Bragg and treated for hypothermia.

I wish I was making this example up, but it really happened. No

one involved in the exercise ever considered the cadets could get a cold injury at that time of year. We began the exercise with good intentions, but our planning and risk assessment failed. Everyone was surprised at the cadets' condition and, needless to say, we had a lot of explaining to do. Fortunately, all five cadets recovered, but they lost a couple of critical training days because of their injuries.

OK, enough war stories. I've got to mention one of the most important aspects of the battle against cold injury—hydration. People generally minimize their activity in cold weather and even eat and drink less simply because they want to stay warm. However, adequate hydration and nutrition, including increased calorie intake, are vital to staying healthy in cold weather.

A good rule of thumb is that if your urine is yellow, "don't eat the yellow snow." At this point you're already dehydrated or well on your way to becoming so. You must drink more fluids! Conversely, if your urine is clear, then you're adequately hydrated.

Leaders can help their Soldiers stay hydrated by providing them with liquids they'll actually drink. Lukewarm drinks with some flavoring are more palatable than ice-cold, tasteless drinks in the winter. However, leaders should remember that excess coffee and soda can actually increase fluid output and lead to dehydration.

We obviously can't control the weather. We can, however, keep cold injuries at bay with appropriate planning and risk assessments and by remembering the lessons learned from past weather-related incidents. Stay warm, stay hydrated, and stay ready for the fight! 

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Left in the Cold

LTC (RET) CYNTHIA GLEISBERG
U.S. Army Combat Readiness Center

This lance corporal’s “death was not an accident. ‘Accidents’ happen. His death didn’t just happen; rather, it was the culminating event in a series of acts, each consciously committed by human beings: intelligent, experienced and highly trained Marine Corps officers and noncommissioned officers.”—*excerpt from the court-martial of the Marine lieutenant in the story below*

It was a cold December day in the desert—the kind most service members dread being outdoors. A Marine Corps lieutenant was ordered to post road guards for a battalion-sized motorized night movement during a field training exercise (FTX). He was supposed to assign the guards in pairs, keep a roster of the postings, and provide the roster to a captain.

There were a number of new Marines in the unit. The battalion commander was aware they might not be accustomed to working in the desert’s extreme conditions. The battalion commander stressed personnel accountability in his instructions to the

lieutenant during preparation for the movement.

Despite this guidance, the lieutenant posted two Marines in separate isolated areas without partners. Two road guards reminded the lieutenant of the two-guards-per-post requirement, but the lieutenant dismissed them. After all, he was senior in rank. He also didn’t prepare a personnel roster with the guards’ names and locations.

Once the movement was over, the Marines began recovery operations to pick up the guards. They thought they’d picked up all the guards but later discovered a lance corporal was missing. He was found dead from exposure more than 40 hours later.

The lieutenant made three deadly failures during the FTX. First, he failed to post the guards in pairs. Pairings would’ve enabled the guards to practice the “buddy system” and protect each other from fatigue, weather, and further possible problems. Second, he failed to post the guards on the main route where they would’ve been seen. Lastly, the lieutenant failed to prepare the personnel roster and ensure all the guards were retrieved after the movement.

DID YOU KNOW?

During Fiscal Year 2005, the Army conducted 1,351 courts-martial—739 general courts-martial and 612 bad conduct-special courts-martial. These trials resulted in 1,295 convictions and 1,027 discharges.

Legal action was taken against the lieutenant since his failures directly contributed to the lance corporal's death. The Uniformed Code of Military Justice (UCMJ) has several provisions that can be used to charge leaders for inappropriate actions or inactions regarding the performance of their duties and the resulting safety impact on their troops. Using these provisions, the lieutenant was court-martialed and charged under the provisions of Article 92, Failure to Obey an Order or Regulation.

The trial court found the lieutenant guilty of failing to obey a lawful order given by the battalion commander to post two-man teams on the main route. The trial court also found the lieutenant was negligent in his failure to post road guards in pairs at designated checkpoints and to obtain a roster of posted individuals. Finally, the court determined the lieutenant failed to follow instructions because he wanted to accomplish the mission quickly. For these and other unrelated charges, the lieutenant was sentenced to dismissal from the Marine Corps, confinement for 4 months, and total forfeiture of all pay and allowances.

The lance corporal's death was totally preventable. Had the lieutenant taken the time to follow the safety guidelines established by his commander, a fellow Marine wouldn't have suffered a slow, agonizing death from exposure. Had the captain followed up on the guard roster he was expecting but never received, the corporal could've been saved. Had everyone just taken the time to follow the standard, one more Marine would be ready for the fight.

Don't let OPTEMPO cause you to knowingly take shortcuts, disregard safety precautions, and put mission accomplishment above all else—especially your Soldiers' well-being. No training exercise or mission is worth you making the wrong decisions and accepting unnecessary risks. If you have doubts about your obligations as a leader to maintain your Soldiers' health and welfare, contact your local judge advocate for guidance. Ask questions first, because later might be too late. ■

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Cold weather has numerous adverse effects on troops in combat. Hypothermia and frostbite are serious medical problems, but Soldier performance can be affected well before an injury takes a Soldier out of the fight. For instance, numb skin and heavy clothes hinder Soldier task performance. Soldiers also might become emotionally detached, lose motivation, and become reluctant to leave their tents or sleeping bags.

WINTER'S FASHION STATEMENT

CPT BENJAMIN MINCHHOFF
101st Airborne Division
Fort Campbell, KY

Fortunately, all these problems are avoidable. The Army has greatly improved issued clothing and, with proper wear, Soldiers can be comfortable in all climates. I've received a cold weather safety brief every year since I've been in the Army. However, no one has ever explained how Army clothing is designed to protect Soldiers in the cold.

Have you ever heard of COLD—you know, the catchy acronym that describes dressing correctly for cold weather? (Here's a refresher: keep clothing Clean, avoid Overheating, wear clothing Loose and Layered, and keep clothing Dry.) The key to the COLD system is layering.

Soldiers can avoid overheating and stay dry by properly layering their clothes. Any cold weather clothing ensemble consists of three layers: the base layer, insulating layer, and shell. Soldiers who understand these layers can tailor their clothing to specific conditions and missions.

The base layer

The base layer is closest to the skin and is designed to wick moisture away from the body so the wearer stays dry, warm, and comfortable. The base layer's fabric and weight are very important. Cotton kills in the cold because it holds moisture against the skin. Soldiers will sweat even in the cold, so cotton should be avoided at all costs.

Polypropylene and polyester blends are good base-layer fabrics. Issue items that work well as base layers include the brown polypro top and bottoms and black "ninja suit" top and bottoms. The T-shirt issued with the new Army Combat Uniform is made of a wicking fabric and also is a good base layer. Many Soldiers use the polypro tops and bottoms but still wear their brown cotton T-shirt and drawers underneath,

defeating the base layer's purpose.

Soldiers should tailor the base layer's weight to their activities and the outside temperature. For instance, a thinner base layer should be worn during high aerobic activities. During stationary activities, a heavier base layer should be worn.

The insulating layer

The insulating layer traps warm air against the body. Soldiers can use multiple insulating layers, depending on their activity level and outside temperature. Light, bulky fabrics such as wool, down, polyester fleece, or synthetic pile fabrics that trap air make the best insulating layers.

Army-issued items that can be used as insulating layers include the "bear suit," field jacket liner, black fleece, and wool sweater.

Soldiers starting out on a patrol or other strenuous activity should be slightly cold when they start to keep them from overheating and sweating. These Soldiers should carry their insulating layer in their rucksack and put it on when they make a stop.

The shell

The shell protects the body and the other two layers from elements such as wind, rain, snow, and dirt. A good shell is your best defense against wind and water—unless combined with a shell, most insulating layers do not protect against wind and rain. Gore-Tex is the best shell fabric because it's waterproof, windproof, and breathable.

Field jackets provide some wind protection, and the wet-weather system is waterproof and windproof but doesn't breathe. The black

fleece loses most of its insulating ability when even a slight wind picks up. Remember that a good shell not only protects against wind and water but also breathes to let perspiration escape.

At night

These layering principles also apply to boots, gloves, headgear, and sleeping systems. The new Army modular sleep system has three parts. The green bag is the base, the black bag is the insulating layer, and the camouflage Gore-Tex bivy is the shell. They should be used together to ward off cold injuries.

DID YOU KNOW?

The average low temperature in December in Mosul, Iraq, is 42 °F, while the lowest recorded temperature for the same month is 28 °F. In Kabul, Afghanistan, the average low in December is 28 °F, and the lowest recorded temperature is 5 °F. That's a good reason to bundle up!

Soldiers don't have to wear a lot of clothes at night to stay warm. Physical training shorts and a wicking T-shirt (not cotton) will be sufficient in most conditions if the sleep system is used properly. Additionally, a sleeping pad will help insulate the body from the cold air or ground beneath.

The Army will continue to work and fight in cold weather. Remember the principles above and keep in mind they work not only for combat but also for outdoor activities such as hiking, skiing, hunting, running, or sitting in the bleachers at a football game. Cold weather doesn't have to be a hindrance—take advantage of what you've been given and stay ready for the fight. 

Contact the author by e-mail at benjamin.d.minchhoff@us.army.mil.

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.

Heat on a cold winter night provides many advantages for Soldiers. One major benefit is that Soldiers lose less body heat and conserve more energy while sleeping in a warm environment, potentially improving their performance the next day. Despite the advantages inherent with the use of heating devices, they also pose some unique hazards—especially concerning fire and carbon monoxide poisoning.

Fire can engulf a tent in 10 seconds and destroy it in 60 seconds, giving Soldiers very little time to react.

Conversely, carbon monoxide is odorless, colorless, and tasteless and can quickly kill Soldiers while they're sleeping. It's released when fuels are burned inefficiently. In fact, most people killed in house fires die from carbon monoxide poisoning before they're burned.

While commercial off-the-shelf (COTS) heaters and stoves might seem to be a good solution for heating problems in the field, Soldiers must be trained on proper procedures before using such 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,

no COTS heaters on the market meet Army requirements for field environments. Standard military heaters, on the other hand, are designed to vent combustion fumes to the outside, are tested for safe field use, and should be used instead of COTS heaters.

The following heaters are approved for Army use:

H-45 (NSN 4520-01-329-3451). The H-45, or Space Heater Medium, replaces the old potbelly M-1941. The H-45 burns liquid and solid fuels and is designed to heat General Purpose, Tent Extendable Modular Personnel, and Tactical Operations Center tents. It has an output capacity of 45,000 BTU.

Space Heater Arctic (NSN 4520-01-444-2375). This heater replaces the gasoline-burning

M-1950 Yukon heater and is a lightweight, portable heater for 5- and 10-man arctic tents. It burns liquid and solid fuels and has an output of 25,000 BTU.

Space Heater Small (NSN 4520-01-478-9207). This heater has an output capacity of 12,000 BTU and 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, so no fuel can or stand is needed.

Space Heater Convective (NSN 4520-01-431-8927). This heater provides forced hot air for tents and shelters. It generates its own power, recharges its battery, and has an output of 35,000 BTU.

Thermoelectric Fan (NSN 4520-01-457-2790). The Thermoelectric Fan is a compact, self-



STAYING



powered unit that fits on top of any military tent heater. It uses heat to turn the fan blades, which circulate heated air, improve comfort, and save fuel.

To keep Soldiers both 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.
- Heating shelters at night requires a fire guard at all times. A fire guard can make use of the time by cleaning his weapon and equipment, washing and shaving, and preparing hot drinks for sentries outside.
- 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 fire easily.
- Stoves in tents with wooden floors must be placed in sandboxes.
- Always use the specified type of fuel for the heater or stove.
- Each heating device and all its components must be inspected and cleaned thoroughly before storage and use. Special attention should be paid to checking 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 the sections are vertical and do not contact any part of the tent.
- Be sure to leave enough air space between

WARM THE RIGHT WAY

JULIE SHELLEY
Editor

the tent wall and the heater or stove. Heating devices situated too close to the tent wall can ignite the tent.

- If the heater flame is accidentally extinguished, wait until the burner cools before relighting. An explosion could occur.
- Fuel should not

be taken inside a tent warmed by fire. The fuel can for the heater must be located outside the tent as far from the tent as the fuel hose allows.

- Do not exchange the heater unit fuel can unless the heater is turned off.
- Do not smoke or drop cigarette butts

around combustible materials or 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.
- Adding water to a gas fire will cause the fire to flame up and spread.

• 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 and 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 most likely will happen

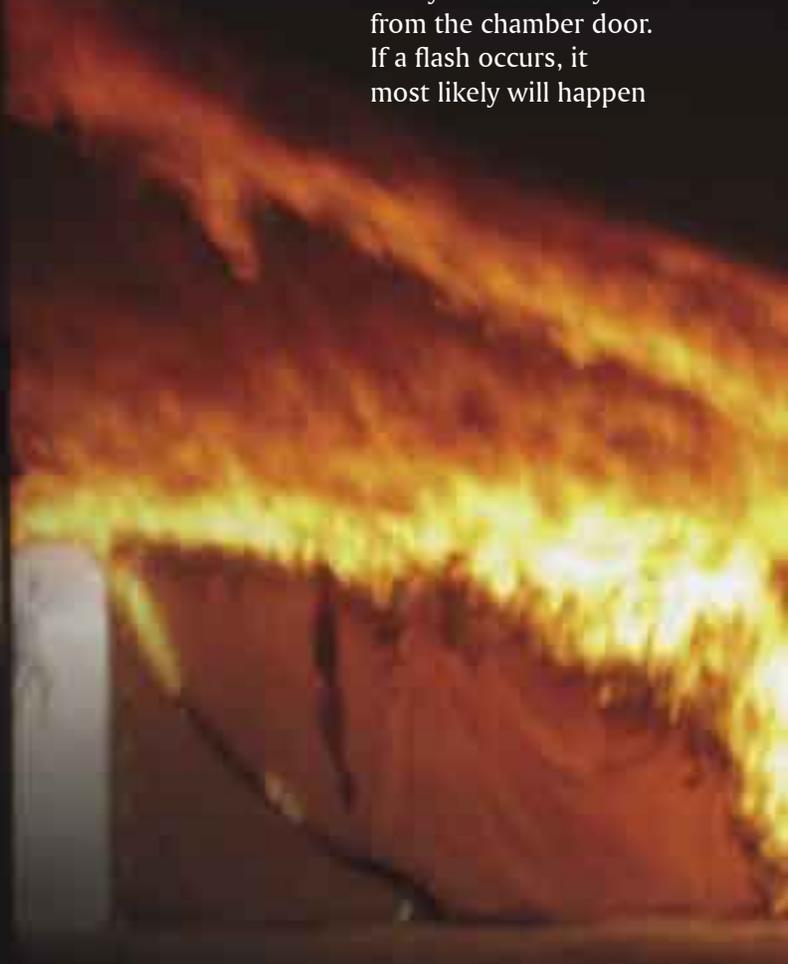
YOU MIGHT NEED TO KNOW...

The Army Communications-Electronics Command recently released Safety of Use Message (SOU) 05-001, which is of particular interest to Soldiers looking to stay comfortable in shelters and tents this winter. The SOU concerns Field Deployable Environmental Control Unit (FDECU) models FDECU-2, FDECU-3, FDECU-4, and FDECU-5 (NSN 4120-01-449-0459/LIN A26852).

The FDECU provides cooled or heated air in various portable shelters and tents. However, a few Soldiers have suffered smoke inhalation when the heater assembly (P/N 9454066, NSN 4520-01-494-3852) overheated and filled their tent with smoke. Worn wiring insulation is believed to have caused the overheating.

Unit maintainers must inspect the heater assembly annually. Now is an excellent time to complete this inspection since winter is approaching rapidly. Follow the procedures in item 6, table 4-1 of the Unit Preventive Maintenance Checks and Services in Technical Manual 9-4120-411-14.

To read the complete SOU, go to the Army Electronic Product Support Web site at <https://aeps2.ria.army.mil/commodity/soum/cecom/05/csoum05-01.html>. If you have any additional questions contact Steven Chan, CECOM Directorate for Safety, at DSN 987-7473 or (732) 427-7473; or Donald Oglesby, CECOM Logistics Readiness Center, at DSN 992-3990 or (732) 532-3990.



when the fuel first ignites.

- Keep stoves clean and always practice safety when doing so. 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 metal parts of heaters or stoves when temperatures are below freezing without protective gloves. Skin may freeze upon contact and cleave 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—Soldiers lose their lives in inches and seconds. In a tent fire or carbon monoxide incident, there are no seconds to spare. Use the right equipment and stay ready for the fight! 

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equipment gets cold too

G3, OPERATIONS DIVISION

U.S. Army Combat Readiness Center

Operating in cold weather presents many challenges for Soldiers and their leaders. Things as simple as preventing drinking water from freezing in the field and protecting Soldiers from cold weather injuries are extremely trying in harsh winter conditions.

But what about our equipment? Are there different procedures for operations in the cold? There are numerous opportunities for mission failure in cold weather due to equipment damage and personnel injuries. Personnel injuries have been discussed in detail already in this issue. It's important to remember there are also hazards associated with equipment maintenance in the cold.

The operator's manual for any piece of Army equipment has specific procedures to follow for cold weather operations. Soldiers should follow these procedures and allow time for vehicles and other equipment to warm to an adequate operating temperature. When we roll out of our sleeping bags on a cold morning, it takes us standing around the stove and a few cups of coffee to get started. The same principle holds true for equipment. Remember to give those systems an electric cup of "joe" before asking them to perform.

The systems are now up and running and ready to go, right? Wrong! Now is the time to focus on the mechanical systems.

Transmissions, gearboxes, and even tires need to be warm to give 100 percent. Transmissions and gearboxes are lubricated by either oil or grease. Both of these lubricants are affected by temperature and tend to thicken in cold weather. Thicker fluid means higher pressure on seals. In maintenance lingo, that means lots of blown seals. Tires also are affected by the cold and sometimes will get flat spots after sitting for a while.

Let's now talk about our most important resource: people. Getting Soldiers to work in cold climates can be a challenge, but it's also a very big responsibility. Take an active role in caring for your Soldiers. Small things like hot coffee and soup go a long way. Also make sure your Soldiers are dressed for the environment.

The bottom line is that, as leaders, we are responsible for our equipment and Soldiers. Use Composite Risk Management and other tools to keep your unit from becoming a statistic. Think of it this way: By doing little things like taking care of your equipment, your Soldiers won't have to be out in the cold repairing something because someone else didn't adhere to the standard. Stay warm and stay safe! 

Comments regarding this article may be directed to the editor at (334) 255-1218, DSN 558-1218, or by e-mail at julie.shelley@us.army.mil.



Soldiers from all components of the Army—active, Reserve, and National Guard—serve in many different capacities all over the world. Sometimes, however, Soldiers are called to support their fellow countrymen at home. Hurricanes Katrina and Rita devastated the U.S. Gulf Coast in August and September 2005, and tens of thousands of U.S. troops continue to respond to the twin disasters with no immediate end in sight.

AFTER THE S T O

Disaster relief efforts are hazardous by their very nature, and resources often are stretched to the breaking point. There's never a good time for an accident, but this is especially true in disaster situations. Responding to an accident can halt relief efforts and drain the resources intended for disaster assistance.

In response to the Katrina and Rita efforts, the Army Combat Readiness Center published a "Leader's Risk Management Guide for Disaster Relief Operations," found on the Web at https://crc.army.mil/guidance/leaderguides/Disaster_Relief_Leader_Guide.pdf. The following excerpts are intended to complement safety and readiness assessments for leaders and Soldiers assisting in relief efforts. Units deploying to the Gulf Coast or other disaster sites are encouraged to download

the entire guide from the CRC site before deployment.

Personal injuries

- **Eyes:** Soldiers should wear protective lenses, goggles, or face shields when the job calls for it. Activities most likely to produce eye injuries are chain saw work, carpentry, metal work, and motor pool or maintenance work.

- **Ears:** Leaders must enforce the use of hearing protection when personnel are operating heavy equipment, generators, or chain saws; on board Army aircraft; and in any high-noise areas.

- **Head:** Helmets or hard hats should be worn in construction areas in accordance with unit requirements.

- **Hands:** Rings are a common source of personal injury. Personnel frequently catch rings

on the tailgates of vehicles while dismounting, causing severe hand injuries or amputations.

- **Back:** In most cases, back injuries occur when individuals overextend themselves. Leaders must remind personnel to get help when lifting heavy objects and to lift with their legs, not their backs.

- **Feet:** Leaders must enforce wear of protective boots in areas that require toe protection such as maintenance, engineer, warehousing, and materiel-handling facilities. Also ensure personnel change their socks regularly to prevent trench foot and fungal infections.

Health and hygiene

Water

- Ensure water is treated—serious diseases can be transmitted by untreated water.
- Treat all water as if it is



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contaminated. Do not go in the water unless it is necessary or it has been approved by the chain of command.

- Water in trailers should have the chlorine level maintained at 5 ppm. Use water in trailers primarily for showering and cooking because the chlorine taste will discourage Soldiers from drinking it. Bottled water should be the primary source of drinking water.

- All personnel should be immunized appropriately.

Food

- Keep perishable foods below 45 °F or above 140 °F before serving.
- Dispose of perishable foods kept in insulated containers for more than 4 hours.
- If using Meals, Ready to Eat, ensure personnel stay well hydrated to avoid constipation.

- Bacterial diarrhea, viral diarrhea, chemicals, pesticides, and heavy metal poisoning are hazards associated with eating food from unapproved sources.

- Do not consume food procured from or prepared in the immediate hazard area by local personnel.

Latrines and waste disposal

- Designate a field sanitation team (FST) before deployment.
- Ensure FSTs deploy with appropriate equipment and references.
- Ensure portable latrines are available, cleaned regularly, and are located in low-lying areas.
- Ensure methods are available to establish adequate waste disposal procedures.
- Do not burn trash or waste without approval from appropriate military personnel.
- To minimize rodent and stray

animal activity, designate locations and storage facilities for trash away from living and work areas.

Critters

Snake and insect bites

Personnel must leave snakes alone. There are poisonous snakes in many parts of the U.S., but bites from nonpoisonous snakes also can be harmful if they are not cared for properly and become infected. Anyone bitten should immobilize the affected area and seek medical help immediately. When ice is available, apply it to the bite to slow the spread of venom. Tourniquets and attempts to suck venom out of the wound can cause more harm than good.

Bites from spiders, mosquitoes, and other insects can cause illness and lead to infected wounds. Ensure personnel shake



out their clothing before getting dressed and check their boots before putting them on. Where possible, boots should be placed off the ground or inside a waterproof bag or other container. Ensure personnel wear the appropriate seasonal uniform with the sleeves down and apply repellent in accordance with the DOD Insect Repellent System. If possible, use insect repellents that contain DEET.

Animals and other reptiles

Wild animals such as bats, raccoons, and skunks, as well as feral dogs and cats, might be injured, hungry, or have rabies or other diseases. These animals and other domestic pets might be more aggressive or dangerous than usual. Ensure personnel do not taunt, play with, or handle any animals. In addition, alligators are very common in the swampy southeastern United States. Make sure all personnel stay away from alligators.

Blood-borne pathogens

Everyone involved in rescue and cleanup operations must be aware of the risk from blood-borne pathogens. There currently is and will continue to be disease contamination at all rescue sites. Ensure personnel have current Hepatitis B and tetanus immunizations at a minimum. Precautions must be followed, and the equipment below must be provided:

- Latex or rubber gloves
- Over-garments for clothing protection
- Face masks for respiratory protection
- Goggles for eye

protection from splashes or spills

- Bleach and chlorine for cleanup and decontamination of biohazards

- Biohazard bags

A collection site for contaminated items must be established. In addition, sites must be designated for showering and clothing changes before personnel leave for non-contaminated areas.

General

Personnel assisting in site recovery or rescue operations face a variety of hazards. Remind them to:

- Be aware of their surroundings and not enter damaged structures.
 - Be alert for exposed electrical, gas, and other utility lines.
 - Wear gloves and other protective clothing.
 - Avoid moving or tampering with propane tanks.
 - Watch where they step for nails, glass, and other sharp objects.
 - Personnel should not attempt to recover human remains unless they are part of a recovery crew. Ensure personnel are briefed in advance on what to do if human remains are discovered.
 - Ensure personnel have respirators with filters for asbestos. Many older buildings and schools contain asbestos.
- #### **Electrical hazards**
- Large electrical transformers might contain PCBs or cancer-causing chemicals. Electrical lines also might be energized and present a shock hazard. Ensure personnel:
- Do not attempt to move transformers during cleanup.
 - Mark transformers and report their locations to the chain of command.

Power lines

- Downed power lines might be energized. **DO NOT TOUCH.**
- Electricity might be restored to dead power lines without notice. Beware of dead lines and anything touching them.
- Emergency generators must come off line as power is resupplied. Only qualified utility or engineer personnel should conduct the changeover.
- If downed power lines are difficult to see but are in a traffic area, clearly mark the area so no one inadvertently steps on a downed wire.

Hazardous materials

There are many sources of hazardous materials. Remind personnel to:

- Avoid areas near damaged propane tanks, oil containers, or other chemical drums.
- Mark and report suspected waste dump sites to the chain of command and avoid such areas.

Chain saw operations

- Ensure operators receive training before operation, especially in procedures for cutting down trees to ensure trees fall in a safe direction.
- Ensure operators have the physical strength and dexterity to operate equipment.
- Enforce the wear of personal protective equipment including eye protection and gloves.
- Do not cut toward the body.
- Cut with the blade where it enters the drive body.
- Avoid cutting with the tip of the saw to avoid kick-back.
- Do not refuel a hot saw.
- Check for nails, wire, and other metal objects before cutting.

Vehicle operations

General

Vehicle operations in a disaster environment are extremely dangerous. Personnel

must drive defensively and be alert to potential hazards.

- Enforce the use of restraint systems by crew and passengers.
- Establish and enforce safe speed limits for various road and environmental conditions.
- Pair experienced drivers with inexperienced ones to provide supervision and hands-on training.
- Use experienced drivers in difficult terrain.
- Remind drivers to slow down in limited visibility, on rough terrain, and during inclement weather. Driving too fast for conditions is a primary cause of accidents.

Establish procedures for vehicle stops and breakdowns to warn approaching vehicles.

- Reinforce braking and downhill driving procedures with all operators.
- Keep vehicle antennas secured to prevent contact with power lines and other objects.
- Check to ensure operators have installed vehicle antenna tip covers to prevent injury and damage.
- Ensure there are proper floatation devices in each vehicle operating in flooded areas.
- Take into account the maximum fording depth for each vehicle type, and ensure proper fording equipment and accessories are installed before entering water areas (i.e., exhaust extensions).

Preventive maintenance checks and services (PMCS)

- Stress that PMCS is critical, especially under adverse or unusual conditions.
- Ensure operators perform special requirements covered in the "Operating Under Unusual Conditions" section of their respective operator's manual.

Route reconnaissance

- When possible, conduct a physical reconnaissance of the

route to avoid the worst terrain hazards. Mark unavoidable hazards on a strip map and include them in the convoy briefing.

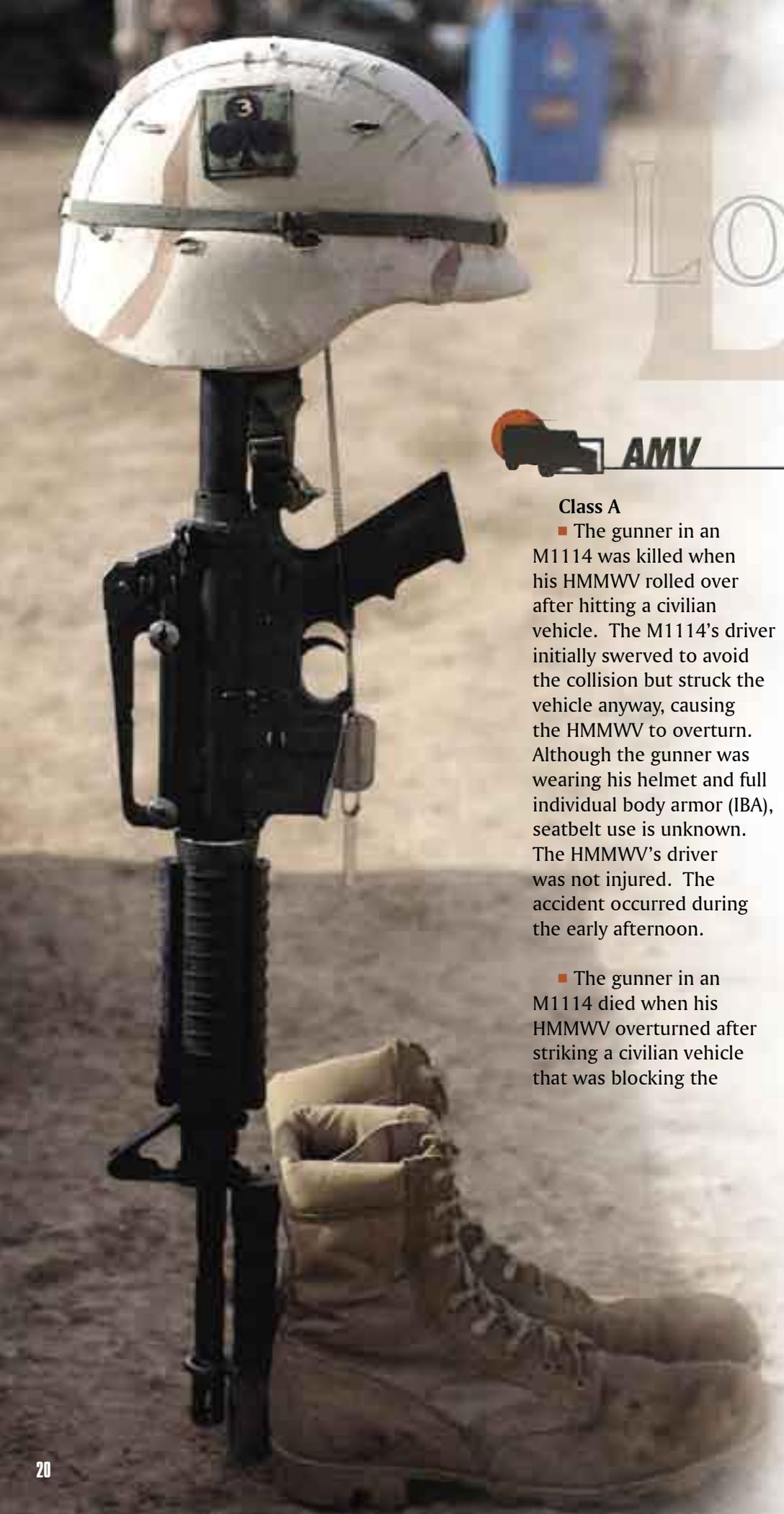
- Reconnoiter the route for bridges or underpasses that might be too low for large vehicles.
- Caution drivers that roads, bridges, and overpasses might not be posted with weight or height restrictions.
- If possible, reconnoiter routes for hazards below the water line before operations begin.

Check water height before driving through to ensure vehicles will not get swept away. A good rule of thumb is to not drive into running water deeper than the vehicle axle.

Ground guides

- Train drivers in the correct use of ground guides, and train all personnel in how to perform as ground guides.
- Stress the importance of ground guides in congested areas and during periods of limited visibility.
- Remind drivers to use two ground guides while backing or when their view is restricted.
- Equip ground guides with suitable lights during periods of limited visibility or darkness.
- Always use ground guides in assembly areas, displaced persons camps, etc.
- Remind drivers to keep ground guides in view at all times and to stop the vehicle if they lose sight of them.
- Instruct ground guides to never walk backward and to stay out of the path of backing vehicles. 

Comments regarding this article may be directed to the editor at (334) 255-1218, DSN 558-1218, or by e-mail at julie.shelley@us.army.mil.



Lost

AMV

Class A

- The gunner in an M1114 was killed when his HMMWV rolled over after hitting a civilian vehicle. The M1114's driver initially swerved to avoid the collision but struck the vehicle anyway, causing the HMMWV to overturn. Although the gunner was wearing his helmet and full individual body armor (IBA), seatbelt use is unknown. The HMMWV's driver was not injured. The accident occurred during the early afternoon.

- The gunner in an M1114 died when his HMMWV overturned after striking a civilian vehicle that was blocking the

roadway. The HMMWV's driver, who was not injured, rammed the back of the civilian vehicle, which refused to move after repeated warnings. The truck commander and another passenger were injured. The gunner was wearing his helmet and full IBA, but seatbelt use is unknown. The accident occurred during the mid-morning.

SEATBELT SUCCESS



st

- A foreign national civilian was killed when his vehicle was struck head-on by an M1117 Armored Security Vehicle. The driver of the civilian vehicle reportedly lost control and caused the collision. The accident occurred during the early evening.

Class B

- Soldier suffered a permanent partial disability when he lost control of the

M977 HEMTT he was driving. The Soldier was negotiating a steep downgrade when he lost control of the vehicle and drove through a ditch. The Soldier suffered a head injury. Seatbelt use is unknown. The accident occurred during the early afternoon.

a concussion. All three Soldiers were wearing their helmets, IBA, and seatbelts. The accident occurred during the early morning.

- Soldier suffered various fractures when he was crushed between the engine and

Class A

The gunner in an M1114 suffered fatal injuries when his HMMWV overturned after swerving to avoid a civilian vehicle. The gunner was crushed when the HMMWV rolled over. The gunner was wearing his helmet and full IBA, but seatbelt use was not reported. The HMMWV's driver was not injured. The accident occurred during the mid-afternoon.

Class C

- Two Soldiers were hospitalized after the up-armored HMMWV they were riding in overturned. The HMMWV's driver was not injured. One Soldier suffered spinal injuries, and the other suffered

transmission of the M88A1 he was servicing. The Soldier had changed the vehicle's engine and was trying to attach it to the transmission. During the accident sequence, the driver was told to turn the vehicle slightly left, at which time the brakes gave way.

STORIES Class C

Spotlighting Soldiers who wore their seatbelts and walked away from potentially catastrophic accidents



- Soldier was driving an M915A2 fuel tanker from a logistical support area to a forward operating base (FOB) when a civilian truck jackknifed on the opposite side of the road. The Soldier steered the tanker to the right to avoid a head-on collision, but the civilian truck spun around and hit the tanker's rear, spilling 4,700 gallons of fuel. A third vehicle then became entangled under the tanker's front bumper. The Soldier was

wearing his seatbelt and helmet and was not injured. The accident occurred during the late morning.

- Three Soldiers, including the gunner, suffered minor injuries when their M1078 Light Medium Tactical Vehicle (LMTV) overturned. The vehicle was going through a checkpoint when it ran through a large crater, jerked left, hit a barrier, and rolled over. The truck commander was treated

and released from the local combat support hospital, and the other two Soldiers returned to duty within 2 weeks. All three Soldiers were wearing their helmets and seatbelts. The accident occurred during the early morning.

- Two Soldiers were treated for minor abrasions after their M915A1 overturned on its side. The Soldiers were returning to their FOB after a long convoy mission and were

hauling two 20-foot containers on a flatbed trailer behind the truck. The driver reportedly was speeding and took a 90-degree turn too fast, causing the trailer and truck to roll over. The Soldiers were taken to the local troop medical center, where they were released and returned to duty. Both Soldiers were wearing their helmets and seatbelts. The accident occurred during the late afternoon.

The Soldiers did not use a tether line to steady the engine while connecting it to the transmission. The accident occurred during the early morning.



Personnel Injury

Class A

■ Soldier suffered fatal injuries when his head struck an M109 Howitzer barrel. The accident happened when the M88A1 recovery vehicle the Soldier was driving lurched forward toward the Howitzer. The accident occurred during the late afternoon.

■ Soldier was killed when an unidentified piece of ordnance exploded in a tent. The Soldier was moving equipment from one tent to another at the time of the explosion. The accident occurred during the early morning.

■ Soldier died at a local hospital after collapsing on post. The Soldier had just completed the 2-mile run portion of the Army Physical Fitness Test and was walking back to his building when he grabbed his leg and fell down. The accident occurred during the mid-morning.

Class C

■ Soldier suffered a gunshot wound and fractures to his leg when an M14 rifle accidentally discharged. The Soldier was in an M1025 HMMWV returning to a FOB after a mission when the rifle fired. The accident occurred during the mid-afternoon.



Lost

WHAT THINK were they

That'll stop you . . .

A Soldier was tasked to perform a road test on an M998 HMMWV following scheduled maintenance. It was a clear, crisp fall afternoon and no one else was on the road. Why not open it up a little—after all, HMMWVs are made to go fast, right? Uh, no, and there's this little thing called the laws of physics that can really mess you up if you're not careful. The Soldier lost control of the HMMWV, skidded across the road, and hit a tree. The one thing he did right was wear his seatbelt, an action that most likely allowed his commander to log the mishap as a Class D accident and not a Class A.

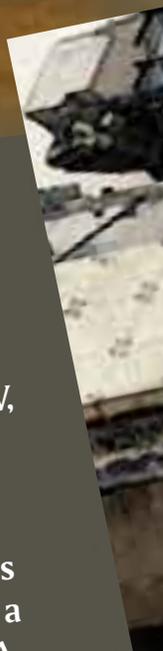


Illustration based on preliminary reports of ground accidents.



ing?

Why don't these things come with a cup holder?

Ah, a vehicle's floorboards, so often used for storage when they shouldn't be—like when an M915A3 is hurtling down the autobahn in the middle of the night. One thirsty Soldier driving a mail truck reached for her water bottle, which she'd stood upright on the driver's side floorboard, only to discover the bottle had fallen over and rolled by the truck's pedals. As she reached down to retrieve the bottle, the truck veered to the right and flattened 50 feet of guardrail. Fortunately, the Soldier wasn't hurt physically, but pride might be another matter. She was ordered to attend remedial driver's training and take a checkride before operating another AMV.



I wasn't expecting that!

There's nothing like a little bang to get your attention, particularly in a combat zone and especially at 0430 on patrol. A Bradley Fighting Vehicle was performing rear security on an early morning mission. The Bradley's gunner was traversing the weapon when, suddenly, a civilian dump truck came out of nowhere.

(Well, not really out of nowhere. It had been on the road the entire time; the Bradley commander just didn't share this information with the gunner.) The jutting weapon barrel plus the passing dump truck equaled one loud noise and more than a few sparks when the two collided.

Once his heart stopped pounding,

the startled gunner realized he was OK thanks to his PPE and seatbelt. The dump truck driver either didn't notice or didn't care that he'd just had a very close encounter of the accident kind because he kept on driving. The cost of damage to the Bradley was just over \$8,000—one expensive communications failure!

HE does rollovers... **YOU
DON'T.**

Maintain crew rollover procedures outlined in Graphic Training Aid (GTA) 55-03-030 and rehearse rollover drills. Ensure drivers and vehicle commanders are familiar with the capabilities and limitations of their assigned vehicles, and brief them on the hazards that cause or contribute to rollovers. Use Composite Risk Management and prepare yourself for the unexpected.



USE COMPOSITE
RISK
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ARMY GROUND RISK MANAGEMENT INFORMATION

Countermeasure

VOL 26 NO 10

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OCTOBER 2005

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CONTENTS

2 Why And How We Do It

5 Don't Look the Other Way

6 Investigator's Forum
Never Enough to Go Around

12 Out of the Run

14 ARAP-Helping Leaders Save Lives

16 Accident Briefs
Seatbelt Success Stories
What Were They Thinking?

features



on the web

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WHY AND

What's the real focus in implementing safety measures in every aspect of a Soldier's life, whether on or off duty, at home or in theater? Do we forget the real meaning of protecting the force? How positive are these measures in relation to real-world events? Do Soldiers even care? These questions should open your eyes and give you some insight as to why Soldiers think of safety as being a pain in their side.



HOW WE DO IT

CPT MARK LEGASPI
101st Airborne Division
Fort Campbell, KY

The real focus of safety obviously is to protect the lives of each Soldier in our ranks. There's no argument about that. However, does this concept always hold true? Is there ever a time when you apply a safety measure to protect not only your Soldiers, but also yourself from reprimand?

Safety must be paramount at all times

for the right reasons. Leaders can't afford to simply "check the block" when it comes to safety. Instead, safety programs must reach out in such a way that Soldiers realize safety isn't something that takes the "fun" out of life.

Risk management is there for a reason—namely to prevent future mishaps based on likelihood or

lessons learned from past accidents. This process saves lives and protects the force. Everyone must evaluate the controls we enforce in our training and everyday activities. You can't have too many controls, but sometimes controls might be excessive.

For example, some units enforce the wear of the full safety reflective vest during

The top half of the page features a photograph showing the silhouettes of several soldiers in a trench. They are positioned against a very bright, hazy sky, likely at dawn or dusk. The soldiers are wearing helmets and carrying equipment, with their forms dark against the light background. The trench appears to be a shallow, earthen dugout.

physical training (PT), while other units issue the yellow reflective belt to their Soldiers. Both items serve the same purpose, but the vest is more awkward than the lightweight, easily identifiable belt. Will Soldiers be seen more easily because the vest is larger? No—the belt works just as well.

In this instance, safety isn't just about being seen; it's also about the training and discipline each Soldier should receive and retain. Soldiers also should know where to conduct PT and places that have a high

traffic flow. They should slow down and look for oncoming traffic. They should run in open areas where they can be seen easily. A reflective vest or belt alone won't save Soldiers from being hit by a car. Leaders must ensure these principles are enforced during unit PT, not just issue a particular piece of equipment.

Soldiers receive much of their safety training through organized safety days that either fit inspection criteria or follow a major accident. The consensus usually is that

these events are a waste of time and the topics covered aren't relevant to real-world operations. Most Soldiers see safety days as checking the block even if the material is useful. The same can be said of weekend or holiday safety briefs. Leaders shouldn't rely solely on these sporadic events to spread the safety message. Soldiers should be trained and ready when they walk out the door to safely complete their mission or drive home.

Safety programs must reflect common sense and

Don't Look the Other Way

MSG JOHN KEEN

Accident Investigator

U.S. Army Combat Readiness Center

In today's fast-paced world, we've come to accept a lifestyle of "getting there fast." But at what cost? In the name of speed, whether it's behind the wheel or getting a job done, we sacrifice safety. You can measure the price of that sacrifice in Soldiers permanently removed from our ranks.

The statistics aren't just numbers—they're Soldiers' lives. Many of our young Soldiers are dying in automobile and motorcycle accidents because they lack good judgment; speed; and drive or ride under the influence of alcohol or while fatigued. Sadly, they die before surviving enough close calls to learn from them. In all too many cases, they believed they could drink and drive without any consequences.

I worked as a state trooper before coming to the Combat Readiness Center to work as an accident investigator. I performed hundreds of motor vehicle accident investigations on people who caused accidents or were victims of someone else's carelessness. Some of the worst experiences in my career were the many times I had to inform a family of a loved one's death. Their responses included guilt, anger, denial, and feeling responsible for the incident.

The response I didn't expect was, "We were wondering when this would happen." Yet that's what I heard from some people. They knew the victim well enough to know something terrible might happen but never did anything about it. They just looked the other way.

That's something to think about. How many times do we see someone

acting in a careless or reckless manner and say nothing? It's our responsibility as friends, Soldiers, and leaders to point out and correct these errors. As leaders, we must discipline wrong behavior and hold individuals accountable for their actions. However, we also have a duty to use our past experiences to help guide and train our Soldiers so we don't lose them prematurely. When we do nothing—when we look the other way and then make excuses when a Soldier is hurt or killed—we're just WRONG!

When we were younger we learned we weren't always the best judge of our abilities. We also learned that Murphy's Law—what can go wrong will—still applied. Today's young Soldiers are no different than we were. They also often overestimate their abilities and turn a blind eye toward danger.

As leaders, we've lived and learned. Now it's our turn to teach our Soldiers to learn and live. They're watching us because we set their goals and our expectations of them. When it comes to safety, if we don't care enough to correct them when they're wrong, they'll think it doesn't matter—that we've chosen to look the other way. But if the phone rings in the middle of the night and the unsafe Soldier we ignored is now in the morgue, we'll personally know the cost of a safety statistic. We won't be able to look the other way then.

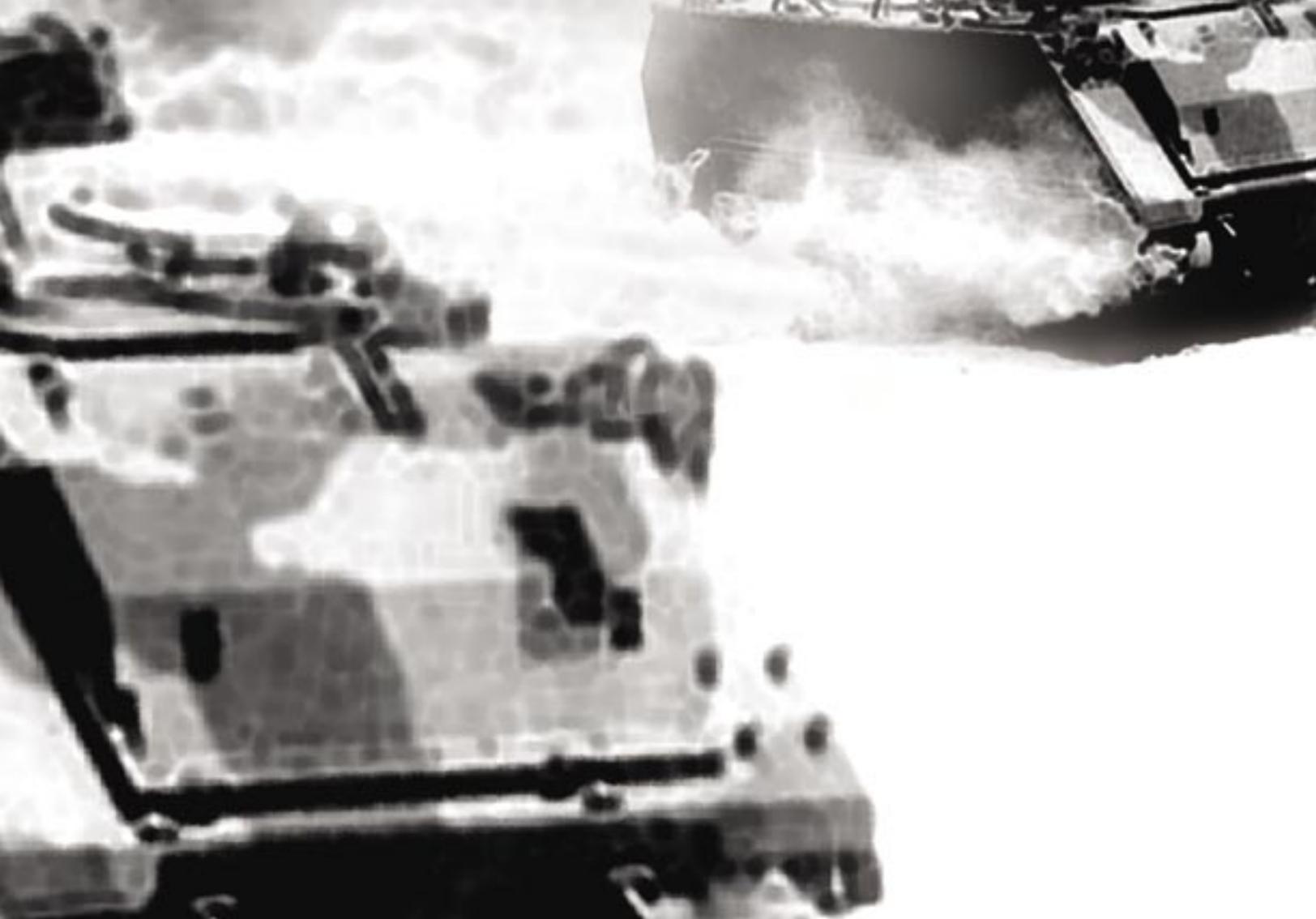
Contact the author at (334) 255-9398, DSN 558-9398, or by e-mail at john.keenjr@us.army.mil.

focus on the real reasons behind their use. These programs are optimized by meaningful, consistent training and the discipline instilled in all our Soldiers. How we implement safety procedures and train the force plays a huge role in helping Soldiers understand why we practice safety in the first place. Safety isn't just another thing our great Army tells us to do—it's the key to keeping our troops ready for the fight. —

Contact the author by e-mail at mark.legaspi@us.army.mil.

NEVER ENOUGH

Nowadays, units are being tasked to perform increasingly complex missions with fewer and fewer personnel. This shortfall is an obstacle, but one that can be overcome. The key is to develop junior subordinates and integrate Composite Risk Management (CRM) at all levels. The unit described here, however, let their personnel shortfall become a fatal obstacle.



H TO GO AROUND

G3, ACCIDENT INVESTIGATION DIVISION
Ground Branch
U.S. Army Combat Readiness Center

Background

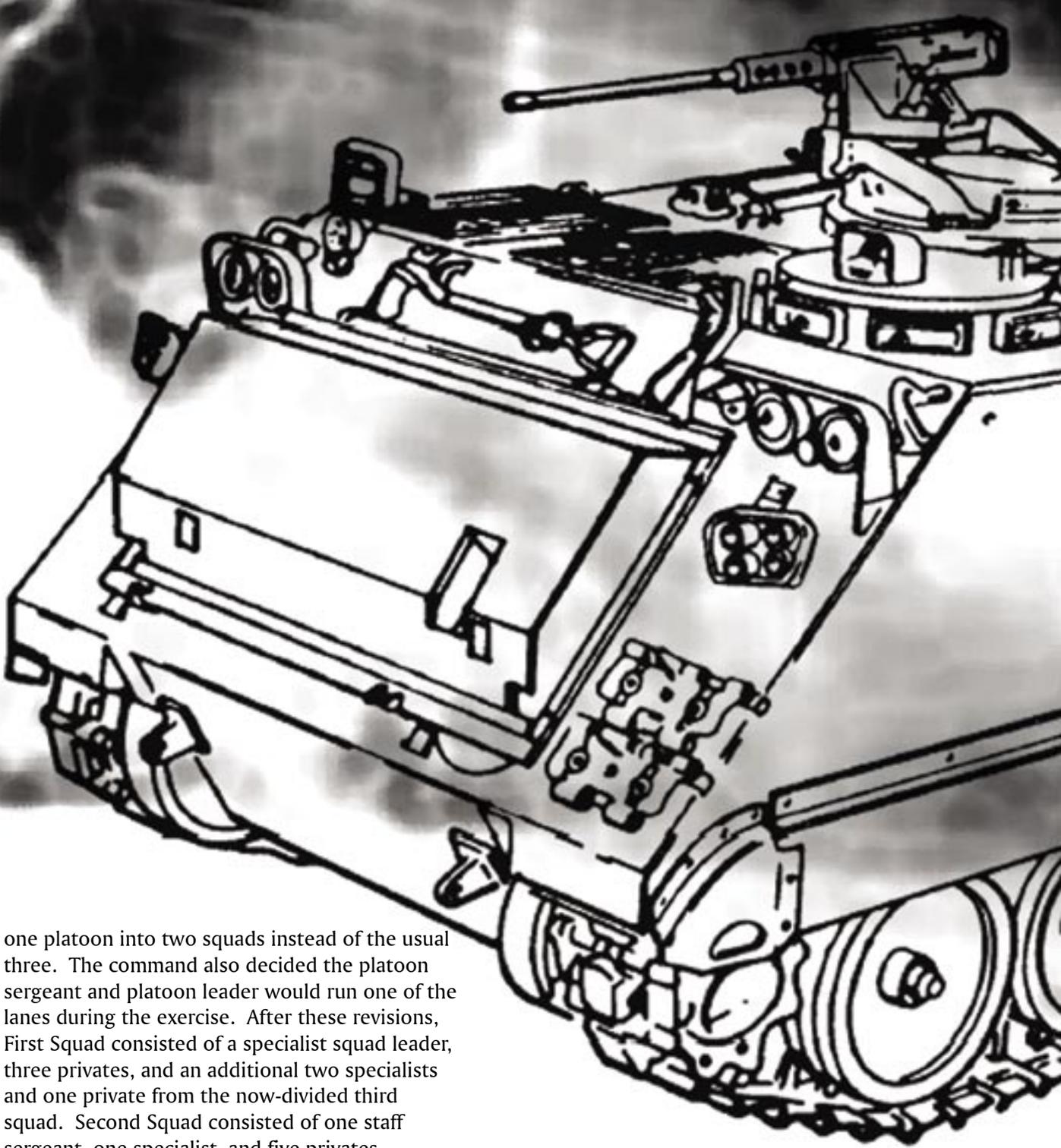
A company-sized unit made up of three platoons returned from Operation Iraqi Freedom in 2004 and had undergone a significant personnel change due to the loss of many NCOs. Additionally, several of the remaining NCOs were in various schools. Even with this lack of enlisted leadership,

the unit was conducting a training cycle to prepare for their return to Iraq in 2005.

The training was battalion-driven and included a field training exercise (FTX) scheduled to last several days. The FTX consisted of unit movement to the training area, followed by preparation and execution of “round robin” squad-level

training lanes. M113A3 Armored Personnel Carriers were to be used to transport troops from lane to lane. Leadership from the battalion down had conducted a walk-through of the training lanes and determined a steep slope at one lane’s entrance was a potential hazard.

Because of the shortage of NCOs, the command divided



one platoon into two squads instead of the usual three. The command also decided the platoon sergeant and platoon leader would run one of the lanes during the exercise. After these revisions, First Squad consisted of a specialist squad leader, three privates, and an additional two specialists and one private from the now-divided third squad. Second Squad consisted of one staff sergeant, one specialist, and five privates.

The squads were set up in this manner and finalized even though there were multiple NCOs in the other platoons' squads. Moreover, a commanding general's policy letter stated there must be an NCO in each vehicle at all times. The First Squad leader—the specialist—was new to the unit and had just transferred to active duty from the National Guard. He wasn't as proficient in his tasks as the other squad personnel.

The morning the company departed for the FTX, the platoon sergeant removed the specialist

as First Squad leader because of his proficiency shortcomings. He replaced the specialist with one of the squad's privates. This Soldier recently had been demoted from specialist to private first class for a past infraction. Nonetheless, he was highly regarded within the unit; the other Soldiers were surprised by the infraction.

The accident sequence

After the company arrived at the FTX area of operations, the personnel assigned to run the



The company commander allowed First Squad to participate in the FTX without direct NCO supervision. He also allowed the squad to operate the M113A3 without an NCO present.

lanes prepared for the next day's exercise. Each vehicle's personnel configuration consisted of the driver in the driver's hatch; the track commander (TC) in the commander's cupola; the squad leader standing behind the commander's cupola and propped through the cargo hatch; and the rest of the personnel in the troop compartment. Locally manufactured seat boxes were installed in the vehicles to

serve as both seats and storage compartments. Seatbelts were secured to the seat boxes, but none of the Soldiers wore them because they were unserviceable.

The next morning, the Soldiers of First Squad woke up, ate breakfast, and conducted their usual activities such as personal hygiene. They then loaded their vehicle in the configuration determined the day before.

En route to their training

lane, they got lost and went to a wrong lane after being told to go there by another squad leader. The lane officer in charge (OIC) gave them directions to the correct lane, and the driver and TC changed positions after a long while. The TC was more experienced at driving the M113A3 than the primary driver.

When First Squad finally reached the correct lane, the new squad leader—the

private—conducted troop leading procedures. He determined the squad didn't have weapons magazines for the lane training. They went to their platoon sergeant's location, secured the magazines, and went back to their training lane.

All the Soldiers dismounted to conduct the lane except the new squad leader, who was standing in the commander's cupola, and the original driver, who was driving the M113A3 again. The vehicle slowly trailed the squad as they conducted the lane. By the time First Squad completed the lane, they were behind schedule due to getting lost earlier. The command was anxious and pressing the squad to get to the next lane.

The squad loaded their vehicle in its previous configuration, with the first TC driving again and the former driver serving as the TC. The squad leader was still standing behind the commander's cupola and was propped through the cargo hatch. As the M113A3 sped to the next training lane, it began traveling faster than the tank trail's posted speed

limit. Their next lane was the first one they'd been to that morning for directions, and the driver was confident he could get there quickly. However, he hadn't been driving earlier in the day; he still was serving as TC at the time.

The driver sped up as he turned onto the road that led to the next lane. There he encountered the extreme downward slope noted earlier during the command walk-through. The tank trail intersected a hard asphalt road that ran perpendicular to the trail at the slope's base. The M113A3 accelerated down the steep grade, crossed the road, and went into an uncontrolled left slide. The vehicle then slid back onto the tank trail, impacted an embankment, and rolled 180 degrees before coming to rest on the cupola's armor plating and the hull's upper left edge.

The squad leader and one Soldier in the troop compartment were ejected and suffered fatal injuries as the vehicle slid to a stop. The five remaining Soldiers suffered moderate to minor injuries. The M113A3 suffered only minor damage.



Why the accident happened

- The driver didn't adjust his speed for existing road conditions when the vehicle descended the steep grade.
- The senior occupant allowed the vehicle's driver to approach and negotiate the steep grade without decelerating or selecting the appropriate transmission gear ratio.
- The company commander allowed First Squad to participate in the FTX without direct NCO supervision. He also allowed the squad to operate the M113A3 without an NCO present.
- The battalion commander recognized the steep grade as a hazard and alerted the lane



seatbelt use. This requirement also wasn't enforced in the unit.

- The vehicle seatbelts weren't attached to standard mounting hard points. Instead, they were bolted

Command personnel must conduct focused CRM training and emphasize their roles and responsibilities in the process. They also must ensure they understand appropriate risk acceptance levels. Command personnel also must include CRM in the planning process and give consideration to their subordinates' proficiency levels.

OIC. However, the battalion commander didn't ensure the hazard and appropriate controls were added to the battalion risk management worksheet.

- The platoon leader and platoon sergeant didn't adjust their planning and troop leading procedures to accommodate a squad wholly comprised of junior Soldiers with no direct NCO supervision. They specifically didn't ensure the squad leader knew or understood the day's missions, routes, or expected hazards.
- Rollover procedures weren't rehearsed or performed correctly during the rollover.
- The vehicle occupants failed to comply with published guidance directing mandatory

to unauthorized, locally manufactured seat boxes and were unserviceable.

- Neither the driver nor the TC was wearing approved eye protection. They were wearing their prescription glasses instead.

Countermeasures

- Ensure vehicle speeds remain within the technical operating procedures for road conditions.
- Senior occupants must be trained and understand their responsibilities.
- Command personnel must conduct focused CRM training and emphasize their roles and responsibilities in the process. They also must ensure they

understand appropriate risk acceptance levels. Command personnel also must include CRM in the planning process and give consideration to their subordinates' proficiency levels.

- A hazard tracking log is a good tool leaders can use to double-check and refine mission-specific risk management worksheets. Leaders must ensure risks are communicated down to the lowest level.

- Leaders must adjust or enhance troop leading procedures with regard to Soldier experience levels and personnel constraints.

- Vehicle crews must conduct hands-on rollover drills at regular intervals.

- Personnel must wear their seatbelts, and leaders must take appropriate command action to enforce their use.

- Leaders must ensure all vehicle modifications are included in the CRM process to help determine residual risk. Leaders then can take appropriate action in developing initial capabilities documents and a request for special mission modification in accordance with paragraph 3-8 of Army Regulation 750-10, *Army Modification Program*.

- Personnel must wear appropriate eye protection. 

Comments regarding this article may be directed to the U.S. Army Combat Readiness Center Help Desk at (334) 255-1390 or DSN 558-1390.

The physical fitness of today's Soldiers is essential to accomplishing the Army's missions. But what happens when a Soldier doesn't meet the standard?

Many Soldiers have died in recent months either during or shortly after physical training (PT). Special programs for at-risk Soldiers are outlined in Field Manual (FM) 21-20, *Physical Fitness Training*. In the incident described below, one such Soldier's leaders failed to heed advice from medical personnel and didn't follow the guidelines set forth in FM 21-20.

The Soldier was new to the unit and was deemed to be overweight and out of shape. Even so, the Soldier was scheduled to perform a 4-mile PT run (which included intermittent calisthenics) with the rest of his unit. The unit was in a combat theater and, due to the high temperature, the run was postponed until 2000 hours. However, the unit medic told both the team and squad leaders the Soldier shouldn't run because of recent medical issues.

The previous day, the Soldier was diagnosed as a possible heat casualty after he passed out in a guard shed. He required 3,000 cc of an intravenous electrolyte solution to treat his symptoms. Unfortunately, neither leader took this information into account. Against the medic's advice, they left the decision up to the Soldier. The squad leader even said, "He can run if he wants to!"

The Soldier decided to run and immediately fell behind the rest of the formation. Two team leaders were tasked to help him finish the exercise. After reaching the turnaround point, the remainder of the squad passed the three Soldiers on their way to the company area. The squad leader then directed the Soldier to return

to the formation as the pacesetter.

The formation slowed to a walking pace after reaching the cool-down point. At that time, the Soldier began staggering from side to side. The other Soldiers lowered him to the ground, and the unit medic began an assessment of the Soldier's condition.

The Soldier was moved to the forward support battalion's medical clinic, where he received two intravenous fluid lines and was immediately placed in ice. Shortly thereafter, medical personnel discovered the Soldier's body temperature was 106 °F. The Soldier was evacuated to a combat support hospital and later to another medical facility out of theater, where he received further intensive medical treatment. It was too little, too late, however. The Soldier's life support was terminated shortly after he arrived at the last medical facility.

A day-to-day unit PT program designed for most Soldiers might not be appropriate for all unit members. Some Soldiers simply can't exercise at the intensity or duration of their peers. Trained and knowledgeable leaders should develop and conduct special programs tailored to these Soldiers' needs. Pages 1 through 11 of FM 21-20 contain guidelines for developing



Out of

MSG MELVINE ALEXANDER
Accident Investigator
U.S. Army Combat Readiness Center



f the Run

these type programs. The three groups of Soldiers that might need special consideration are:

- Those who fail the Army Physical Fitness Test but do not have medical profiles.
- Those who are overweight or over-fat according to Army Regulation 600-9, *The Army*

Weight Control Program.

- Those who have either permanent or temporary medical profiles.

In the end, it's up to leaders to ensure their Soldiers stay in the run. Nothing will ever replace a leader looking a Soldier in the eye and telling

him his individual strengths and weaknesses. Leaders lead, Soldiers follow, and leaders save lives! 

Contact the author at (334) 255-9856, DSN 558-9856, or by e-mail at melvine.alexander@us.army.mil.

A

The U.S. Army Combat Readiness Center (CRC) recently developed the Army Readiness Assessment Program (ARAP) to communicate the Army's strong conviction that Composite Risk Management (CRM) is the best way to defend against the significant losses currently being experienced in the force. Regardless of why or how a Soldier is lost, the result is the same—one less Soldier available for the fight. As accidents in our formations continue to degrade combat power, the CRC is committed to finding innovative ways to reduce accidents, decrease fatalities, and keep our Soldiers fit to continue the Global War on Terror.

ARAP is a Web-based initiative that provides battalion-level commanders with data on their formation's readiness posture through five segments:

- Processes Auditing—assesses the processes used to identify hazards and correct problems
- Reward Systems—assesses the unit's program of rewards and discipline to reinforce proper behavior and correct risky actions

- Quality Control—places emphasis on high standards of performance
- Risk Management—assesses the health of unit processes
- Command and Control—assesses leadership, communication, and policies as they relate to CRM

Designed for use by battalion-sized units, the program asks several questions of battalion commanders. Wouldn't you like to know if your unit is about to experience a mishap? Wouldn't you like to prevent the loss of personnel and equipment? Don't you want to protect your combat power?

One of ARAP's goals is to identify and correct organizational conditions that could increase the potential for mishaps. Following survey administration (the assessment phase), the commander receives one-on-one feedback on key issues regarding

command climate, safety culture, resource availability, workload, estimated success of certain safety intervention programs, and other factors relating to their unit's overall readiness.

Here's how it works. The battalion commander completes a personal telephone registration process with a member of the CRC ARAP team. From there the commander and unit personnel complete the online portion of the survey, which consists of 61 scaled questions that can be answered in about 12 minutes. Once the battalion has taken the survey, the battalion commander calls the CRC to receive an in-depth debrief of the results. This brief includes a discussion of the unit's strengths and weaknesses and also provides suggestions for possible courses of action and solutions used by previous battalion commanders.

ARAP

Helping Leaders Save Lives

CHARLES SCHIEFFER

ARAP Program Manager
U.S. Army Combat Readiness Center

So, what's in it for me?

- All assessments are confidential. Only unit commanders or their designated representatives and the CRC have access to results. A confidential debrief is conducted on a one-on-one basis between the commander and the CRC.
- Assessments might be predictive. Studies conducted by the U.S. Navy over the past 6 years have shown that units

in the survey's lower spectrum have twice the number of fatalities and more than twice the number of Class A accidents.

- All assessments and users are anonymous.
- These assessments are a "free look" inside a unit. They allow commanders to take an honest look at their safety culture and evaluate CRM processes.
- The program is Web-based, quick, and easy:

<https://unitready.army.mil>.

For more information on ARAP or to schedule an assessment for your battalion, contact Mr. Charles Schieffer, ARAP Program Manager, at (334) 255-9362, DSN 558-9362, or by e-mail at charles.schieffer@us.army.mil or arap@crc.army.mil. The ARAP team looks forward to hearing from you! 

Lost



Class A

- Soldier suffered fatal injuries when the M2A2 he was riding in rolled over into a canal. The vehicle was on an early morning patrol with its white lights on at the time of the accident. The Soldier was serving as the vehicle's track commander.



Class A (Damage)

- Four M1113 HMMWVs were destroyed when an electrical fire started in one of the vehicles and spread to the other three. The vehicles were parked in the motor pool. The accident occurred during the late evening.

Class A

- Soldier suffered fatal injuries when the M984 HEMTT he was riding in

overturned. The vehicle was part of a convoy when the driver experienced difficulty with the brakes, causing the rollover. The Soldier was serving as the vehicle's gunner. The driver also was injured. The accident occurred during the late evening.

Class B

- An M1113 HMMWV suffered Class B damage when it ran off the roadway and flipped end over end.

SEATBELT SUCCO



st



Personnel Injury

Soldier also suffered fractures to his arm. The driver was not injured. The accident occurred during the late morning.

Class C

- Soldier suffered back and neck injuries when the M1025 HMMWV he was riding

Class A

- Soldier collapsed and died following a field training exercise. The Soldier had just returned from the exercise and was entering the dining facility

Class A

Soldier was killed when the M1114 HMMWV he was riding in overturned. The HMMWV was providing convoy security on an improved road when it rolled over. The Soldier was serving as the vehicle's gunner and was ejected during the rollover. Two other Soldiers also were ejected but were not injured. The accident occurred during the early morning.

The vehicle was taking part in an OPTEMPO road test at the time of the accident. The driver was wearing his seatbelt and suffered minor injuries. The accident occurred during the late afternoon.

- Soldier's finger was amputated when the M1114 HMMWV he was riding in rolled over. The HMMWV was on its way to a forward operating base when the driver reportedly failed to negotiate a turn and flipped the vehicle. The injured

in suddenly hit a washed out portion of the roadway. The Soldier was participating in a route reconnaissance mission as part of a training center field training exercise and was not wearing his seatbelt. The accident occurred during the early morning.

when he collapsed. He was pronounced dead at the local hospital. The accident occurred during the late afternoon.

- Soldier suffered fatal injuries when a Light Medium Tactical Vehicle (LMTV) struck him during battalion physical

CLASS C

Spotlighting Soldiers who wore their seatbelts and walked away from potentially catastrophic accidents

Class C

- Two Soldiers suffered minor scratches when their M915A2 ran off the roadway and flipped over. The vehicle was towing a flatbed trailer loaded with two 20-foot conexes and was headed to a logistical support area at the time of the accident. The driver was conducting his second run of the day and had been on duty for 20 hours when he fell asleep at the wheel. The vehicle was traveling at an estimated 50 to 55 mph when the driver fell asleep

and lost control, causing the truck to roll over. Both Soldiers were wearing their seatbelts and helmets. The accident occurred during the mid-afternoon.

- An M2A2 Bradley crew escaped injury when their vehicle rolled over. The vehicle was traveling under white lights along a narrow canal road when the driver felt the tracks slip. The vehicle shifted laterally to the right and began to roll after the driver stopped the vehicle.

The driver announced "rollover," and the crew took immediate action. The Soldiers were wearing their seatbelts and personal protective equipment and were returned to duty immediately. The accident occurred during the late evening.

- Three Soldiers suffered minor injuries when their LMTV rolled over after striking a large crater in the roadway. The LMTV was going through a vehicle checkpoint when it

hit the crater and crashed into a barrier before overturning. The driver suffered fractures to his knee and was returned to duty after several days. The gunner suffered fractures to his wrist and was expected to return to duty within 2 weeks. The vehicle commander suffered minor cuts and abrasions and was released for duty immediately. All three Soldiers were wearing their seatbelts and helmets. The accident occurred during the early morning.



training (PT). The Soldier's company was pulling the LMTV when he reportedly fell. The LMTV rolled over the Soldier's chest and abdomen. The accident occurred during the early morning.

- Soldier collapsed and died while conducting personal PT. The Soldier was on TDY status away from home station and was pronounced dead at a local hospital. The accident occurred during the early morning.

- Soldier collapsed and died during a unit PT run. The Soldier was evacuated to a local hospital and pronounced dead a short time later. The accident occurred during the early morning.

- Soldier suffered fatal injuries when an unidentified round exploded. The Soldier was part of an advance party on a range and reportedly retrieved the round, which subsequently detonated. The accident occurred during the late morning.

- Cadet died after collapsing during a company PT run. The cadet was evacuated to a local hospital, where it was discovered his body temperature had risen to 105 degrees. He died a short time

later. The accident occurred during the early morning.

- Soldier died while conducting a land navigation course. The Soldier was reported missing and later found unconscious. He was evacuated to a local hospital, where he subsequently died. Weather (heat) is a suspected factor. The accident occurred during the late afternoon.

- Soldier was electrocuted when he fell onto a railroad track. The Soldier was serving as the officer in charge of rail movement operations. Witnesses reported hearing an explosion and then seeing the Soldier fall onto the track. The Soldier died from his injuries more than 3 months after the accident, which occurred during the late morning.

Class C

- Two Soldiers suffered various minor injuries when they were struck by a HMMWV while running along a roadway. The Soldiers heard the HMMWV approach from behind and moved off the paved roadway onto the right shoulder. The HMMWV's driver became blinded by the sun, which impaired his vision and prevented him from seeing the two Soldiers. The accident occurred during the early morning.

WHAT THINK were they



Lost



King?

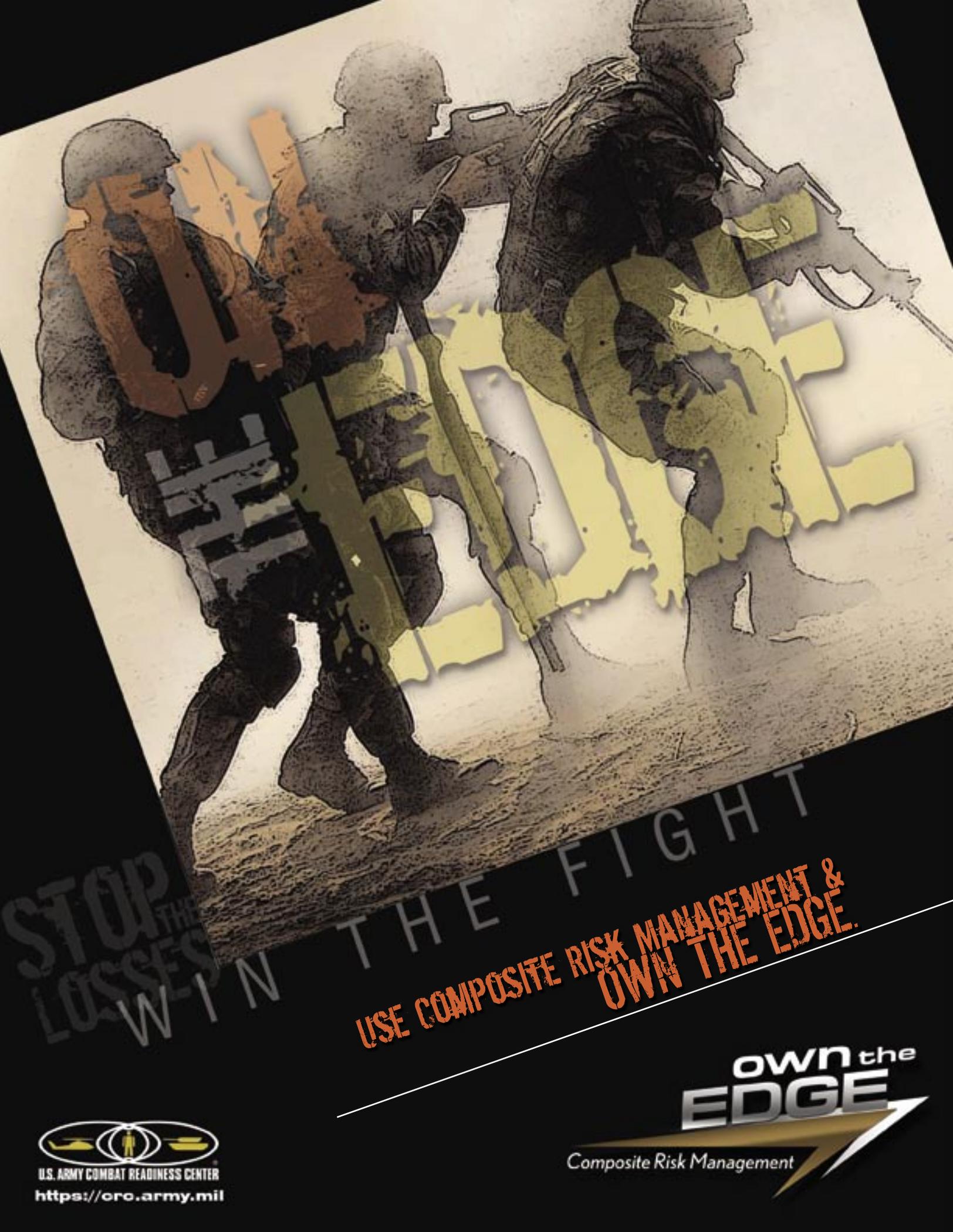
Hey guys...watch this!

People sometimes should heed the advice of those around them. So was the case with one young Soldier who thought it would be fun to discharge a fire extinguisher *without* a fire. The Soldier's wiser comrades repeatedly told him to stop playing around, but the wannabe firefighter scoffed at their advice. He pulled the pin and pushed the lever over and over until he finally got the result he *thought* he wanted. However, the extinguisher discharged right into the Soldier's hand, causing cuts and lacerations that landed him in quarters for 5 days. Sometimes life's lessons have to be learned the hard way.



What did you do that for?

Soldiers are told over and over to train as they'll fight. One Soldier conducting combative training took that guidance a little too far. The Soldier was instructing the class and was engaging another Soldier who was trying to gain the dominant position. The second Soldier's head got caught between the instructor's knees, and the instructor squeezed his knees together to trap his opponent. He realized he'd squeezed a little too hard, though, when the second Soldier said he heard something pop in his head. He was immediately taken to the local hospital, where a CT scan revealed a fracture to the bone under his left eye socket. The injury required surgery to correct. The instructor and his "knees of steel" were allowed to continue training with some restrictions.



STOP THE LOSSES
WIN THE FIGHT

USE COMPOSITE RISK MANAGEMENT & OWN THE EDGE.

OWN the EDGE

Composite Risk Management



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ARMY GROUND RISK-MANAGEMENT INFORMATION

Countermeasure

VOL 26 NO 11/12

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COUNTERMEASURES



CONTENTS

- 2** **DASAF's Corner**
On the Edge...Own the Edge!
- 4** **FY05 Roll Call**
- 14** **FY05: How'd We Do?**
- 16** **Investigator's Forum**
Always to Standard
- 18** **2005 Countermeasure Index**
- 20** **Accident Briefs**
Seatbelt Success Stories
What Were They Thinking?

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Composite Risk Management

DASAF'S CORNER

From the Director of Army Safety



On the Edge... Own the Edge!

Our Army continues to fight the Global War on Terrorism, with our Soldiers fighting two active campaigns against a determined enemy. More and more of our active and reserve component forces are returning home hardened combat veterans. They've been "on the edge" in Iraq and Afghanistan and see themselves as combatants in every aspect of their lives.

This mindset has become clear to me as I've traveled and talked with our Soldiers, NCOs, and officers. They don't want to be viewed as the "guy on a Moped, decked out in all his safety gear, looking like a geek." In their minds they're warriors—a lens through which they view everything they do.

This attitude presents a unique challenge to leaders trying to manage risk. As leaders, we want to capture the energy and intensity that comes with being on the edge and channel it in a constructive way. The goal is to enable these warfighters to manage risk and operate in such a deliberate manner that they "own the edge."

The Combat Readiness Center continues to serve as the knowledge center for all loss, helping commanders connect the dots and providing leaders with tools to manage risk. We know Soldiers are on the edge, but we want them to own the edge through Composite Risk Management (CRM).

As we start another fiscal year, our Army is launching a new campaign to get the CRM message down to first-line supervisors and individual Soldiers. This message is that CRM enables every Soldier to own the edge wherever they're operating. CRM teaches Soldiers how to think—not what to think—and challenges them to be smart about managing risk. This concept puts individual Soldiers and leaders in control of how far on the edge they can operate.

When a Soldier wakes up each day, whether in combat, in training, or off duty, we want them to ask themselves one simple question: "What could take me out today?" Some days it might be the enemy in Iraq or Afghanistan. Some days, like on a 4-day weekend, it might be speed, fatigue, or alcohol. But even in combat, it's possible the thing most likely to take you out is a hazard—not the enemy. No matter the threat, the most effective way to counter risk is CRM.

When Soldiers internalize CRM, they begin making smart risk decisions wherever they are—be it in theater, in garrison, at home, or on the road. Safety transcends from nothing more than a separate paragraph in an operations order or an afterthought during mission planning to something instinctive and intuitive. With CRM, Soldiers become more lethal and ready so they're not just on the edge, they OWN THE EDGE! ⚡

Joe Smith
BG Joe Smith

At the beginning of each fiscal year (FY), Countermeasure runs a “roll call” of Soldiers killed in accidents the year before. The roll call for FY05 includes only those Soldiers that died in ground tactical accidents—POV and off-duty fatalities are excluded. However, these statistics by themselves are sobering: 88 Class A ground accidents resulting in 99 Soldier fatalities, 3 Soldier permanent total disabilities (PTDs), and 3 Army contractor fatalities. In addition, one U.S. Air Force Airman died and two others suffered PTD injuries during Army missions. More than one-third of these accidents occurred in HMMWVs, with the vast majority involving M1114 up-armored vehicles. Physical training (PT) fatalities accounted for nearly a quarter of FY05 Soldier fatalities.

How do these numbers affect readiness throughout not only the Army, but the military as a whole? Think about it—105 troops gone from the fight forever in a single year alone, lost to accidents that, for the most part, were preventable. Any number of factors could’ve saved many of these men and women: better situational awareness, better communication, better standards enforcement, the single click of a seatbelt. But now, it’s not about what should’ve been done—it’s about doing it right in the future.



FY05 ROLL CALL

JULIE SHELLEY
Editor

●Afghanistan, M998

HMMWV: Soldier suffered fatal injuries when the HMMWV he was riding in rolled over into a 10-foot wadi. The HMMWV was the trail vehicle in a convoy, and the driver was attempting to turn the vehicle at the time of the accident. Seatbelt use is unknown, and injury to the driver and a second passenger were not reported. The accident occurred during the late afternoon.

●Iraq, Up-armored

SUV: Soldier was killed when the up-armored SUV he was riding in struck a median and overturned. The Soldier was sitting in the right-front passenger seat at the time of the accident. The SUV's gunner suffered unspecified injuries, and the driver was not injured. Seatbelt use is unknown. The accident occurred during the mid-afternoon.

●United States,

Parachute: Soldier suffered a fatal head injury when he and two other Soldiers became entangled at 700 feet during an Airborne operation. Of the surviving Soldiers, one suffered fractures to his pelvis and hip, and the other suffered a spinal fracture. The accident occurred during the late evening. Details of this accident can be found in the Investigator's Forum article "Always to Standard" in this issue of *Countermeasure*.

●Iraq, Electrocutation:

Soldier suffered a fatal electric shock from the power washer he was using in the unit motor pool. The accident occurred during the early evening.

●Iraq, M1114

HMMWV: Soldier drowned when the HMMWV he was riding in rolled over into a water-filled ditch. The Soldier was serving as the vehicle's gunner. Seatbelt use is unknown. The accident occurred during the early morning.

●Iraq, M915A1 Truck/

Tractor: Two Soldiers were killed when their M915A1 truck hit a pothole, ran off the roadway, and overturned. The truck was pulling a 7,500-gallon water buffalo at the time of the accident. The two Soldiers were trapped beneath the truck and pronounced dead at the accident site. Seatbelt use is unknown. The accident occurred during the late evening.

●United States, Heat

Stroke: Soldier suffered a fatal heat stroke during a land navigation course field training exercise. The Soldier had been reported missing and was found by a search team in a wooded training area. The accident occurred during the late morning.

●Iraq, Non-tactical

SUV: Soldier suffered a severe head injury resulting in a permanent total disability when the non-tactical SUV he was driving was struck head-on by a civilian tractor-trailer. Three other Soldiers suffered unspecified injuries. Seatbelt use is unknown. The accident occurred during the early morning.

●United States, PT:

Soldier collapsed and died during a 3.5-mile run. The Soldier was participating in

scheduled unit PT and was less than 50 meters from completing the run when he collapsed. The Soldier was pronounced dead at a local hospital. The accident occurred during the mid-morning.

●Iraq, M1114

HMMWV: Three Soldiers drowned when their HMMWV rolled over into a canal. The HMMWV was the trail vehicle on a patrol mission and under blackout drive when it ran into a washout and overturned. Those killed included the driver, gunner, and truck commander (TC). Seatbelt use is unknown. The accident occurred during the early morning.

●Iraq, M1114

HMMWV: A U.S. Air Force Airman suffered an unspecified injury resulting in a permanent total disability when the HMMWV he was riding in overturned. The Airman was serving as the vehicle's gunner and was pinned beneath the HMMWV. The accident occurred during the late morning.

●United States, PT:

Soldier collapsed and died during the final run portion of an administrative Army Physical Fitness Test (APFT). The Soldier died at a local hospital. The accident occurred during the late morning.

●Afghanistan,

Explosives: One Soldier was killed and two Soldiers were injured when a flexible linear charge detonated prematurely. The Soldiers were conducting

entry techniques training at their forward operating base range and were using the charge as a breaching charge at the time of the explosion. The accident occurred during the mid-morning.

● **Afghanistan, HMMWV:** Two Soldiers drowned when the HMMWV they were riding in overturned into a river. Recent rains reportedly caused the road to crumble beneath the HMMWV, which was part of a convoy. The vehicle's driver escaped without injury. Seatbelt use and the time of the accident were not reported.

● **Iraq, M1114 HMMWV:** Soldier suffered fatal blunt-force trauma to his head and neck when the HMMWV he was driving was involved in an accident. The type of accident, seatbelt use, and other passengers were not reported. The accident occurred during the late evening.

● **Iraq, M998 HMMWV:** Soldier was killed when the HMMWV he was driving collided with a U.S. Marine Corps logistics vehicle system truck at an intersection. The Soldier was thrown from the vehicle. The accident occurred during the mid-afternoon.

● **Iraq, M1A2 Abrams:** Soldier suffered fatal injuries when the M1A2 he was driving ran off the roadway into a canal. The tank was part of a convoy traveling under blackout drive, and the driver was using the night vision system at the time of the accident. The nature of

the driver's injuries was not reported. The accident occurred during the late evening.

● **United States, M4 Rifle:** Soldier suffered a fatal gunshot wound during convoy live-fire training. The Soldier was part of a four-man dismounted building/room clearing team and was struck in the neck and shoulder. He was pronounced dead at a local hospital. The accident occurred during the mid-afternoon.

● **Iraq, M1114 HMMWV:** Soldier was killed when he lost control of the HMMWV he was driving and rolled the vehicle. The Soldier was attempting to pass a slower convoy when he lost control, crossed the median, and flipped the vehicle. Seatbelt use is unknown. The accident occurred during the late evening.

● **Iraq, M1114 HMMWV:** Soldier suffered fatal injuries when the M1114 he was riding in rolled over. The HMMWV's driver swerved to avoid a civilian vehicle that failed to yield the right of way just before the accident. The Soldier was serving as the vehicle's gunner and was ejected from the HMMWV as it overturned. The accident occurred during the early evening.

● **United States, PT:** Soldier collapsed during routine PT and was pronounced dead a short time later at a local hospital. The accident occurred during the mid-morning.

● **United States, Training:** Soldier collapsed and died following a field training exercise. The Soldier had just returned from the exercise and was entering the dining facility when he collapsed. He was pronounced dead at a local hospital. The accident occurred during the late afternoon.

● **Iraq, M2A2 BFV:** Soldier suffered fatal injuries when the M2A2 he was riding in rolled over into a canal. The vehicle was on an early morning patrol with its white lights on at the time of the accident. The Soldier was serving as the vehicle's track commander. Seatbelt use is unknown.

● **United States, LMTV:** Soldier suffered fatal injuries when an LMTV struck him during battalion PT. The

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FY05 ROLL CALL

Soldier's company was pulling the LMTV when he reportedly fell. The LMTV rolled over the Soldier's chest and abdomen. The accident occurred during the early morning.

● **United States, PT:** Soldier collapsed and died while conducting personal PT. The Soldier was on TDY status away from home station and was pronounced dead at a local hospital. The accident occurred during the early morning.

● **United States, PT:** Soldier collapsed and died during a unit PT run. The Soldier was evacuated to a local hospital and pronounced dead a short time later. The accident occurred during the early morning.

● **United States, Explosives:** Soldier suffered fatal injuries when a grenade

exploded. The Soldier was part of an advance party on a range and reportedly took the grenade as a souvenir during a rest break. The accident occurred during the late morning.

● **Iraq, M1114 HMMWV:** Soldier was killed when the M1114 HMMWV he was riding in overturned. The HMMWV was providing convoy security on an improved road when it rolled over. The Soldier was serving as the vehicle's gunner and was ejected during the rollover. Two other Soldiers also were ejected but were not injured. The accident occurred during the early morning.

● **United States, PT:** Cadet died after collapsing during a company PT run. The cadet was evacuated to a local hospital, where it was discovered his body temperature had risen to 105

degrees. He died a short time later. The accident occurred during the early morning.

● **United States, Training:** Soldier died while conducting a land navigation course. The Soldier was reported missing and later found unconscious. He was evacuated to a local hospital, where he subsequently died. Weather (heat) is a suspected factor. The accident occurred during the late afternoon.

● **Iraq, M984 HEMTT:** Soldier suffered fatal injuries when the M984 he was riding in overturned. The vehicle was part of a convoy when the driver experienced difficulty with the brakes, causing the rollover. The Soldier was serving as the vehicle's gunner. The driver also was injured. The accident occurred during the late evening.





When Soldiers *internalize* CRM, they begin making smart risk decisions.

● **Germany, Electrocution:** Soldier was electrocuted on a railroad track. The Soldier was serving as the officer in charge of rail movement operations and had climbed on an M3 Cavalry Fighting Vehicle loaded on a rail car when witnesses heard an explosion and saw the Soldier fall onto the track. The shock reportedly was caused by a 15-kilovolt power line hanging close to the Soldier's head. The Soldier died from his injuries more than 3 months after the accident, which occurred during the late morning.

● **Iraq, M1114 HMMWV:** The gunner in an M1114 was killed when his HMMWV rolled over after hitting a civilian vehicle. The M1114's driver initially swerved to avoid the collision but struck the vehicle anyway, causing the HMMWV to overturn. Although the gunner was wearing his helmet and full individual body armor, seatbelt use is unknown. The HMMWV's driver was not injured. The accident occurred during the early afternoon.

● **United States, PT:** Soldier died at a local hospital after collapsing on post. The Soldier had just completed the 2-mile run portion of the APFT and was walking back to his building when he grabbed his leg and fell down. The accident occurred during the mid-morning.

● **Iraq, M1114 HMMWV:** The gunner in an M1114 died when his HMMWV overturned after striking a civilian vehicle that was blocking the roadway. The civilian vehicle, which initially refused to move after repeated warnings, left the roadway but abruptly steered back and hit the HMMWV. The HMMWV then spun and rolled over, and all four occupants were ejected. The gunner was wearing his helmet and full IBA. The accident occurred during the mid-morning.

● **Iraq, Explosives:** Soldier was killed when an unidentified piece of ordnance exploded in a tent. The Soldier was moving equipment from one tent to another at the time of the explosion. The

accident occurred during the early morning.

● **Iraq, M1114 HMMWV:** The gunner in an M1114 suffered fatal injuries when his HMMWV overturned after swerving to avoid a civilian vehicle. The gunner, although not ejected, was crushed when the HMMWV rolled over. The gunner was wearing his helmet and full IBA, but the HMMWV did not have a gunner seat restraint system installed. The HMMWV's driver and other passengers were belted in and suffered minor injuries. The accident occurred during the mid-afternoon.

● **Kuwait, M88A1 Recovery Vehicle:** Soldier suffered fatal injuries when his head struck an M109 Howitzer barrel. The accident happened when the M88A1 the Soldier was driving lurched forward toward the Howitzer. The accident occurred during the late afternoon.

● **United States, M16 Rifle:** Soldier suffered a fatal gunshot wound to his forehead during live-fire training. The Soldier was evacuated from the training area and died at a local hospital. The accident occurred during the early evening. Details of this accident can be found in the Investigator's Forum article "Is There Anybody Downrange?" in the August 2005 *Countermeasure*.

● **Iraq, M1114 HMMWV:** Soldier was killed when the HMMWV he was riding in rolled over. The

FY05 ROLL CALL

Soldier was serving as the vehicle's gunner and was pinned under the vehicle after the accident. The other passengers and driver were not injured. The accident occurred during the early morning.

● **United States, PT:** Soldier collapsed and died after completing a unit conditioning obstacle course and 2-mile run. The Soldier was pronounced dead at a local medical center. The accident occurred during the early morning.

● **United States, PT:** Soldier collapsed and died while running during PT. The Soldier was transported to a local medical center, where he died a short time later. The accident occurred during the mid-morning.

● **United States, M113A3 APC:** Two Soldiers suffered fatal injuries when the M113A3 APC they were riding in rolled over. The vehicle's driver lost control when the APC gained speed going down a hill. Five other Soldiers in the vehicle suffered moderate to minor injuries. The accident occurred during the mid-afternoon. Details of this accident can be found in the Investigator's Forum article "Never Enough to Go Around" in the October 2005 *Countermeasure*.

● **Kuwait, PT:** Soldier collapsed on a track while running and was pronounced dead within an hour at a local troop medical center. The accident occurred during the early morning.

● **United States, PT:** Soldier collapsed and died while taking the APFT. The Soldier did not respond to lifesaving procedures. The accident occurred during the early morning.

● **Iraq, Fire:** Two Soldiers suffered fatal burns while performing guard duty in an observation tower. The Soldiers were wearing ghillie suits at the time of the accident. The source of the fire is undetermined. The accident occurred during the late evening.

● **United States, PT:** Soldier collapsed and died following the 2-mile run portion of the APFT. The Soldier said he felt lightheaded just before he collapsed and stopped breathing. He was pronounced dead at a local hospital. The accident occurred during the mid-morning.

● **United States, Parachute:** Soldier suffered a permanent total disability when he failed to eject his equipment during a free-fall jump and impacted the ground. The Soldier suffered injuries that reportedly will render him quadriplegic. The accident occurred during the mid-afternoon.

● **Iraq, M1025 HMMWV:** Soldier drowned when the HMMWV he was riding in rolled over into a water-filled ditch. The Soldier was serving as the vehicle's gunner. The Soldiers were on patrol when the road beneath them gave way, causing the

HMMWV to overturn into the ditch. The accident occurred during the early afternoon.

● **Iraq, M1075 HEMMT:** Soldier suffered fatal injuries when the HEMMT she was riding in struck a barrier and overturned. The driver reportedly lost control of the vehicle before hitting the barrier. The deceased Soldier was serving as the TC. The accident occurred during the late evening.

● **United States, M1025 HMMWV:** Soldier was killed when the HMMWV he was driving rolled over. Three other Soldiers suffered minor injuries. The HMMWV was part of a convoy traveling from their field training site back to garrison. The accident occurred during the early evening. Details of this accident can be found in the Investigator's Forum article "Too Little Training, Too Much Speed" in the June 2005 *Countermeasure*.

● **Iraq, M1114 HMMWV:** Two Soldiers were killed when their M1114 overturned after striking another M1114 during a convoy movement. One of the deceased Soldiers was serving as the vehicle's gunner, and the other deceased Soldier was a passenger. The TC suffered minor injuries, and the driver was not injured. None of the Soldiers were wearing seatbelts, and the deceased and injured occupants were ejected from the vehicle. The accident occurred during the late afternoon.

● **Iraq, M16 Rifle:** Soldier suffered a fatal gunshot

wound when the Soldiers at the traffic control point he was manning opened fire on a civilian vehicle. The Soldiers opened fire after the vehicle's driver failed to stop after repeated warnings. The accident occurred during the mid-evening.

● **Iraq, M1114**

HMMWV: Two Soldiers drowned when their M1114 rolled over into a canal. The HMMWV's driver was backing the vehicle near a drainage ditch when the bank suddenly collapsed, overturning the vehicle into the water. The two deceased Soldiers were serving as the HMMWV's driver and TC. Both Soldiers were wearing their seatbelts. The accident occurred during the mid-morning.

● **Iraq, M915A2 Truck/Tractor:**

Soldier suffered fatal injuries when the M915A2 she was driving overturned after colliding head-on with a civilian vehicle on a curve. The vehicle was towing a fuel trailer, and the driver entered the curve at an excessive speed. The assistant driver suffered minor injuries. Neither Soldier was wearing their seatbelt. The accident occurred during the mid-morning.

● **Iraq, Explosives:**

Soldier died when an explosion occurred inside a bunker. Several Soldiers were placing AT-4s inside the bunker, and the deceased Soldier was in a storage room at the time of the explosion. The accident occurred during the mid-morning.

● **Iraq, M1114**

HMMWV: Three Soldiers drowned when their M1114

overturned into a canal. The HMMWV was part of a patrol convoy and was discovered missing after several other vehicles made a turn. The three Soldiers were wearing seatbelts. Seven military personnel suffered hypothermia and one U.S. Air Force Airman died during the rescue and recovery operations. The accident occurred during the early morning.

● **Iraq, M998 HMMWV:**

Soldier was killed when his M998 HMMWV collided with an M1114 HMMWV. The deceased Soldier was driving the M998 and was ejected from the vehicle, resulting in massive head injuries. He was not wearing his seatbelt or helmet. The accident occurred during the early evening.

● **Afghanistan,**

Forklift: Soldier suffered a permanent total disability when she slipped from a forklift while stocking items in a warehouse. The Soldier was standing on the forklift's forks and lost her balance as the driver was backing the vehicle. The Soldier fell about 10 feet to the concrete floor below. The accident occurred during the mid-afternoon.

● **Iraq, M1078 LMTV:**

Soldier died when the LMTV he was driving struck a barrier and rolled over. The vehicle was part of a day convoy, and visibility had been reduced by dust. The Soldier was not wearing his seatbelt and was partially ejected from the vehicle. The TC also was not wearing his seatbelt but suffered only minor injuries. The accident occurred during the mid-morning.

● **United States,**

Stryker: Soldier was killed after being struck by a tree limb. The Soldier was a passenger in a Stryker during driver's training. The Stryker clipped the side of several trees, causing the limb to fall. The accident occurred during the mid-afternoon.

● **Iraq, ACV:** One Soldier and one Department of Defense contractor were killed when their ACV was broadsided by a Stryker. The deceased Soldier was driving the vehicle. A U.S. Air Force Airman riding in the ACV suffered a severe head injury resulting in a permanent total disability. The ACV's gunner suffered a broken leg when he was thrown from the vehicle. Seatbelt use and the type of ACV were not reported. The accident occurred during the early afternoon.

● **United States, PT:**

Soldier died after complaining of chest pains during a PT test. The Soldier was transferred to a local hospital, where he went into cardiac arrest and died. The accident occurred during the early morning.

● **United States,**

Parachute: Soldier was killed after she hit the ground during an Airborne operation. The Soldier made an improper exit out of the aircraft and became twisted in the parachute's risers and suspension lines, causing the main chute to remain closed. A suspension line also caught under the Soldier's arm and prohibited her from opening the reserve chute. The accident occurred during the early afternoon.

FY05 ROLL CALL

● **Iraq, M2A2 BFV:** Five Soldiers drowned when their BFV overturned into a canal. The road beneath the vehicle collapsed, causing the vehicle to roll over into the water on its top. Two other Soldiers were treated for hypothermia and lung and airway distress. The BFV was the trail vehicle in a tactical road march convoy and had been in the water for about 45 minutes before the other vehicle crews realized it was missing. The accident occurred during the early evening. Details of this accident can be found in the Investigator's Forum article "Hidden in Plain Sight" in the April 2005 *Countermeasure*.

● **Kuwait, PT:** Soldier collapsed and died following a 1.5-mile PT run. The Soldier was transported to a local hospital, where he died 35 minutes later. The accident occurred during the late afternoon.

● **Iraq, M1114 HMMWV:** Two Soldiers drowned when their up-armored HMMWV overturned into a drainage ditch. The driver steered the HMMWV too close to the ditch's edge during a right turn, and the vehicle landed upside down in 5 feet of water. The accident occurred during the mid-evening. Details of this accident can be found in the Investigator's Forum article "A Cold, Wet Way to Die" in the April 2005 *Countermeasure*.

● **Iraq, AK-47:** Soldier suffered a fatal gunshot wound during a joint patrol with foreign national troops. One of the foreign troops' AK-

47s accidentally discharged, striking the Soldier. The accident occurred during the late afternoon.

● **Iraq, .50-cal Machine Gun:** Soldier suffered a fatal gunshot wound to his head when a .50-cal machine gun discharged in the motor pool. The Soldier had driven his M1A1 tank into the motor pool after a combat mission, and the tank's crew was securing the gun when it discharged. The accident occurred during the early evening.

the vehicle did not stop at the checkpoint despite vocal and hand signals, as well as warning shots. The accident occurred during the late afternoon.

● **Iraq, M1114 HMMWV:** Soldier was killed when the HMMWV he was driving was struck by a civilian vehicle. The HMMWV rolled over twice after the collision, and the deceased Soldier and two other passengers were ejected after the doors opened and separated from the vehicle. None of the Soldiers were wearing their seatbelts. The



We are losing Soldiers in accidents every 32 hours. When we take a holistic look at Soldier fatalities — combat and non-combat — we find a Soldier dies every 9 hours.

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● **United States, M998 HMMWV:** Soldier died after a HMMWV struck him during a battalion-level tactical road march. The accident occurred during the late morning.

● **Iraq, AK-47:** Soldier suffered a fatal gunshot wound when he and a group of Soldiers and foreign national troops opened fire on a civilian vehicle that failed to stop at a checkpoint. The civilians in

deceased Soldier suffered a skull fracture, and the other two Soldiers suffered various injuries. The accident occurred during the early afternoon.

● **Kuwait, M1070 Truck/Tractor:** Two Soldiers were killed and two other Soldiers were seriously injured when they were struck by a civilian vehicle while changing a tire on an M1070 truck. One of the injured Soldiers suffered leg fractures resulting in a permanent total

disability. The accident occurred during the mid-morning.

● **United States, M4 Rifle:** Soldier suffered a fatal gunshot wound while participating in a live-fire room-clearing exercise. The accident occurred during the mid-afternoon. Details of this accident can be found in the Investigator's Forum article "It Was an Easy Range" in the March 2005 *Countermeasure*.

● **Iraq, M984E HEMTT:** Soldier died when the HEMTT wrecker she was driving collided head-on with a HET during a convoy movement. The vehicles were part of two separate convoys passing each other on a section of roadway under construction. The Soldier oversteered the HEMTT after running off the roadway, causing the vehicle to cross into the HET's path. Neither the Soldier nor her TC was wearing their seatbelts. The accident occurred during the late afternoon.

● **Iraq, M1114 HMMWV:** Soldier suffered fatal injuries when the HMMWV he was riding in struck a barrier and rolled over during a convoy movement. The Soldier was serving as the vehicle's gunner. Seatbelt use is unknown. The accident occurred during the late evening.

● **Afghanistan, M1037 HMMWV:** Soldier was killed when the HMMWV he was riding in rolled over into a 4-foot embankment. The driver, who was not injured, was attempting to

negotiate the embankment during a combat patrol. The deceased Soldier was serving as the vehicle's gunner. Both the gunner and driver were wearing their seatbelts. The accident occurred during the mid-evening.

● **Iraq, M1114 HMMWV:** Soldier died when the HMMWV he was riding in rolled over. The driver lost control of the HMMWV while changing lanes. The deceased Soldier was serving as the vehicle's gunner and was ejected. No other injuries were reported. The accident occurred during the early afternoon.

● **Iraq, M1114 HMMWV:** One Soldier was killed and two others were injured when their up-armored HMMWV overturned during an escort mission. The deceased Soldier was serving as the truck's gunner. The driver was attempting to pass a civilian vehicle when it swerved in the HMMWV's direction. The HMMWV then left the roadway and the driver lost control when the vehicle hit a pothole, causing it to roll over three times. Both the driver and gunner were not wearing their seatbelts and were ejected. The TC was wearing his seatbelt and suffered a split lip. The accident occurred during the early afternoon.

● **Iraq, M923A2 5-ton Truck:** Soldier was killed when the 5-ton truck he was riding in ran off the roadway and overturned into an irrigation canal. The Soldier, who was serving as

the TC, was trapped in the truck following the rollover and drowned. The driver suffered minor contusions and bruises. The accident occurred during the mid-afternoon.

● **Afghanistan, Explosives:** Soldier was killed when a grenade detonated in the equipment kit he was repacking. The Soldier lost an arm and a leg in the initial explosion and died 4 days later. The explosion occurred in the Soldier's living quarters during the early evening.

● **Iraq, M1025 HMMWV:** Soldier suffered fatal injuries when the HMMWV he was riding in crashed into a parked M1A1 tank on a bridge. The Soldier was serving as the vehicle's TC. The tank's infrared flashers were activated at the time of the accident. The degree of injury to the other Soldiers and seatbelt use were not reported. The accident occurred during the early morning.

● **Iraq, M998 HMMWV:** One Soldier was killed and eight other Soldiers suffered minor to serious injuries when their HMMWV rolled off a 20-foot embankment into an aqueduct spillway during a night combat patrol convoy. The driver steered the HMMWV too close to the spillway's edge during a right turn. The deceased Soldier was killed when an add-on armor plate broke off the HMMWV as it impacted the ground and pinned him under the vehicle. Seatbelts were not available in the accident vehicle. The



FY05 ROLL CALL

accident occurred during the early morning. Details of this accident can be found in the Investigator's Forum article "Why Didn't You Tell Me That?" in the February 2005 *Countermeasure*.

● **Iraq, M923A1 5-ton Truck:** Soldier suffered fatal head injuries when the 5-ton gun truck he was riding in rear-ended a contractor refrigeration truck. The Soldier, who was serving as the vehicle's gunner, was sitting on the turret's ring mount and was ejected. The 5-ton struck the contractor truck at an estimated speed of 40 to 45 mph in a dust cloud.

The driver was wearing his seatbelt and suffered minor injuries. The accident occurred during the early morning.

● **Iraq, M1117 ASV:** Soldier was killed when the M1117 ASV he was riding in was struck by a POV at an intersection. The M1117, which was stopped at the intersection, overturned several times. The Soldier was serving as the M1117's gunner. The accident occurred during the mid-morning.

● **Iraq, M1A2 Abrams:** Soldier was killed when the

M1A2 tank he was riding in overturned en route to a refueling operation. The accident occurred during the early morning.

● **United States, Explosives:** Two Army contractors were killed and another suffered a permanent partial disability when an explosion occurred inside a propellant storage bunker. The contractors were moving a steel drum containing M-9 propellant for storage. The barrel apparently tipped over during movement, causing its lid to come open and spill the propellant on the floor. The propellant then ignited from an unknown spark source. The accident occurred during the mid-afternoon.

● **Iraq, M1114 HMMWV:** Soldier was killed when the M1114 HMMWV he was riding in overturned. The Soldier was ejected from the vehicle when one of its doors separated during the rollover. The HMMWV was operating in blackout drive. The accident occurred during the early morning.

For more information on accident prevention or statistics, please contact the Army Combat Readiness Center's Help Desk at (334) 255-1390, DSN 558-1390, or by e-mail at helpdesk@crc.army.mil.

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TOP THE
BUSSES

WIN THE FIGHT

own the
EDGE

Composite Risk Management

FY05 HOW'D WE DO?

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and Statistical Analysis Division
U.S. Army Combat Readiness Center

The Army experienced 1,455 Class A through C ground accidents, excluding Privately Owned Vehicle mishaps, in Fiscal Year (FY) 2005. Personnel Injury-Other (PIO) incidents were responsible for 72 percent of reported ground accidents, and Army Motor Vehicles (AMV) accounted for 17 percent. Army Combat Vehicle (ACV), Army Operated Vehicle, and Other Army Vehicle accidents combined were responsible for 8 percent of the Class A through C totals, leaving fire and explosives with 3 percent. These accidents combined killed 126 Soldiers and cost the Army nearly \$40 million.

AMV

According to the year-end review article in the December 2004 *Countermeasure*, there were 255 Class A through C AMV accidents reported in FY04. For FY05, there currently are 243 Class A through C AMV accidents in the Army Combat Readiness Center (CRC) database. However, as delayed reports come in, that number is likely to climb and equal or even surpass the FY04 total. About 53 percent of AMV accidents in FY05 involved HMMWVs, which have become the focus for military officials concerned with

decreasing accident and fatality rates.

In terms of AMV mishaps by accident classification, Class A numbers remained relatively stable in FY05, with 46 compared to 47 in FY04. The number of Soldiers killed in these accidents—49—remained unchanged from FY04. Nearly 76 percent of these 49 Soldiers were killed in HMMWVs. Also, 81 percent of the 31 HMMWV Class A accidents involved rollovers. The M1114 up-armored HMMWV accounted for almost 72 percent of AMV rollovers. Finally, 42 of

the 46 AMV accidents occurred outside the U.S., primarily in Iraq, Afghanistan, and Kuwait.

ACV

The number of FY05 ACV accidents was slightly lower than those reported in FY04. There currently are 60 Class A through C ACV accidents for FY05 in the CRC database—about 19 fewer than FY04. Similar to FY04, the M1-series tank accounted for the greatest number of Class A through C reports with 27 percent, or 16 accidents. The Bradley Fighting Vehicle (BFV)

made up 25 percent, or 15 total, of the 60 Class A through C accidents. In all, 14 Soldiers died in FY05 ACV accidents: 6 in BFVs, 2 in Strykers, 2 in M1s, 2 in Armored Personnel Carriers, 1 in a Recovery Vehicle, and 1 in an Armored Security Vehicle.

Fire

There were 17 Class A through C fire-related accidents in FY05, a decrease from FY04's 19. Two of FY05's fire accidents were Class As. In one of these accidents, two Soldiers suffered fatal burns while performing guard duty in an observation tower.



SUMMARY OF ARMY PERSONNEL FATALITIES

PRIMARY ACCIDENT DESCRIPTION	TOTAL
Army Combat Vehicle	14
Army Motor Vehicle	49
Army Operated Vehicle	0
Explosives	4
Fire	2
Other Army Vehicle	0
Personnel Injury-Other	57
TOTAL	126

PRIMARY ACCIDENT DESCRIPTION	A	B	C	TOTAL
Army Combat Vehicle	13	11	36	60
Army Motor Vehicle	46	19	178	243
Army Operated Vehicle	3	1	35	39
Explosives	6	7	12	25
Fire	2	4	11	17
Other Army Vehicle	1		19	20
Personnel Injury-Other	62	20	969	1,051
Total	133	62	1,260	1,455

Explosives

There were 25 Class A through C explosives accidents in FY05, a 39-percent increase from FY04, when 18 explosives accidents were reported. Four Soldiers were killed by explosives in FY05. Two Soldiers were killed by a premature detonation while destroying a cache of captured enemy ammunition at an ammunition supply point. Another Soldier died while improving an area around an ammunition bunker when the ammunition caught fire and exploded. The fourth fatality was attributed to indirect fire.

PIO

There was a 7-percent overall decrease in PIO accidents in FY05, but 4 more fatalities than FY04—62 versus 58. In terms of Class B and C accidents, there were a combined 1,074 in FY04, while 989 have been reported in FY05. Although this decrease might seem like good news, delayed reports probably will increase these numbers. The top three primary activities involved include parachuting with 23 percent; physical training with 16 percent; and sports with 14 percent. There were 2 parachuting fatalities, 14 physical training fatalities,

and 13 sports-related fatalities.

Conclusion

Overall, PIO accidents continue to cause the majority of Soldier injuries and fatalities, with AMV accidents a not-too-distant second. The CRC has developed a number of useful tools to assist leaders and individual Soldiers in assessing the hazards found on the battlefield and at home. These tools include Preliminary Loss Reports, the Risk Management Information System, the Accident Reporting Automation System, Close Calls, and the

Army Readiness Assessment Program, all of which can be found on the CRC Web site at <https://crc.army.mil>. Let's turn the arrow down for FY06 and own the edge! 

Editor's note: PIO accidents involve injury to personnel not covered by any other accident type. These statistics are current from the CRC database as of 1 November 2005. Delayed reports and follow-up details on preliminary reports could change the statistics, figures, and findings.

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Every Soldier in our Army must constantly uphold standards. When participating in live-fire exercises, specialty training, or Airborne operations, strict adherence to standards is critical in ensuring realistic, meaningful, and safe training.

Leaders at all levels must ensure their Soldiers clearly comprehend, train to, and maintain standards during prolonged operations. Unfortunately, however, even units with favorable standards climates sometimes fall victim to accidents. A recent parachute accident illustrates the consequences of a Soldier-level standards breach and begs the question, "What more can be done?"

Background

A specialist and a private first class occupied the sixth and seventh jump positions on the right side of a C-17A as it approached the drop zone (DZ). A third Soldier, another private first class, was in the fifth jump position on the aircraft's left side. Each Soldier was scheduled to exit the aircraft during its first pass over the DZ.

The primary jumpmaster (PJ), a master sergeant, began the operation by pushing a mortar bundle through the aircraft's right door as it flew over the pre-programmed release point and after the green light illuminated. The PJ visually cleared the bundle by leaning out the right door. He then came back inside the aircraft and issued the "go" command to the first Soldier. Upon seeing the first Soldier exit the right door, the assistant jumpmaster (AJ), a staff sergeant, on the left door "tapped out" the first Soldier on his side.

Approximately 4 seconds later, the specialist in sixth position on the right side exited the aircraft. Less than 1 second later, the private in fifth position on the left side exited through his door. At nearly the same time, the other private in seventh position on the right side jumped.

The two privates from the left and right doors became entangled soon after they exited the aircraft. They then became entangled with the specialist. The entangled parachute

canopies experienced air starvation, causing a leap-frog effect. Only one full canopy was observed during the final seconds of the descent, and no reserve chutes were deployed.

All three Soldiers impacted the ground nearly simultaneously. Their final resting locations coincided with the impact points. The private and specialist who exited the aircraft from the right door impacted the ground side by side. The private who exited the aircraft from the left door impacted the ground 3 feet and 6 inches to the southeast.

The specialist suffered a broken pelvis and broken right femur. The private from the right side suffered two broken ankles, broken tibias, and lower back and spinal injuries. The private from the left side impacted the ground with the upper-right portion of his head and suffered fatal injuries.

Why the accident happened

The three Soldiers exited the aircraft nearly simultaneously, which severely reduced the interval between the sixth and seventh Soldiers on the right side. It also nearly eliminated the stagger required to prevent personnel exiting the aircraft through opposing doors from becoming too close as their parachutes deployed.

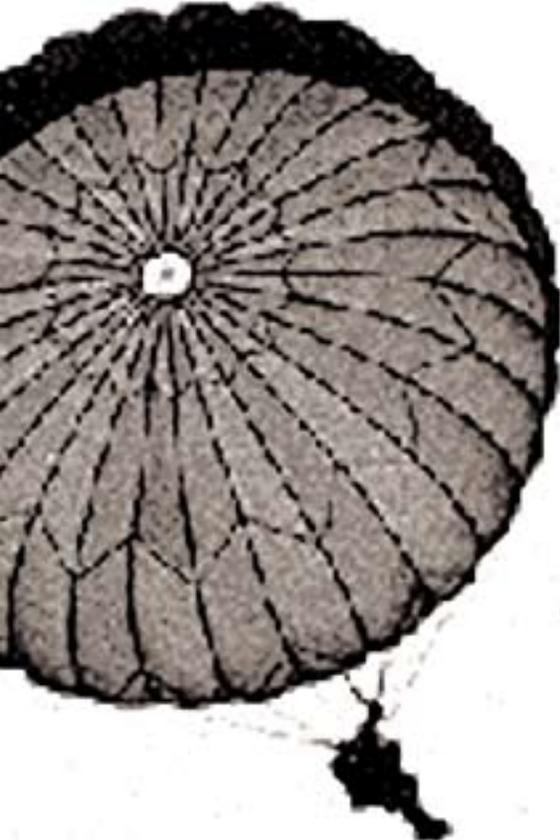
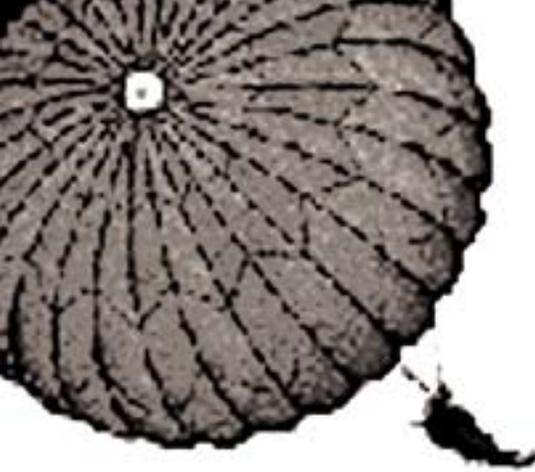
The sixth and seventh Soldiers exited the right door without maintaining the proper separation interval. Had the private on the right side—the one in seventh position—maintained the proper interval between himself and the Soldier directly in front of him, the opposing-door stagger would've been maintained. He wouldn't have become entangled with the jumper directly in front of him or caused the eventual three-way entanglement.

The investigation revealed the PJ and safety on the right-side door performed their duties in accordance with all applicable regulations and field manuals. Neither the PJ nor safety could've reasonably prevented this accident.

What more could've been done?

We might never know why the Soldier in this accident failed to maintain the proper

Always to Sta



Conclusion

Leaders can use techniques ranging from simple “hip-pocket” training to full-blown mission rehearsals to assess and emphasize their standards climate. A

interval between himself and the Soldier ahead of him. The two most likely reasons for his standards breach were his inexperience and excitement as he approached the aircraft’s exit door. However, he wasn’t the only inexperienced Soldier on the aircraft, and he certainly wasn’t the only excited one. His leaders did everything required (and more) to ensure he was prepared. He participated in rehearsals, sustained Airborne training, and all other prerequisite training. Both his AJ and PJ looked him in the eye just before the mission.

What more could’ve been done? There are no easy answers, nor is there a “go/no-go” light installed on Soldiers’ foreheads. Therefore, leaders must:

- Emphasize the specific standards that must be followed to ensure mission success.
- Leverage the standards with stories, facts, and real-life examples of how proper implementation can and will reduce injuries and save lives.
- Lastly—and most importantly—ensure someone in the chain of command is responsible for guaranteeing every Soldier in the formation is complying with the standards.

favorable standards climate can foster several positive side effects, one of the most important being enhanced Composite Risk Management (CRM). Enhanced CRM through strict adherence to standards allows commanders to move their formations to the edge. This, in turn, allows them to operate with confidence, knowing their Soldiers are using standards to mitigate both accidental and mission (tactical) hazards. Ensure your unit is embedding standards into every operation, and continuously communicate the importance of those standards to your Soldiers.

As our Army continues to fight the Global War on Terrorism and steadily transform, you, as a leader, will take your unit to the edge. Practicing effective CRM will allow you to conduct prolonged operations on the edge while remaining cognizant of the hazards.

Comments regarding this article may be directed to the U.S. Army Combat Readiness Center Help Desk at (334) 255-1390, DSN 558-1390, or by e-mail at helpdesk@crc.army.mil.

Standard

ACCIDENT INVESTIGATION DIVISION
U.S. Army Combat Readiness Center

2005 Countermeasure

Accountability

- Why Accountability This Month?—*January*
- Line of Duty Determinations: An Underused Tool—*January*
- Reports of Survey—*January*
- A Soldier's Last Ride—*January*
- A Little Luck and a Little Learn—*January*
- What Were They Thinking?: The A Team—*August*
- Left in the Cold—*September*

Airborne Operations

- Have a Good Jump—*April*
- The All-seeing Airborne Eye—*July*
- Investigator's Forum: Always to Standard—*November/December*

Bradley Fighting Vehicles

- Investigator's Forum: Hidden in Plain Sight—*April*
- Attention! Heaters Need Year-round Maintenance!—*June*
- The Basics of Bradleys—*June*
- Is That What You're Wearing?—*June*
- Short Three Soldiers—*June*
- Halfway There in FY05—*July*
- What Were They Thinking?: I wasn't expecting that!—*September*

Brownout

- Saving for a Sandy Day—*April*

Cold Weather

- Cold Hurts!—*September*
- Don't Eat the Yellow Snow!—*September*
- Left in the Cold—*September*
- Winter's Fashion Statement—*September*
- Staying Warm the Right Way—*September*

Composite Risk Management

- What It's About—*January*
- DASAF's Corner: Change is in the air...—*February*
- What's All the Talk About Composite Risk?—*February*
- Back Cover—*February*
- Poster—*March*
- The Road to Baghdad—*May*
- Why the CRC and What's Next?—*July*
- ARAP: Helping Leaders Save Lives—*October*
- Back Cover—*October*
- Poster—*November/December*

Deployment/Redeployment

- That's Not the Way We Do It!—*March*
- Saving for a Sandy Day—*April*
- Little Things to Keep in Mind—*May*
- You're Not a Pet—*May*
- An Almost Rolling

Disaster—June

- Going Somewhere?—*August*
- Building Battlemind—*August*
- Got Sleep?—*August*
- Leave It There—*August*
- Going Home—*August*

Explosives

- Danger Lurks in Combat's Shadow—*March*
- Flash, Bang, Burn!—*August*
- From the PLR Files: UXO and Explosives—*August*

Fatigue

- But I Was Tired!—*June*
- An Almost Rolling Disaster—*June*
- Got Sleep?—*August*

Fire

- Stuff Happens—*April*
- Staying Warm the Right Way—*September*

Fratricide

- Investigator's Forum: Execute COA 1. Any Questions?—*January*
- Words Matter—*February*

Heat

- Protect Your Squash!—*May*
- Best Practices: The First Enemy You Meet—*May*
- Don't Forget the CamelBak—*May*
- The Clear Facts on Water—*May*
- Little Things to Keep in Mind—*May*
- Ouch! That Burns!—*May*
- Back Cover—*May*

HMMWV

- A Little Luck and a Little Learn—*January*
- Investigator's Forum: Why Didn't You Tell Me That?—*February*
- A Juggling Fool—*February*
- On a Roll to Die—*March*
- A Cold, Wet Way to Die—*April*
- Training Drivers as They'll Fight—*May*
- Don't Drive It Like You Stole It!—*May*
- Investigator's Forum: Too Little Training, Too Much Speed—*June*
- Dark Days—*July*
- Patrolling By Leadership—*July*
- Halfway There in FY05—*July*
- What Were They Thinking?: That'll stop you...—*September*
- Year-end Review—*November/December*

Improvised Explosive Devices

- Route Clearance Saves Lives—*February*
- Danger Lurks in Combat's Shadow—*March*

Leadership

- Monday Morning Maintenance—*April*
- The Road to Baghdad—*May*
- Big Brother vs. Band of Brothers—*June*
- Patrolling By Leadership—*July*
- Why and How We Do It—*October*

Index 2005

- Don't Look the Other Way—October
- Investigator's Forum: Never Enough to Go Around—October
- Out of the Run—October
- ARAP: Helping Leaders Save Lives—October
- Investigator's Forum: Always to Standard—November/December

Medical

- Worse Than You Think—February
- You're Not a Pet—May
- "Letters From War: Medical"—June
- NVGs Don't Prevent Falls in the Dark!—July
- Building Battlemind—August
- Does Your Helmet Fit?—August
- Don't Eat the Yellow Snow!—September
- Out of the Run—October

M 1

- Great Blazin' Tanks!—June
- Mission Time, Not Training Time—June
- Is That What You're Wearing?—June
- Night Moves—July
- Halfway There in FY05—July

M 1 13

- Investigator's Forum: Never Enough to Go Around—October

M939

- M939s: Still Out There—April

Natural Disasters

- After the Storm—September

Negligent Discharges

- The Importance of Firing-line Safeties—January
- Weapons Safety: On the Range, Around the Arms Room, and In Between—February
- A Cure for Negligent Discharges?—August

Night Vision Devices

- Night Vision: Not Just for Superman!—July
- Afraid of the Dark?—July
- NVGs Don't Prevent Falls in the Dark!—July
- Night Moves—July
- Back Cover—July

Nuclear, Biological, Chemical

- Check Your NBC Equipment—February

Personnel Injury

- Missing Something?—March
- Back to the Basics—April
- Ouch! That Burns!—May
- Saving Soldiers One Breath at a Time—June
- Pitch Black? No Problem!—July
- NVGs Don't Prevent Falls in the Dark!—July
- Out of the Run—October
- Year-end Review—November/December

PMCS

- Monday Morning Maintenance—April
- Attention! Heaters Need Year-round Maintenance!—June
- Equipment Gets Cold Too—September

Range Safety

- The Importance of Firing-Line Safeties—January
- Weapons Safety: On the Range, Around the Arms Room, and In Between—February
- Investigator's Forum: It Was an Easy Range—March
- Investigator's Forum: Is There Anybody Downrange?—August

Rollovers

- Investigator's Forum: Why Didn't You Tell Me That?—February
- On a Roll to Die—March
- Poster—March
- A Cold, Wet Way to Die—April
- Investigator's Forum: Hidden in Plain Sight—April
- Back Cover—April
- Training Drivers as They'll Fight—May
- Short Three Soldiers—June
- Investigator's Forum: Too Little Training, Too Much Speed—June
- Dark Days—July
- Patrolling By Leadership—July
- Halfway There in FY05—July
- Back Cover—September
- Investigator's Forum:

- Never Enough to Go Around—October
- Year-end Review—November/December

Seatbelts

- Why Should I Wear My Seatbelt?—March
- On a Roll to Die—March
- Soldier-friendly Seatbelts Coming Soon—April
- Probability, Perception, and Putting on Your Seatbelt—May

Statistics

- Halfway There in FY05—July
- Roll Call—November/December
- FY05—How'd We Do?—November/December

Stryker

- Why Should I Wear My Seatbelt?—March
- Halfway There in FY05—July
- Year-end Review—November/December

Training

- Additional Duty Safety Course Online Now!—January
- Samurais Fight the Safety Battle—February
- Your Training, Your Way—March

Video/DVD

- "Letters From War: Tactical Movement"—March
- "Letters From War: Medical"—June



Lost



ACV



AMV

Class B (Damage)

- A Stryker and an FMTV suffered Class B damage when the FMTV rear-ended the Stryker. The vehicles were traveling to a forward operating base to drop off the FMTV when they encountered a traffic jam. The Stryker was the lead vehicle and braked to avoid the traffic, but the FMTV's brakes failed. No injuries were reported. The accident occurred during the mid-morning.

Class B (Damage)

- An M1113 suffered Class B damage when it caught fire during an unspecified operation. The crew reported seeing smoke coming from the HMMWV's engine, which subsequently failed. Fire consumed the HMMWV and caused significant damage to the vehicle, the trailer it was towing, a night vision system, a smoke generator, and various other equipment. No injuries were reported.

SEATBELT SUCCESS



st

The accident occurred during the late evening.

Class B

■ Four Soldiers were injured when their M998 HMMWV overturned near an interstate exit ramp. The Soldiers were conducting driver's training, and the driver hesitated while making a lane change to access the exit ramp. The Soldier abruptly changed lanes close to the exit but

swerved too hard and steered the HMMWV onto the roadway's right shoulder. He then oversteered left and lost control of the

from cuts and lacerations to a fractured jaw and neck injury. The accident occurred in the late afternoon.

Class B

Soldier's fingers were amputated when the tailgate of an M929 5-ton dump truck fell on her hand. The Soldier noticed the tailgate was stuck and freed it with her left hand. However, the tailgate then fell onto her right hand, crushing and partially amputating the tips of her fourth and fifth fingers above the first joint. The Soldier was wearing leather gloves. The accident occurred during the late afternoon.

vehicle, which impacted a guardrail before rolling over onto its top. All four Soldiers were wearing their seatbelts, and their injuries ranged



Personnel Injury

Class B

■ Soldier's finger was amputated by an environmental control

STORIES Class D

Spotlighting Soldiers who wore their seatbelts and walked away from potentially catastrophic accidents



■ Soldier walked away without injury when the M923 5-ton he was driving rolled over. The truck was part of a five-vehicle convoy traveling in the dark on a vehicle trail. As the Soldier made a left turn, the truck veered onto the trail's soft shoulder. The road then collapsed under the truck, which flipped over the trail's edge. The vehicle

stopped short of falling into a creek below the trail after it hit two trees. The Soldier was wearing his seatbelt and helmet. The accident occurred during the mid-evening.

■ The gunner in an M1025 HMMWV survived when the vehicle rolled over during a turn. The HMMWV's driver made the turn at a high rate of speed even though his truck commander told

him to slow down. The driver abruptly slowed down when he realized the truck was going too fast and oversteered to negotiate the turn. The gunner was wearing his seatbelt and dislocated his shoulder when he hit the turret during the rollover sequence, but otherwise was uninjured. The remaining crewmembers were checked at the

local aid station and released for duty. The driver received a negative counseling statement and was ordered to complete the Army Defensive Driving Course and repair the vehicle himself to fully mission capable status. The accident occurred during the early afternoon.

system fan. The Soldier was working on the system and was reaching inside it for a part when the fan cut his right middle finger. The accident occurred during the late morning.

Class C

■ Soldier suffered first- and second-degree burns to his upper left and lower right legs when a smoke grenade detonated in his pocket. The Soldier was conducting a battle simulation exercise at the time of the accident. Another Soldier initially tried to detonate the grenade, which had a paper clip in place of the pin and duct tape securing the spoon. He couldn't release the tape, so he handed the grenade back to the injured Soldier, who then put it in his left-front pocket. After the accident, the smoke grenades used in the exercise were deemed unserviceable and negative counseling statements were issued to the supervisors involved. The accident occurred during the early morning.



Lost

WHAT THINK were they

I love the taste of JP-8 in the morning!

What do one over-fueled HMMWV, two eager Soldiers, and one garden hose equal? In this case, at least 6 days in the hospital! Two Soldiers decided they'd take matters into their own hands when a HMMWV came into their motor pool with an excess of JP-8 in the tank. Although the Soldier who was trained to conduct such tasks was present and accounted for, he didn't have the equipment to do the job. He said he'd do it later and went about his business.

Well, never put off to tomorrow what you can do today! The two resourceful Soldiers found an old garden hose, stuck it in the HMMWV's fuel tank, and one began to siphon the JP-8 with his mouth. He wisely gave up after he swallowed a little fuel—heaven, and that HMMWV, could wait. The other Soldier, however, was determined to do better. He grabbed the hose, took a deep breath...and swallowed an "undetermined" amount of JP-8. On the bright side, the fuel was flowing freely from the

ing?

HMMWV. (On the not-so-bright side, it was creating a fire hazard on the floor.)

In case you didn't know, JP-8 isn't safe for human consumption. Our "human siphon" figured this fact out right about the time the room started spinning. Coughing severely, the Soldier had to be assisted to the restroom, where another genius told him to drink water and wash the fuel from his face. About 10 minutes later someone decided it was ER time and drove the Soldier to the hospital, where he stayed for

several days. (Apparently no one consulted the material safety data sheet for JP-8. Otherwise, they'd have known to take the Soldier to the hospital immediately, not wait around to see what happened.)

This Soldier's haste made waste—wasted days away from work and wasted dollars spent on medical care. Murphy's Law almost always applies to shortcuts, so do the job right or wait until someone who can do it right comes along. 

Information based on preliminary reports of ground accidents.

ACCIDENT BRIEFS

STOP THE
LOSS OF

WIN THE FIGHT

USE COMPOSITE RISK MANAGEMENT
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OWN ^{the}
EDGE

Composite Risk Management