DON'T MODIFY ALSE: STAYING WITH TESTED EQUIPMENT p. 30

KNOWLEDGE

VOL 2 JANUARY 2008

OFFICIAL SAFETY MAGAZINE OF THE U.S. ARMY

END OF THE YEAR

FISCAL 2007 ACCIDENT REVIEWS

+

SLIPPIN' AWAY? p. 22

PLAN YOUR TRIPS FOR SAFETY

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KNOWLEDGE
OFFICIAL SAFETY MAGAZINE OF THE U.S. ARMY

contents

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Mission statement: USACRC supports our Army at war by collecting, storing, analyzing, and disseminating actionable information to assist Leaders, Soldiers, Families, and Civilians in preserving/protecting our Army's combat resources.

We welcome your feedback. Please e-mail comments to **knowledge@crc.army.mil**.

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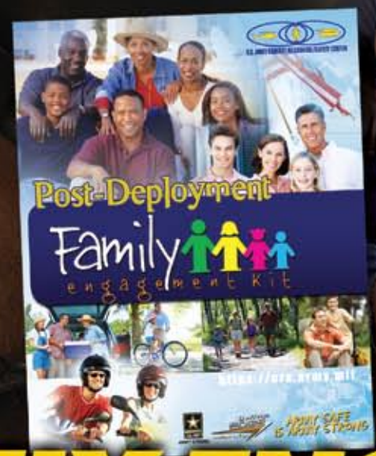


"REACH OUT to FAMILIES and INCLUDE them as PART of the SOLUTION."

FROM THE DASAF

FAMILY ENGAGEMENT KIT
A GREAT RESOURCE FOR SAFETY

We are now at war in excess of six years and I commend you for all you've accomplished and your daily efforts to save lives through accident prevention. But bottom line—we CAN and MUST do better.

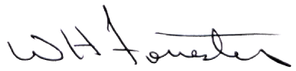
While you might expect that our extended operations are stretching and stressing our forces, creating an environment conducive to increased accidental losses, that is not what we see. In theater, we see numerous successes as Leaders exert 24/7 use of overt command and control of Soldiers' lives. However, when these Soldiers return to home station and the reins loosen and oversight decreases, we see off-duty accidents outpacing on-duty losses. This is unacceptable since the standards never changed.

The beginning of a new year presents us with the possibility to set goals and objectives. For 2008, let us set goals giving us a unique opportunity to build on the successes of the previous two years, raising the bar of excellence to rates unsurpassed in any in our last decade. To accomplish this, I recommend the following goals:

- Embrace safety as a way of life.
- Create a positive safety climate and culture within every organization, keeping Soldiers, civilians and Families a part of that formation.
- Reach out to Families and include them as part of the solution.
- Enable Soldiers and Leaders to assess their personal and subordinates' risky behavior, preventing the next accident.
- Get involved, stay engaged and make a POSITIVE difference.

Families undoubtedly have a direct impact on Soldiers. Gen. Casey, CSA, reiterated the importance of Families, emphasizing that much of a Soldier's strength comes from their Family. The newly released Family Engagement Kit (https://crc.army.mil/familyengagement), coupled with Leader engagement, prepares and encourages Family involvement, ultimately raising awareness of that which endangers us, thus reducing accidental losses. The Family Engagement Kit serves to harness the power of Families, garnering their assistance as we endeavor to achieve OUR goals.

I commend each of you as we continue taking steps toward decreasing accidental losses. I wish you and your Family a happy and safe 2008 and ask that you continue making our "Army Safe and Army Strong"! «



William H. Forrester
Brigadier General, USA
Commanding

> "The **PRESERVATION** of **COMBAT POWER** can only come through the **AGGRESSIVE** application of composite risk management by **ENGAGED LEADERSHIP**."

ENGAGED LEADERSHIP REQUIRES BUY-IN

Our goal at the U.S. Army Combat Readiness/Safety Center is to serve as the Army's knowledge center for loss data collection, fusion, analysis and dissemination of actionable force protection information. Simply said, we collect, store and analyze data to develop tools for our Army to know the risk upfront. The preservation of combat power can only come through the aggressive application of composite risk management by engaged leadership.

The cornerstone of standards and discipline is effective engaged leadership. Whether you're talking about safety, retention, readiness or kicking in doors, it requires synchronized engaged leadership throughout the chain to make this mission happen. It is not automatic, and some organizations do it better than others. Why? Because engaged leadership requires buy-in. By buy-in, I mean Soldiers at all levels understand the message that you are transmitting and translate that message into risk mitigated actions.

Usually, buy-in occurs in as little as one-to-three forms. First, a leader explains the mission to their Soldiers, and they buy-in to execute the mission because they don't want to let the organization or their comrades down. In the second form, the leader's issues an order and Soldiers buy-in to avoid the consequences of disobeying a lawful order.

Both are situational driven, require more or less time and are effective when the organization enforces standards and discipline. Lastly, the most difficult are those "loose in the secondary" that often require a combination of both approaches along with policing by peers. This can result in almost constant supervision, which leads me in to off-duty.

Two-thirds of Army accidents happened off-duty, when the leader generally is not present. Who is filling the leadership gap off-duty?

As Brig. Gen. Forrester indicated in his column, Families are mission essential, as well. Families, whether it is a mom, dad, spouse or even children, have a direct connection with our Soldiers that we are not afforded. In realizing that Family, friends and a Soldier's sergeant are the most influential people in a Soldier's life, the USACRC teamed up with the Morale, Welfare and Recreation Command to release the Family Engagement Kit to help fill the off-duty leadership gap with quality Family engagement.

The kit is designed to educate the support network and provide it with a better understanding of how safe practices can make a difference in the lives of our Families and Soldiers. Between fiscal 2001 and 2007, the Army has lost 186 of our Soldiers to accidents within a year of return from deployment. Of those, 63 percent were lost in the first six months. The Family Engagement Kit will allow us to open up another front to combat an enemy that robs our Army of its most precious resource—the Soldier.

In closing, many installations are adopting a safety campaign entitled "I Can My Own Life"? and having great success. Send us your ideas and best practices so we can share them with our Army. Success in the business of safety is hard to measure; however, failure is not here. Here's wishing you and your Family a Happy New Year! «

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

LOOKING BACK

fiscal 2007 ground accident review

MARY ANN THOMPSON
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Class A Army ground accidents and fatalities as a whole were slightly less in fiscal 2007. While it's great news that fewer Soldiers and equipment are being taken out of the fight, there are still some areas that need improvement—namely Army Combat Vehicles (ACV). Let's look back on fiscal 2007 so we can ensure we are taking the appropriate actions to prevent future accidental losses.

In fiscal 2007, the Army experienced 228 Class A ground accidents, resulting in 210 Army fatalities. This is down from the 241 Class A ground accidents and 212 fatalities in fiscal 2006. As can be seen in the chart below, 51 percent of the Class A Army ground accidents were privately owned vehicle (POV) accidents; 24 percent were Personnel Injury-Other (PI-O) accidents; 14 percent were Army Motor Vehicle (AMV) accidents; and 8 percent were ACV accidents. Of those accidents, 25 percent occurred in Operation Iraqi Freedom (OIF) or Operation Enduring Freedom (OEF).

The picture is similar when looking at Army fatalities. Accidents in POVs accounted for 52 percent of the fatalities; PI-O accidents accounted for 24 percent; AMV accidents accounted for 18 percent; and ACV accidents accounted for 5 percent. Below is a further breakdown of each accident area. The article "How Did We Do? Fiscal 2007 Army Off-Duty Ground Accident Review" on page 14 of this issue will discuss off-duty POV and personnel injury accidents during this time frame.

as of Oct. 24, 2007

Personnel Injury–Other Accidents

The Army had 55 Class A PI-O accidents in fiscal 2007, resulting in 50 fatalities. These numbers represented an increase from the 49 Class A accidents and 44 fatalities in fiscal 2006. Of the fiscal 2007 Class A accidents, 19 occurred while the Soldiers were on duty. Of that number, 11 fatalities occurred during OIF/OEF.

The 19 on-duty PI-O accidents resulted in 17 fatalities, compared to 25 Class A accidents and 23 fatalities in fiscal 2006. Of these fiscal 2007 accidents, weapons handling accounted for eight fatalities. Two of those involved range live-fire training and two were the result of negligent discharges.

Maintenance/repair/servicing activities accounted for three fatalities, while two Soldiers died as a result of physical training (PT) activities. Three Soldiers suffered fatal heat injuries in fiscal 2007. One Soldier was performing maintenance on an M1 Abrams tank, one was participating in PT (road march) and one was participating in a land navigation course.

Army Motor Vehicle

There were 32 Class A AMV accidents in fiscal 2007, resulting in 37 fatalities. This was down from 41 Class A accidents in fiscal 2006, but slightly up from the 35 fatalities for the same time period. Of the fiscal 2007 Class A AMV accidents, 22 occurred in OIF/OEF, resulting in 29 fatalities.

The majority, 25, of AMV accidents in fiscal 2007 involved tactical vehicles. The HMMWV was the most frequently reported accident AMV, accounting for 15 accidents and 18 fatalities. This was down from the 26 fatalities in fiscal 2006. Of the HMMWV accidents in fiscal 2007, 12 occurred during OIF/OEF, resulting in 15 fatalities.

The M1114 accounted for nine of the HMMWV accidents in fiscal 2007 and 12 of the fatalities. Thirteen of the HMMWV accidents involved rollovers, eight of which involved the M1114.

There were also four Family of Medium Tactical Vehicle accidents in fiscal 2007, resulting in nine fatalities. This is up from the one accident and two fatalities in fiscal 2006. Seven Soldiers and two detainees were fatally injured in one Light Medium Tactical Vehicle accident when the vehicle overturned while transporting them back from a raid site.

Army Combat Vehicle

There were 18 Class A ACV accidents in fiscal 2007, resulting in 11 fatalities. These numbers were up from the 10 Class A accidents and four fatalities in fiscal 2006. Bradley Fighting Vehicles (BFV) accounted for 11 accidents—the largest number for any ACV—and resulted in four fatalities.

Four BFV accidents involved rollovers, three of which resulted in the vehicle overturning into canals or water and resulting in two fatalities. In two of these accidents, the ground gave way as the vehicle was operating near the canal. In the other accident, the vehicle's track slipped off the road as it was crossing a bridge. The other rollover occurred during a night patrol when the operator lost control, veered off of the road and then overturned into a ditch, causing Class A damage.

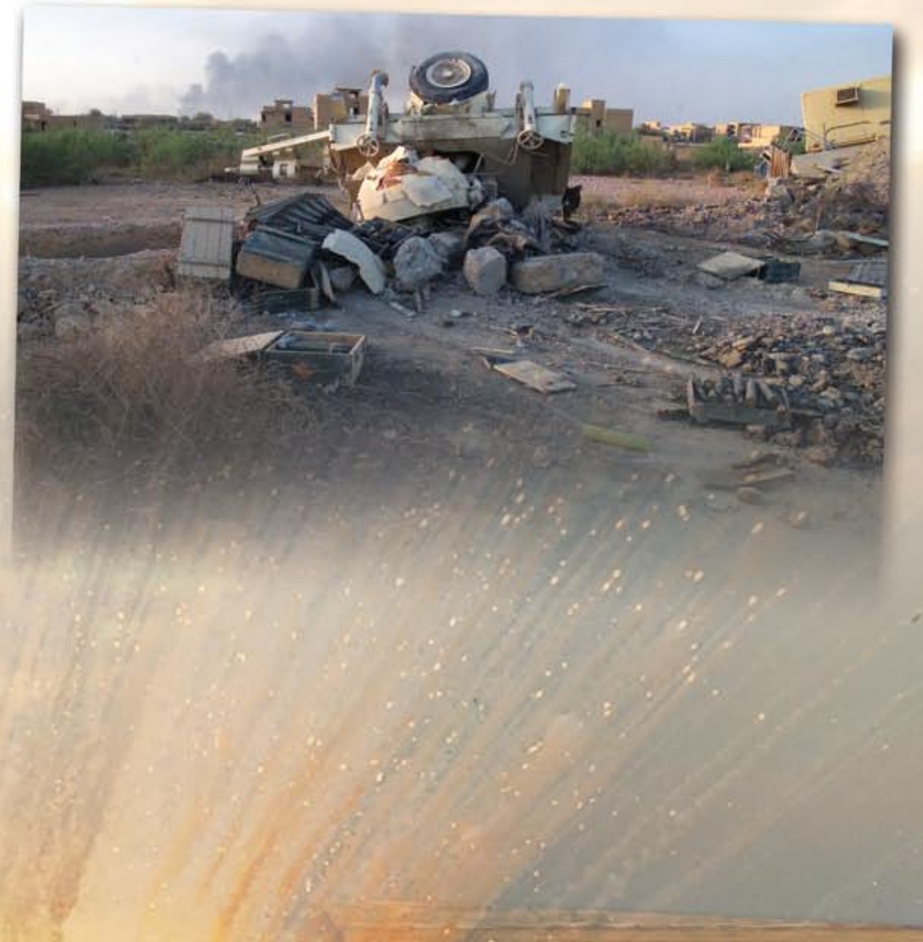
Another Class A accident occurred when a BFV struck a tree, which then fell on the Soldier in the turret and caused a spinal fracture and paralysis. Four other BFV accidents involved fires—three in the engines and a fourth in the turret. There were also two BFV accidents that resulted in fatal injuries to ground guides. Of the fiscal 2007 ACV accidents, 14 occurred during OIF, resulting in nine fatalities.

> "**LEADERS AND SOLDIERS** must continue **WORKING TOGETHER** to better **INTEGRATE** composite risk management into their **ACV OPERATIONS**."

Explosive and Fire Accidents

Explosive and fire accidents accounted for five Class A accidents in fiscal 2007—the same as in fiscal 2006. Two of the fiscal 2007 explosive accidents occurred during material handling (unloading, loading, stacking rounds) resulting in two fatalities (one Soldier and one U.S. contract employee) and two serious injuries to contract employees. In the third explosive accident, a Soldier suffered total loss of vision when a detonation occurred during range clearance and preparation for demolition.

A Soldier was fatally injured when a fire started while she was refueling a generator. Another fired occurred when Soldiers were attempting to burn latrine waste and the fire spread out of control and damaged Army equipment.



Conclusion

Review of accident data for fiscal 2007 shows an overall decrease in Class A accidents and a slight decrease in fatalities. Engaged leaders and Soldiers are making a difference. We have successfully reduced AMV and on-duty PI-O accidents. On-duty fatalities have also been reduced, although we have not reduced the number of explosive and fire accidents.

While some improvement has been made, there is still a lot of work to be done. Class A ACV accidents almost doubled in fiscal 2007 and fatalities nearly tripled. Leaders and Soldiers must continue working together to better integrate composite risk management (CRM) into their ACV operations.

Continued emphasis on safety and CRM in all on- and off-duty activities is required to sustain our successes and reduce our ACV accidents. The U.S. Army Combat Readiness/Safety Center has developed a number of easily accessible tools to help Soldiers and leaders manage risks. These tools can be found on the USACRC's Web site at https://crc.army.mil. «

Editor's Note: These statistics are current from the Army Risk Management Information System as of Oct. 24, 2007. Delayed reports and follow-up details on preliminary reports could change the statistics, figures and findings.

YOU BET YOUR LIFE!

CW4 JEFFERY DANITZ
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Would you go to Las Vegas and bet your life on one 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 seat belts in tactical vehicles, especially in theater. Why is this happening?

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

Aside from commanders telling them to not use seat belts, 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 seat belts—to "protect" themselves during these events.

Perception of occurrence is influenced by perception of control, and this factor plays into Soldiers' decision-making processes, including seat belt 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 they'll strike. Thus, Soldiers perceive the occurrence of an attack as being highly likely to occur because of their lack of control.

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. Therefore, it makes sense to them to not wear seat belts in combat.

This logic is flawed. Army regulations state seat belts must be worn at all times—even in combat—for a simple reason. Statistics show many Soldiers have been killed in Army vehicles during accidents because they weren't wearing their seat belts. Unrestrained, these Soldiers were often thrown around inside their vehicles and suffered serious, sometimes fatal, blunt trauma injuries. In other cases, unrestrained Soldiers were ejected when their vehicles rolled over. These were injuries and fatalities that could have been prevented—not the "what-ifs" of a possible enemy attack.

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 seat belt. Your family deserves it and the Army will thank you for it.

> "An **INTELLIGENT** person **LEARNS** from **THEIR** own **MISTAKES**, but a **WISE** individual **LEARNS** from the **MISTAKES** of **OTHERS**."

How Did We Do?

fiscal 2007 off-duty ground accident review

GLEN DAVIS
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Fort Rucker, Ala.

Privately owned vehicles are still our number one killer. During fiscal 2007, 109 Soldiers died and 12 received permanent total disability injuries in 115 off-duty Class A POV accidents. These crashes accounted for 52 percent of all Army military ground fatalities and represent the leading cause of accidental death in the Army. In looking at these accidents, age makes a difference. More than half of the Soldiers killed or injured were 24 years old or younger and in the grades of private through corporal/specialist. There also was a relationship between military grade and the type of vehicle involved. Soldiers in the lower paygrades—private through corporal/specialist—were most likely to die in sedans. Soldiers in the paygrades of sergeant or higher were more likely to die in motorcycle accidents. The graph below shows the losses, proportionally, according to grade.

Grade	Proportion	Soldiers Killed	Perm Total Disability	Total
E1		4		4
E2		15	3	18
E3		11	1	12
E4		28	3	31
E5		19	3	22
E6		12	1	13
E7		11		11
E8		4		4
E9		1		1
W1		1		1
W2		1		1
03		1	1	2
Unk		1		1
	TOTALS	109	12	121

as of Oct. 24, 2007

> **"MANY** of the **DRIVER-RELATED FACTORS** contributing to POV crashes are **BEHAVIORAL IN NATURE."**

Vehicle Types

The trends are changing in POV accidents. Not long ago, sedans were involved in more Class A POV accidents than all other vehicle types combined. However, that changed in fiscal 2005 when motorcycle fatalities began to skyrocket, ultimately eclipsing sedan fatalities during fiscal 2006. While motorcycles hold the top ranking again in fiscal 2007, the good news is there were 28 fewer accidents in sedans, motorcycles, mopeds and all-terrain vehicles compared to fiscal 2006. However, pickups, vans, Jeeps and sport utility vehicles (SUV) didn't fare as well with 16 more Class A accidents in fiscal 2007. The chart below shows the crashes according to vehicle type.

Class A Accidents By Vehicle Type

	Fiscal 2006	2007	Increase/Decrease
Sedan	50	36	-14
Motorcycle	52	40	-12
Moped	1	0	-1
ATV	3	2	-1
Truck	12	17	+5
Jeep/SUV	9	18	+9
Van	0	2	+2
TOTALS	**127**	**115**	**-12**

as of Oct. 24, 2007

Indiscipline

Many of the driver-related factors contributing to POV crashes are behavioral in nature. These include alcohol use, speeding and driving while fatigued. Additional factors that contribute to injury severity are failing to wear seat belts and helmets. When Soldiers know they should or should not behave in a certain manner yet choose otherwise, we call that choice "indiscipline." The good news is fewer Soldiers were killed or received permanent total disability injuries in crashes caused by making those dangerous choices. Compared to fiscal 2006, crashes where Soldiers were driving while drinking alcohol were down 50 percent, speeding was down 35 percent, fatigued driving was down 18 percent, failing to use seat belts was down 4 percent and failing to wear helmets was down 63 percent. But there is some bad news; indisciplined behavior among Jeep and SUV drivers increased, which will be looked at in the following paragraphs.

Alcohol

Soldiers are recognizing the dangers of drinking and driving, which is reflected in the accident numbers. During fiscal 2007, the number of Class A accidents involving alcohol-impaired Soldiers behind the wheel was cut in half from the previous year's 32. The news is even better for motorcycle operators. During fiscal 2006, there were 10 alcohol-involved motorcycle crashes. In fiscal 2007, that number was cut by 90 percent, with only one crash. Big reductions in alcohol-impaired driver accidents also occurred with sedans and trucks, with the figures dropping from 15 to 10 in the former and five to none in the latter. Still, there is room for improvement when it comes to Jeep and SUV drivers. Alcohol impairment for Soldiers driving those vehicles climbed from two to five from fiscal 2006. Additionally, most alcohol-related crashes happened during nighttime hours. During fiscal 2007, 13 of the 16 crashes happened at night, with nine occurring between midnight and 4 a.m.

Speeding

There were also fewer speed-related crashes during fiscal 2007 than during the previous year, with the numbers dropping from 51 to 33. Much of that good news is in the area of motorcycles, where speed-related crashes dropped from 23 to 13. In addition, speed-related crashes in sedans dropped from 18 to 11 and from five to three for trucks. Once again, the scale tipped the other way when it came to Jeeps and SUVs. Speed-related crashes increased to six, compared to five the previous year. Of the 33 recorded speed-related crashes, 20 happened during the nighttime hours.

Fatigue

Fatigue-related accidents dropped from 11 during fiscal 2006 to nine in fiscal 2007. Fatigue-related fatalities were down with all four-wheel POV types. With sedans, the numbers dropped from seven to five;

with Jeeps and SUVs, the numbers dropped from three to two, and with pickups the numbers dropped from one to zero. Motorcycle crashes, however, increased from none to two. Like alcohol, crashes with fatigued Soldiers at the wheel occurred chiefly at night, with four of these occurring between midnight and 4 a.m.

Seat Belts and Helmets

Class A accidents where Soldiers failed to wear their seat belts or helmets dropped from 44 in fiscal 2006 to 31 fiscal 2007. Solders operating motorcycles and ATVs or driving sedans all contributed to this decline. Looking at the numbers, crashes involving motorcycle operators who failed to wear their helmets dropped from 17 to six in fiscal 2007. For all-terrain vehicles, the number of crashes involving operators without helmets dropped from two to one while sedan crashes involving unbelted drivers dropped from 15 to 11. But on the other side of this trend was an overall increase of three crashes in Jeeps, SUVs and pickups involving Soldiers who chose not to buckle up. Soldiers 22 years old and younger were the most likely to fail to wear their seat belt or helmet and accounted for more than half of these crashes. Five of the Soldiers driving unbuckled were only 19 years old when they crashed. Of that number, four died and one received permanent total disability injuries.

Off-duty Personnel Injury-Other Accidents*

Thirty-three Soldiers died and four received permanent total disability injuries in 35 Class A off-duty personnel injury accidents during fiscal 2007, an increase of 12 from the previous year. Just like off-duty POV accidents, young Soldiers were most often the victims in Class A PI-O accidents. More than half of the Soldiers killed were 22 years old or younger and were in the ranks of private through corporal/specialist. The graph below shows the losses, proportionally, according to grade.

Water-related activities and negligent discharges were the leading accident producers. Activities which are supposed to be fun and relaxing quickly turn deadly if hazards are not identified and controlled. To prevent these losses, leaders need to effectively engage their Soldiers on the importance of using composite risk management during off-duty activities. The following is a breakdown of the fiscal 2007 accidents.

Water-Related Activities

During fiscal 2007, 15 Soldiers died in 14 off-duty water-related accidents. Five Soldiers drowned in separate accidents when they either fell from their small craft or their small craft submerged or capsized. In each accident, the Soldiers either drowned before they could swim to shore or before rescue arrived. Three other Solders drowned in two separate accidents when they failed to return from boating at a designated time. Their bodies were later located in the water. Two Soldiers died in separate accidents when they dove into water. One of these Soldiers died after jumping into a lake from a 30-foot cliff, while the other died when he dove headfirst into the water and struck his head on submerged rocks. Two other Soldiers drowned in separate accidents while swimming in rivers. Another Soldier was scuba diving when his diving buddy noticed he was going into distress. The Soldier was brought aboard a vessel, but attempts to revive him through the use of cardiopulmonary resuscitation failed. Another Soldier had been body boarding when his body was later discovered in shallow water. A Soldier canoeing in a creek was unable to overcome the swift-moving water and paddle to shore before going over a waterfall.

Negligent Discharges

The negligent handling of firearms resulted in seven accidents—six of them fatal and one resulting in a Soldier receiving a permanent total disability injury. In six of these accidents, the Soldiers handling the weapons did not realize they were loaded. Ignoring basic weapons handling safety, these Soldiers failed to clear these weapons and ensure their safeties were engaged. These

Grade	Proportion	Soldiers Killed	Perm Total Disability	Total
E1		1		1
E2		4		4
E3		4		4
E4		9	1	10
E5		3	2	5
E6		3		3
E7		2		2
01		2		2
03		1	1	2
04		1		1
06		3		3
	TOTALS	33	4	37

as of Oct. 24, 2007

Soldiers also disregarded the importance of maintaining muzzle awareness and keeping their finger off the trigger unless they intended to fire. On top of all these failures, one Soldier added another egregious mistake. This Soldier had a history of joking around with other Soldiers by pointing a weapon at them. This time, the firearm discharged and inflicted a permanent total disability injury to another Soldier.

Pedestrian

Two Soldiers died in the same accident when they crossed a set of railroad tracks and were struck by an oncoming train. Five other Soldiers died in separate accidents when they were on foot and struck by POVs. In one instance, the accident was apparently a hit and run.

Falls

Three Soldiers were killed and three others received permanent total disability injuries in six separate accidents. One Soldier was paragliding when he became entangled with a civilian paraglider and fell between 100 and 200 feet to his death. Another Soldier was attempting to climb down a 70-foot cliff without climbing gear when he lost his grip and fell to his death. One Soldier suffered a permanent total disability injury when he fell from a third-floor balcony during a party. One Soldier suffered a permanent total disability injury when he slipped and fell down an embankment. Another Soldier slipped on some water, fell and struck the back of her head. The resulting injury cracked a vertebra, leaving the Soldier paralyzed from the waist down. Another Soldier died after being thrown from a tractor.

Other Causes

Two Soldiers died in separate off-duty accidents. One Soldier was camping with friends when lightning struck his tent and he was killed. The other Soldier died after choking on food at a private party.

Conclusion

Before ending this article, it would be wise to consider a couple of "biases" that can distort the way we look at accidents. The first bias is what psychologists call the "Fundamental Attribution Error." This bias refers to the tendency people have to blame accident victims for their predicaments, rather than the situation they found themselves in. The second bias is what psychologists call the "Just World Hypothesis." This bias refers to the belief many people have that "others get what they deserve and deserve what they get." The problem with these biases is that they deprive us of the lessons learned from these experiences. We are so focused on other peoples' shortcomings that we fail to see how the conditions and circumstances of their accidents might apply to us.

This article provides real-life examples of the tragic consequences of poorly managed hazards. Take a few moments to examine these accidents and ask yourself what actions a leader, a battle buddy, a friend or a family member could have taken to prevent them. Learn from the mistakes of others and arm yourself with the knowledge needed to prevent future needless losses.«

**Personnel Injury-Other accidents are Army accidents involving injury to personnel not covered by any other accident type.*

Note: These statistics are current from the Army Risk Management Information System as of Oct. 24, 2007. Delayed reports and follow-up details on preliminary reports could change the statistics, figures and findings.

SLIPPIN' AND A-SLIDIN'

TIMOTHY J. CHERWIN
Fort Knox, Ky.

It was New Year's Day and I'd spent the previous night celebrating with "brewskis" and buddies. Crawling out of the rack about 8 o'clock the following morning, I planned to hit the road for my girlfriend's house. Sure, I'd gotten about seven hours of sleep—but my tail was still dragging. I washed down a bite to eat with a glass of water and was out the door right behind my buddies. I figured it would take me two hours to get from Chicago to my girlfriend's place in Milwaukee. Little did I know it would take me much longer than I'd planned.

I'd been on the road about an hour and a half when the snow and wind started blowing fiercely, making the highway very slippery. There were lots of cars on the road and I saw many of them sliding on the ice. I knew it was a bad situation, but I wanted to see my girlfriend. I had a bad case of "get-there-itis."

I had everything under control until I approached a bridge overpass. I was doing about 35 mph when a Mayflower moving van flew by me on the left. He passed so close that he clipped my driver-side mirror. The unexpected "tap" from the moving van overcame what little traction my old, worn-out tires could provide. I tried to maintain control, but my truck started fishtailing and sliding sideways. I thought, "This is it—it's over!" as I slammed into the guardrail and went off the road. My pickup rolled over three times before I finally landed upside down at the bottom of the hill. Fuel started rushing into the cab as I hung from my seat belt.

My seat belt saved my life by keeping me from being thrown out or slammed around inside the cab. Because I was still conscious and uninjured, I was able to do something about my predicament. I couldn't open the seat belt's buckle because of the tension created by my body weight as I hung upside down. The only way I could get free was to cut the seat belt with my knife. After I did that, I used the knife's butt to break through the shattered windshield and crawl out. Fortunately, the only injuries I'd suffered were a few minor cuts and scrapes. When the paramedics examined me, they didn't find any serious injuries. I didn't even have to go to the hospital.

> "**LUCK** is no alternative to **POOR JUDGMENT**."

I have no doubt that wearing my seat belt saved my life. However, I should have exercised better judgment in my decision to travel that day. I was tired, the weather was terrible and my tires were badly worn. Luck is no alternative to poor judgment. Having the ability to make sound decisions is the first step to saving lives. That's what composite risk management is about. You look at the risks and figure out whether it's worth taking them or if you can come up with a better plan. The whole concept has been captured in a simple online program called "TRiPS." You can find it on the U.S. Army Combat Readiness/Safety Center's Web site at https://crc.army.mil/home/. Once there, just click on the "DRIVING/POV" button and then click on "TRiPS." It beats learning your lessons the hard way—slippin' and a-slidin' into trouble. «

WIRED AND TIRED

Have you ever gotten drunk and been told to "go home and sleep it off?" Do you think that advice really worked? Just how rested were you when you woke up? Maybe it was a lot less than you thought, according to Col. John Campbell, the command surgeon for the U.S. Army Combat Readiness/Safety Center.

"What Mr. Cherwin was experiencing were the after effects of what a lot of people mistake for good sleep after a night's drinking," he said.

The problem, Campbell explained, is that alcohol disturbs the body's sleep cycle by preventing a person from entering the Rapid Eye Movement sleep stage, which is where the restorative part of sleep occurs. Without that REM sleep, while a person may have been in bed for eight hours, they awaken less able to think clearly. Sure, they may no longer be legally intoxicated. However, being mentally fatigued can keep them from effectively weighing the risks in a situation they're about to enter. Although many people don't realize it, alcohol packs a one-two punch when it comes to impairment. First, being intoxicated degrades your reasoning abilities, setting you up for an accident. Second, waking mentally fatigued reduces your judgment well into the next day. In both cases, you're less likely to control the hazards that can turn you from a Soldier into a statistic. So ask yourself if getting a "buzz" is worth that?

A CHALLENGING YEAR

fiscal 2007 aviation accident review

CHARISSE LYLE
U.S. Army Combat Readiness/Safety Center
Fort Rucker, Ala.

We measure our mishap prevention progress each year by tallying our losses, and fiscal 2007 was not a banner year in Army Aviation. Accidents seriously impact our ability to fight and win the Global War on Terrorism. The high operations tempo that comes with our mission is a reality and it will continue into the foreseeable future.

as of Oct. 24, 2007

ARMY AIRCRAFT LOSSES
Fiscal 2002 to present

	Hostile	Non-hostile	Total Aircraft
AH-64A/D	12	48	60
U/MH-60 A/L	8	26	34
C/MH-47	7	16	23
OH-58D	11	24	35
Total Aircraft	38	114	152

Fatalities	Combat	Accident	Total
	108	167	275

The Class A accident rate increased 69 percent, from 1.62 in fiscal 2006 to 2.74 accidents per 100,000 flying hours in fiscal 2007. There were 28 Class A manned aircraft accidents in fiscal 2007, five more than were reported in fiscal 2006. These accidents claimed the lives of 37 Army Soldiers, one Air Force Airman and one Department of Army Civilian and cost more than $99 million. Forty-six percent of the accidents and 81 percent of the fatalities occurred in the Central Command area of operations.

Biggest Culprit: Inadvertent Instrument Meteorological Conditions (IIMC)

During fiscal 2007, Army Aviation suffered four IIMC accidents, resulting in the deaths of eight people, all Army military personnel. Two occurred in theater and the other two occurred in Continental United States (CONUS). Three of the four accidents involved multi-ship missions. The crews in two of these three didn't appear to have an IIMC breakup plan. Three of the four occurred at night under night vision goggles (NVG). In two of these accidents, the crew knowingly violated directives from their chain of command which were intended to mitigate the IIMC risk. One crew was directed to remain overnight due to the weather, but elected to fly back to their home station. In the other accident, although the crew was directed to remain in the immediate vicinity of the airport, they elected to fly outside that area. Lack of proficiency in executing the IIMC procedures contributed to three of the four cases.

Airframes

The chart above compares the number of Class A accidents and fatalities for each aircraft type involved. Summaries of selected accidents follow.

UH/MH-60 Black Hawk

The Black Hawk community had eight Class A accidents and the highest number of fatalities with 21. Three of the eight accidents occurred in theater.

- While conducting a multi-ship extraction in support of combat operations at night under night vision goggles (NVG), a UH-60L incurred a tail rotor driveshaft failure. The aircraft spun to the right multiple times and crashed. All four crewmembers and 10 passengers onboard were killed.
- While on a basic combat skills training flight, the pilot attempted to conduct a roll-on landing during his first flight in the left seat. On touchdown, the aircraft landed hard and the main rotor flexed down and struck the tail rotor driveshaft. The aircraft was destroyed in the subsequent crash sequence and the Department of Army Civilian instructor pilot received fatal injuries.
- Three Soldiers were fatally injured when their UH-60 impacted the side of a mountain in a near-vertical high rate of descent. The crew was performing single-aircraft visual flight rules NVG currency training when they

encountered heavy snow showers and freezing rain. The aircraft descended to 1,100 feet and crashed into a heavily wooded, 45-degree slope.

- A UH-60L was Chalk 2 in a flight of three aircraft when the flight went IIMC. Chalk 1 executed IIMC procedures; Chalk 3 turned away from the clouds. Both of these aircraft recovered safely. Chalk 2 entered the clouds and developed an unusual attitude that was unrecoverable and crashed through a set of power lines. The aircraft was destroyed and three crewmembers received fatal injuries.

There were two accidents in which the main rotor blades of the UH-60 struck an object while ground-taxiing.

AH-64 Apache

The Apache community had eight Class A accidents which resulted in four fatalities. Five of the eight accidents occurred in theater.

- The accident aircraft was Chalk 2 in a flight of two Apaches in Iraq at night. The flight attempted to return to base from the forward arming and refueling point after completing a night combat reconnaissance and security mission. The pilot in command (PC) of Chalk 2 asked lead to turn around because of decreasing visibility. The lead aircraft began a left turn and Chalk 2 followed. The Chalk 2 pilot was on the controls and initiated the left turn. About halfway through the turn, the PC asked for and assumed the controls; however the aircraft continued to turn and descend until it impacted the ground, destroying the aircraft and fatally injuring both pilots.
- While on short final to a heliport during a single-aircraft, NVG training flight, the tail rotor developed a fixed-pitch condition. Upon application of collective to arrest the rate of descent, the aircraft entered an uncontrollable right yaw. The aircraft crashed and sustained major damage and the crew received minor injuries.
- During a Quick Reaction Force MEDEVAC escort mission, flying in the trail position in free cruise formation at 360 feet above ground level (AGL) and 127 knots indicated airspeed (KIAS), an AH-64D incurred a failure of the tail rotor gearbox assembly. The tail rotor head assembly broke from the aircraft, taking a large piece of the left-side stabilator assembly with it. The remainder of the stabilator functioned normally. The aircraft yawed to the right, pitched down, and required the crew to maintain directional control using airspeed and engine power levers. The crew flew the aircraft to a suitable airstrip and performed an emergency roll-on landing. There were no injuries, but the aircraft sustained structural damage. Both crewmembers were presented Broken Wing certificates and insignias for their actions after the failure.
- A team of two AH-64D aircraft, utilizing night vision devices, were performing terrain flight up a draw in a mountainous area in free cruise formation (200 feet AGL and 60 KIAS) when they inadvertently entered IMC. The lead aircraft crew continued flight in IMC while attempting to reestablish visual contact with the ground and their wingman. Their aircraft slowed to near zero airspeed, entered a high rate of descent and impacted the ground. The aircraft was destroyed and the flight crew received minor injuries.
- A team of two AH-64Ds and a UH-60L were flying in the same area searching for the wreckage of the AH-64D accident in the previous paragraph. The aircraft slowed to approximately 8 KIAS, entered a high rate of descent and impacted the ground. The aircraft was destroyed and the crew received minor injuries.
- During a day AH-64A single-ship additional training period continuation flight, the crew was conducting a flight maneuver when the aircraft developed an unrecoverable sink rate, struck the ground and was destroyed. Both crewmembers suffered fatal injuries.

CH/MH-47 Chinook

The Chinook community had four Class A accidents in fiscal 2007, resulting in three fatalities. Three of the four accidents occurred in theater.

- An MH-47E (Special Operations) was Chalk 3 in a flight of three conducting a night troop movement when it incurred an engine failure. The crew slowed the aircraft in an attempt to achieve single-engine airspeed, however, the rotor RPM began to drop and the aircraft fell almost vertically to the ground. The aircraft was destroyed, eight occupants were killed (seven Army and one Air Force) and 14 passengers were injured. The flight had encountered unforecasted, deteriorating weather and was executing IIMC breakup procedures before the engine failure.
- A CH-47D was ground taxiing when it contacted a stationary CH-47D aircraft. The moving aircraft sustained damage to the main rotor system, aft pylon and transmission, and the passengers sustained injury during egress. The parked aircraft was damaged from flying debris.

> **“FAILURE** to properly **RESPOND TO IIMC** continues to be a **KILLER.”**

• While on downwind for an approach, during a maintence test flight, a CH-47D was at approximately 2,725 feet AGL and 100 KIAS when it experienced a material failure causing the main rotor blades to strike the fuselage in flight. The aircraft was destroyed and five Soldiers were fatally injured.

OH-58D Kiowa Warrior (KW)

The KW community had four Class A accidents with one fatality during this timeframe. Half of the accidents occurred in theater.

• An OH-58D(R) was lead in a combat cruise formation during a convoy security mission flying at about 80 feet AGL and 80 KIAS when it struck a wire. Upon seeing wires, the pilot made an abrupt cyclic climb and struck the top wire at approximately 170 feet AGL with the tail boom of the aircraft. The pilot entered an autorotation descent. The aircraft rotated three times to the right and impacted the ground in an almost level attitude. The aircraft was destroyed, the pilot received fatal injuries and the PC was severely injured.

• The lead OH-58D(R) of a Scout weapons team, in free cruise formation at about 325 feet AGL and 98 KIAS, was conducting a night convoy security mission when they experienced an engine failure, descended rapidly and crashed. Both crewmembers suffered major injuries.

• An OH-58D(R) was in the second iteration of day, live-fire gunnery training when it impacted the ground while making a low-altitude turn. The aircraft was destroyed and both crewmembers suffered major injuries.

• A flight of four aircraft was in the process of parking when the main rotor blade of the fourth aircraft made contact with the main rotor blade of another aircraft positioned alongside. A third aircraft and a parked civilian airplane were also damaged by flying debris.

UH-1 Huey

The Huey community had two Class A mishaps during this timeframe: a wire strike and a dynamic rollover during touchdown in a confined area.

• The wire strike occurred while on a day personnel movement mission in mountainous terrain. The aircraft was flying about 350 feet AGL and 60 KIAS when it struck a set of wires while approaching the crest of a hill. The PC began an autorotation descent with power. As he applied collective at approximately 40 feet, the aircraft yawed right, impacted the side of the hill, and came to rest upright. One pilot and one passenger were seriously injured.

• During a day single-ship training mission, a UH-1H overturned upon landing to a confined area during a training iteration.

TH-67 Creek

The TH-67 community had one Class A accident with no fatalities. During the termination of a standard autorotation, the aircraft yawed and landed hard.

ARH-70 Armed Reconnaissance Helicopter

During the initial test flight, the crew experienced a fuel pressure low-warning signal, followed by an engine failure. The crew executed an autorotation, but upon ground contact, the aircraft overturned and incurred major damage. There were no injuries.

Fixed-Wing

The fixed-wing community experienced no reported Class A accidents during fiscal 2007. (The initial RC-12D posting in the August 2007 midyear review was later downgraded.)

Conclusion

Failure to properly respond to IIMC continues to be a killer. IIMC claimed eight lives and destroyed four aircraft during fiscal 2007. Maximizing instrument meteorological flight training and evaluation opportunities in the actual aircraft would improve instrument flight proficiency. Planning every flight as if it would be flown in marginal conditions would help prepare a crew for an IIMC event.

Failure to follow procedures played a factor in two IIMC accidents and a wire strike. Standards are put in place to mitigate risk. Deviating from established standards increases the risk you will have an accident.

We know our Soldiers live and operate on the leading edge, but they should not be alone on that edge. Leaders must do the right thing by staying engaged with their Soldiers; only then will the arrow turn down for fiscal 2008!

Editor's note: These statistics are current from the USACRC database as of Oct. 24, 2007. Delayed reports and follow-up details on preliminary reports could change the statistics, figures and findings.«

MODIFYING EQUIPMENT IS RISKY BUSINESS

PERRY WILDS
U.S. Army Combat Readiness/Safety Center
Fort Rucker, Ala.

No one would ever put unauthorized parts on an Army aircraft, right? Then why would someone risk using unauthorized, untested Aviation Life Support Equipment?

While serving at the U.S. Army Aeromedical Reasearch Laboratory as the program manager for the Aviation Life Support Equipment Research Program, I would quite often discover unauthorized ALSE onboard Army aircraft. Anything from hush kits, zeta liners, unauthorized seat cushions, HGU-56/P caps drilled into the integrated helmet and display sighting system shells or into the earcup—and that's just the beginning.

Why would a unit abide by Army regulations in the continental United States and throw those same regulations out the window when they deploy? I've never met a commander who would use Army dollars to purchase silk pajamas for their Soldiers to fly in because they're more comfortable than the Nomex® flight suit. I've also never heard of anyone purchasing an engine part from an advertisement on a late night infomercial and installing it in an aircraft engine. So, why are people buying untested ALSE?

Maybe it's the clever ads used by vendors to sell their products. One vendor's Web site advertised that their helmet liner reduced impact loads by as much as 35 percent compared to the standard-issue HGU-55/P TPL liner. However, when the USAARL tested an HGU-56/P helmet equipped with one of that vendor's products, they found head decelerations significantly exceeded the 175-G pass-fail criterion. Impacts at those increased levels could lead to a severe concussion, loss of consciousness or even death in what otherwise would be a survivable crash.

> "Why **WOULD** a unit **ABIDE BY ARMY REGULATIONS** in the **CONTINENTAL UNITED STATES** and **THROW** those same regulations **OUT THE WINDOW** when they **DEPLOY?**"

There are two problems with buying commercial off-the-shelf products.

- You cannot believe products actually work until accurate testing is completed. Product testing is usually conducted by manufacturers to provide a finding that reflects well on the product they are selling. As illustrated above, the results are often skewed.
- Environmental testing must be conducted to determine product longevity. A product that might work for a short period of time could completely fail when exposed to sand, wind and dust. For example, do you recall the problems with a commercial brand of body armor that was being used by Soldiers awhile back? Exposed to the heat and humidity in Iraq, the armor degraded rapidly.

It has been said before that it's going to take a catastrophic event to finally have ALSE taken seriously. I hope that's not true. Remember, ALSE is tested as a system. If you replace any component in that system, you are altering its performance. Bottom line: by using untested ALSE, you're risking your life or the lives of your Soldiers.

AVIATION

AH-64

CLASS C D Model

- The aircraft experienced an over-torque during takeoff.

CH-47

CLASS C D Model

- Post-flight inspection revealed possible strut damage associated with an assault landing in brownout conditions.

CLASS C

- Upon post-flight inspection, crewmembers discovered a 10-inch Craftsman adjustable wrench protruding from the tunnel cover. Further inspection found driveshaft scoring and damage to the forward green rotor blade. The previous flight engineer had performed maintenance using a personal wrench.

MAINTAINERS MUST CONDUCT A THOROUGH PRE AND POST-MAINTENANCE TOOLBOX INVENTORY—FOD CAN KILL.

CLASS E

- While at cruise flight, the pilot in the right seat noticed an unusual amount of airflow coming from the door. The pilot transferred the controls and attempted to close the sliding window. The window failed to close and the pilot then resumed control of the aircraft. Shortly after, the door jettisoned from the aircraft. The aircraft landed without further incident. Door was replaced and aircraft was returned to flyable status.

OH-58

CLASS C D(R) Model

- Class C: During full authority digital electronic control manual approach to a run-on landing, the IP allowed the aircraft to touch down too far down the lane. The IP returned the FADEC system to AUTO, increased RPM and increased collective prior to NP reaching 100 percent. The FADEC system sensed the droop and supplied the maximum amount of fuel flow available to compensate, resulting in an NP overspeed of 122 percent for four seconds. The aircraft required engine replacement.

UH-60

CLASS D A Model

- During cruise flight, birds struck the pilot's windscreen and chin bubble. Chin bubble was completely destroyed and windscreen was cracked. The aircraft was flown to nearest secure FOB and inspected and was released for a one-time flight back to the LSA where the necessary repairs could be made.

CLASS C L Model

- The crew detected a main rotor blade strike during descent. Post-flight inspection revealed damage to two MRB.

ENSURE YOU DO A HIGH AND LOW RECON OF THE LANDING AREA TO VERIFY SUITABILITY.

CLASS D

- En route to an FOB, a flock of birds appeared at the aircraft's 12 o'clock. Pilot on the controls initiated a cyclic climb to avoid the birds. One bird struck pilot's windscreen with no visible damage and mission was continued. After landing, a post-flight inspection revealed the outer pane of windscreen was cracked. Windscreen was repaired and aircraft released for flight.

UC-35

CLASS E A Model

- The pilot failed to recognize the aircraft fuel door was open after completion of a walk-around inspection before flight. On climb out, a vibration was noticed and stopped after about eight minutes of flight. After landing and shutdown at destination, transient alert crew noticed fuel door on aircraft was open and fuel cap and lanyard was missing. Fuel cap caused minor paint damage before separating from aircraft.

UAS

RQ-7B

CLASS B

- The UAS experienced an engine failure following a fire control system handover. Recovery chute was deployed and system was recovered with damage.

- The UAS experienced a generator and subsequent engine failure during normal operations. Recovery chute was deployed and system was recovered with damage.

GROUND

ACV

CLASS A

- An M2A2 Bradley was damaged when it slid down an embankment and overturned into a canal. The Soldiers inside the vehicle suffered minor injuries.

CLASS B

- During a night range safety mission, an M1127 Stryker slid off the crest of a tank trail and overturned into a ditch, damaging the mounted Long Range Advanced Scout Surveillance System. The driver of the vehicle was not injured.

- An M3A3 Bradley suffered extensive damage when the engine caught fire due to an apparent leak and spewing of coolant following an OVERTEMP indication.

ARMY AIRCRAFT LOSSES

FY02 to Present

thru December 12, 2007

Hostile/ Non-hostile

AH-64A/D	12/50
U/MH-60A/L	8/27
C/MH-47	7/16
OH-58D	11/24
TOTAL	38/117

ARMY GROUND LOSSES

FY08

thru December 2007

Class A Fatalities

AMV	6/6
ACV	0/0
PERSONNEL INJURY includes weapons handling accidents	5/4
FIRE/ EXPLOSION	2/2
PROPERTY DAMAGE	2/0
TOTAL	15/12

AMV

CLASS A

Two Soldiers were killed and two others were injured when the driver of an M1114 lost control and struck a steel post, causing the vehicle to roll down a 360-foot ravine. Neither of the fatally injured Soldiers was wearing a seat belt.

A Soldier was ejected and killed when the M1114 he was operating ran off the road and overturned several times.

A Soldier serving as an M114 gunner was fatally injured when the vehicle ran off the road and overturned into a river. The driver of the vehicle was not injured.

A Soldier suffered fatal injuries when the M1151 he was operating hit a barrier and overturned.

A Soldier died after being pinned between an M984 wrecker he was ground guiding and an M997.

DO YOUR SOLDIERS KNOW AND PRACTICE PROPER GROUND-GUIDING PROCEDURES?

CLASS B

A Soldier suffered second-degree burns to his face and head when a flare went off inside the M1114 he was riding in.

Personnel Injury

CLASS A

A Soldier was fatally injured when he was struck by a live .50-caliber round during weapons familiarization training. The round was apparently mixed with the inert "dummy" rounds.

A Soldier was electrocuted and two others were injured while conducting a barrier emplacement mission. The crane operator moving the barriers violated the 10-foot standoff from high-voltage wires requirement by bringing the boom within a foot of an overhead power line. An electrical charge jumped from the line to the boom, down a chain, into the rebar inside the barriers and then into the Soldiers touching the barrier.

CLASS B

A Soldier's pinkie and the tip of his ring finger were amputated while loading a 120 mm round into a launch tube.

DRIVING

POV

CLASS A

Two Soldiers riding as backseat passengers in a sport utility vehicle were killed when the driver lost control and the vehicle rolled five times. The Soldiers were not wearing their seat belts and were thrown into oncoming traffic and struck by a truck. The driver and another Soldier riding in the front seat were wearing their seat belts and survived the accident.

DO YOUR SOLDIERS KNOW THEY ARE 75 PERCENT LESS LIKELY TO BE KILLED IN A ROLLOVER CRASH IF THEY ARE WEARING A SEAT BELT?

A Soldier was late for duty and driving his SUV to work when he went off the right-hand shoulder. The Soldier overcorrected, crossed the roadway, rolled over and struck a guardrail. Although the Soldier was wearing his seat belt, he was fatally injured.

A Soldier was driving in dense fog when he attempted to pass another vehicle and struck an oncoming tractor-trailer. Both vehicles became engulfed in flames and the Soldier was pronounced dead at the scene.

DO YOUR SOLDIERS UNDERSTAND DRIVING IN FOG CAN BE LIKE DRIVING BLIND FOLDED?

POV DRIVING LOSSES FY08

thru December 2007 — Class A accidents/Soldiers killed

CARS	5/5
SUV/JEEPS	4/5
TRUCKS	1/1
MOTORCYCLES	8/8
OTHER*	0/0

*Includes: vans and ATVs

19 TOTAL DEATHS

07 FY07: 14 — 3 year average: 17

CLICK IT!

CLASS A

Two Soldiers riding as backseat passengers in a sport utility vehicle were killed when the driver lost control and the vehicle rolled five times. The Soldiers were not wearing their seat belts and were thrown into oncoming traffic and struck by a truck. The driver and another Soldier riding in the front seat were wearing their seat belts and survived the accident.

A Soldier was driving her vehicle with her brother riding as a passenger when she failed to yield right-of-way at an intersection and collided with an oncoming vehicle. She was evacuated to a local medical center where she later died. Both she and her brother had been wearing their seat belts.

A Soldier was attempting to pass another vehicle on a curve when he lost control of his vehicle and collided with an oncoming tractor-trailer. The Soldier suffered fatal injuries.

A Soldier was riding as a passenger in a car driven by a civilian during a street race when the driver lost control and hit a tree. Although the Soldier was wearing his seat belt, he died at the scene.

POM

CLASS A

A Soldier was operating a borrowed motorcycle when he failed to negotiate a curve, veered over a driveway, collided with a brick pillar and struck an apartment building. The Soldier was not wearing a helmet, even though there was one attached to the motorcycle. The Soldier also had not attended Motorcycle Safety Foundation training. The Soldier was pronounced dead at the scene.

THIS SOLDIER LEFT BEHIND A WIFE AND A YOUNG CHILD. DO YOU COUNSEL YOUR SOLDIERS ON THE IMPACT THEIR UNSAFE ACTS CAN HAVE ON THEIR FAMILIES?

While operating his motorcycle late at night, a Soldier struck an automobile that violated right-of-way. The Soldier, who had neither been wearing a helmet nor had attended MSF training, was transported to a local medical center where he was pronounced dead.

During a group ride on an interstate, a Soldier accelerated to high speed on his sport bike and went off the road and crashed into a tree. The injured rider was evacuated to a local medical center where he was pronounced dead.

A Soldier was speeding on his motorcycle when he struck the passenger side of a pickup truck turning left in front of him. The motorcycle caught fire and the Soldier was pronounced dead at the scene. Although the Soldier was wearing a helmet, he was not licensed, nor had he attended MSF training.

A Soldier was operating his motorcycle when he collided with the rear of a vehicle as the driver was turning left. Although the Soldier was wearing all of his personal protective equipment, his injuries proved fatal.

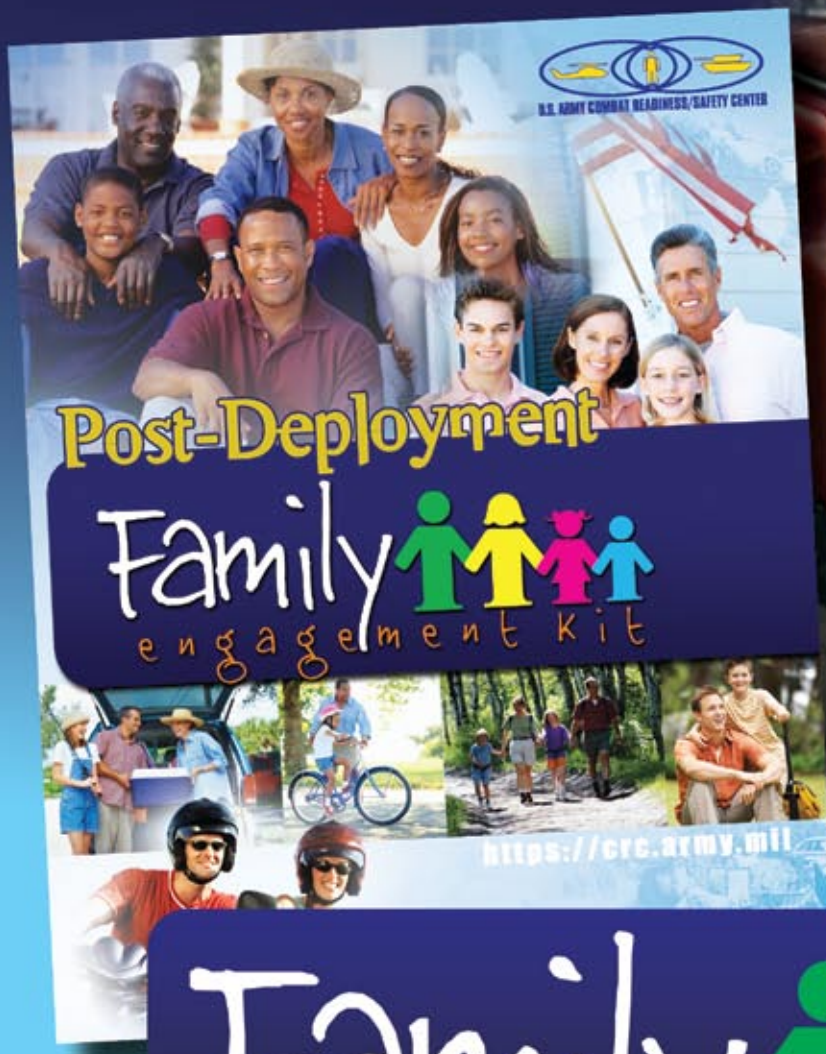
A Soldier was operating his motorcycle at high speed and attempting to merge into traffic when he lost control and struck a ditch. The Soldier was taken to a local medical facility where he later died. The Soldier had been wearing the required PPE, but did not have a state motorcycle endorsement on his license.

OFF-DUTY

Personnel Injury

CLASS A

An off-duty Soldier was swimming in a lake alone when he drowned while reportedly searching for a personal item. His body was recovered by searchers the following morning.



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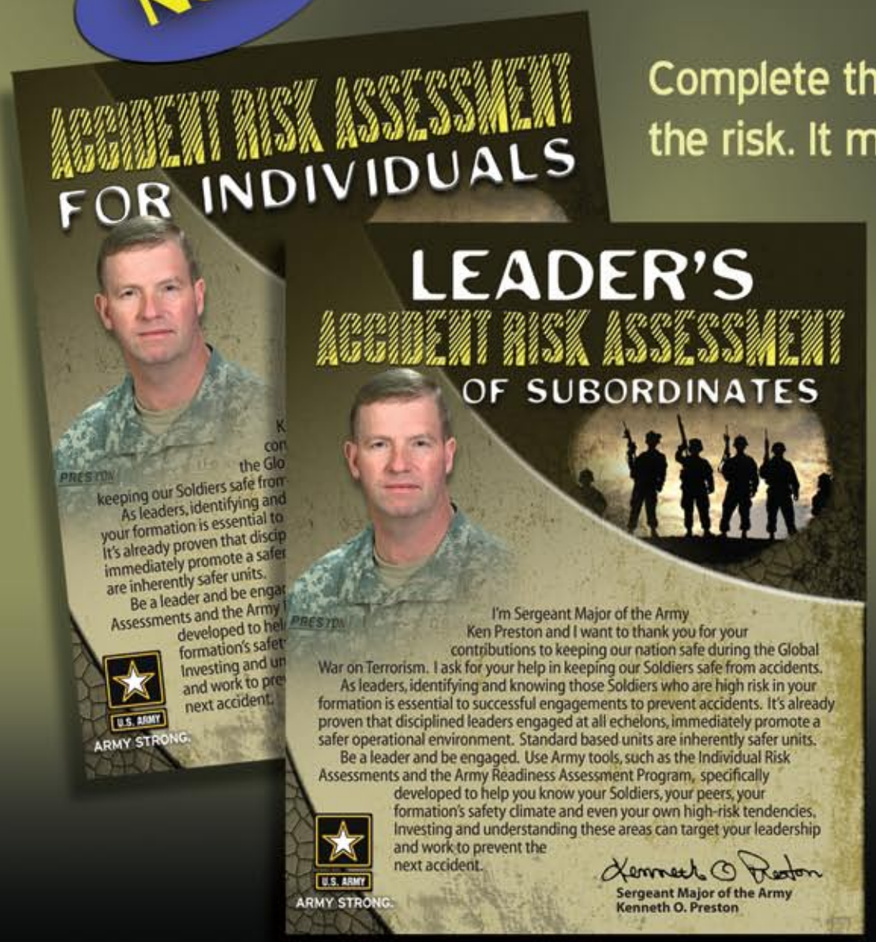
ARMY SAFE IS ARMY STRONG

ACCIDENT RISK ASSESSMENT

New

Tools from the U.S. Army Combat Readiness/Safety Center



Complete the assessment to determine who might be at risk and what you can do to reduce the risk. It might change your life; it might save your life.

- Pocket-size tools
- Provides awareness for individuals on their personal level of risk
- Helps quantify risk potential and focus on intervention and prevention strategies, while promoting interaction with individuals

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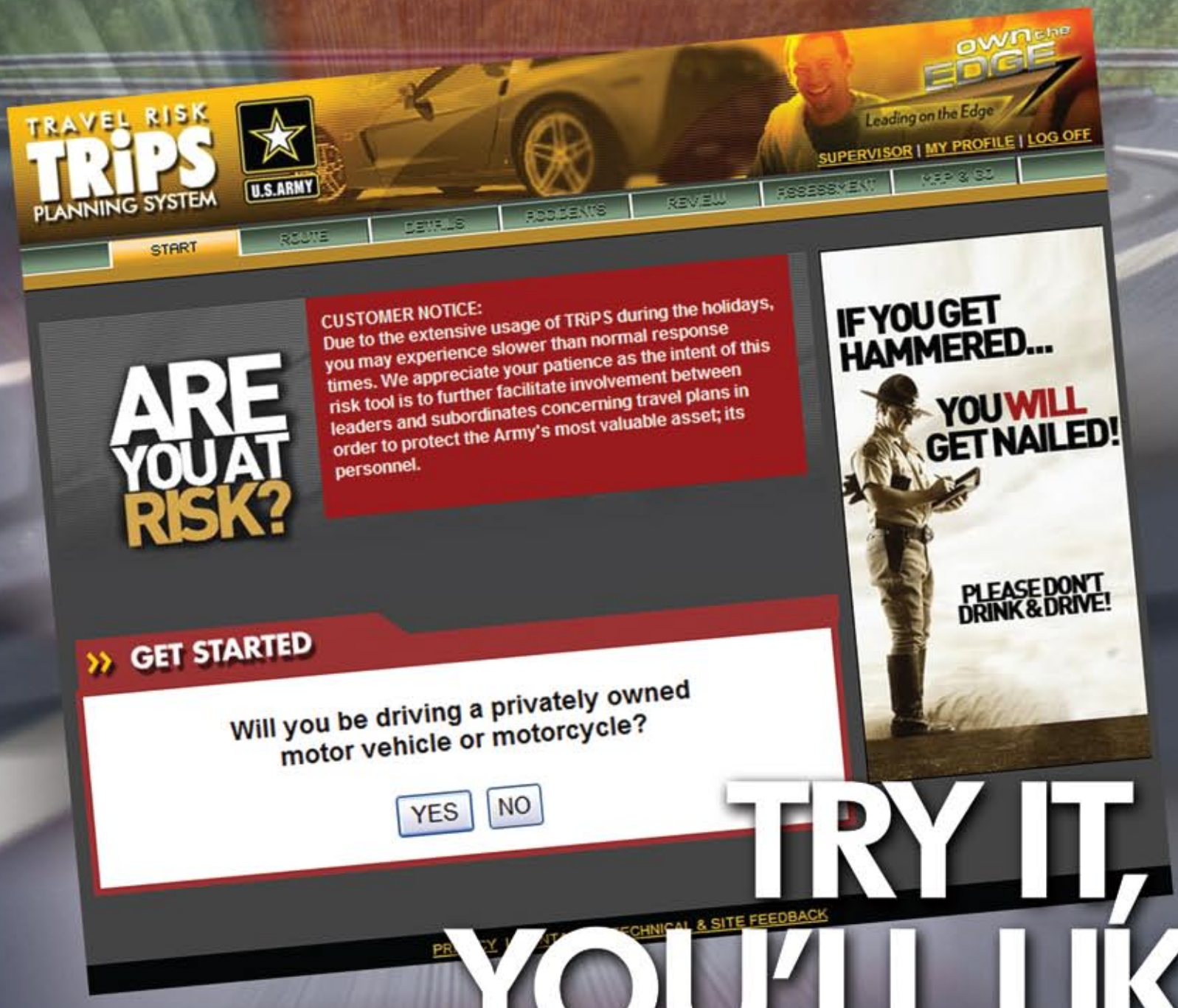

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ARMY SAFE IS ARMY STRONG

ROLLOVERS: PREVENTIVE MEASURES FOR YOUR MISSION p. 28

KNOWLEDGE

VOL 2 FEBRUARY 2008

OFFICIAL SAFETY MAGAZINE OF THE U.S. ARMY

GET IN YOUR LANE p. 5

DEVELOPING SAFE DRIVING HABITS

- CHECK YOUR TREAD p. 10
- DEEP IN IIMC p. 12
- THE EYES HAVE IT p. 20

+

KNOW YOUR CREW p. 16

SPEAK UP AND ASK QUESTIONS

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OWN the EDGE
Leading on the Edge

KNOWLEDGE

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contents

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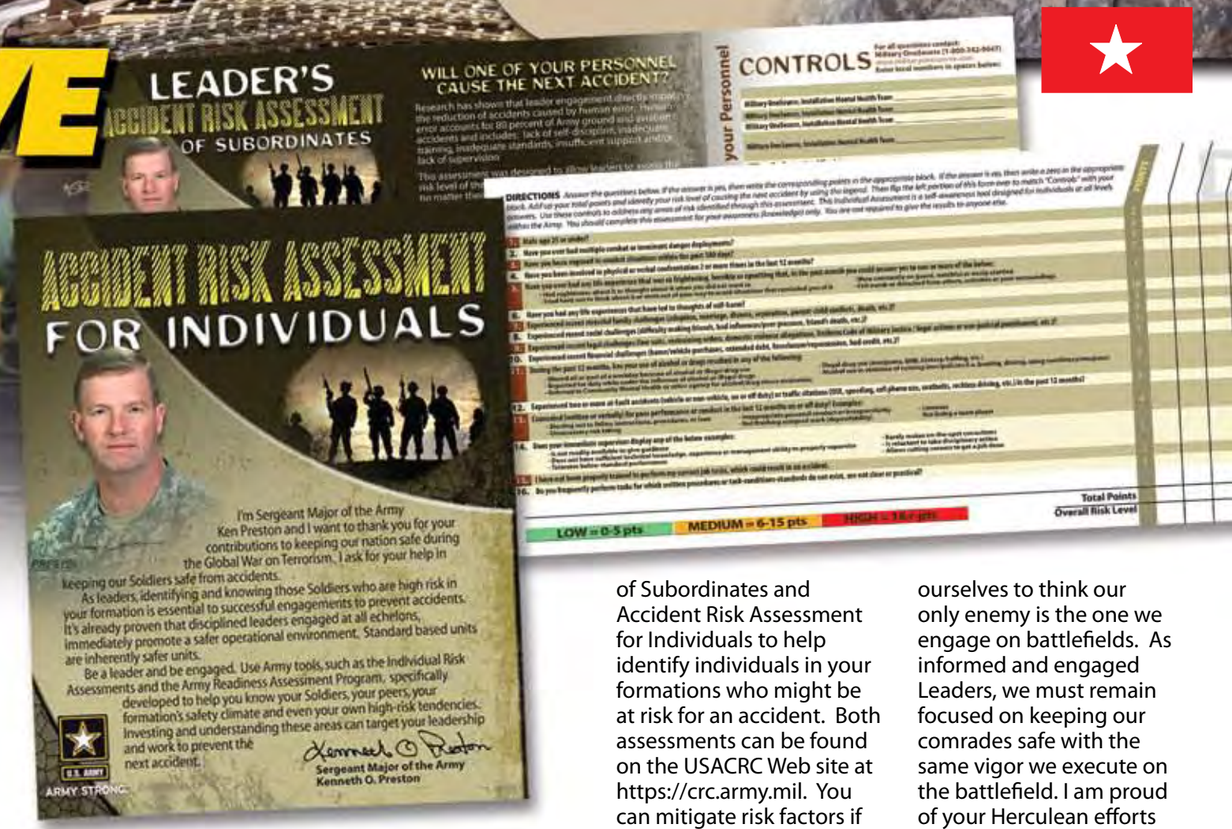
SURVIVE TO ARRIVE

"As **INFORMED** and **ENGAGED LEADERS**, we must remain **FOCUSED** on keeping our comrades **SAFE** with the **SAME VIGOR** we execute on the battlefield."



My job requires extensive travel, which means I'm often at airports throughout the U.S. and abroad. I swell with pride when I see young Soldiers at these airports, returning from deployed locations to the loving arms of their Families.

I often wonder how long they have been Soldiers, from where did they depart, where they are going and who they will meet. I also wonder if these Soldiers were prepared to travel and, more importantly, if they're prepared for what awaits at their destination.

Right or wrong, I somehow believe that Soldiers are best cared for when they are in the company of fellow Soldiers. Somewhere in my years of training and experiences with our great Army, I firmly believe that the best supervision a Soldier can have is in the unit, where there is compassionate professional leadership to watch and protect. I portend that the NCOs and officers that either launched or stand ready to receive these Soldiers are best prepared to take care of them. Even knowing that 40 to 50 percent of the Soldiers I see are en route to a theater of conflict, I am convinced that where there is an engaged Leader, these Soldiers are protected.

We learned from our initial entry that there are two ironclad priorities in military operations that are engrained in us: mission accomplishment and the welfare of our Soldiers. These priorities are as applicable in war as in peace. The honor of ownership and the responsibilities pertaining to the well being of those in our ranks lies with us. Within our formations, our Soldiers have battle buddies, NCOs and officers that attempt to ensure they make it home safely from their deployment. However, I contemplated who at home serves as guardian? The answer is simple—you, I and Family members.

As we build relationships with our Soldiers, we understand what makes them tick. Use tools such as the Leader's Accident Risk Assessment of Subordinates and Accident Risk Assessment for Individuals to help identify individuals in your formations who might be at risk for an accident. Both assessments can be found on the USACRC Web site at https://crc.army.mil. You can mitigate risk factors if you are aware risk exists, and your chain of command can help. As Leaders, identifying and knowing your Soldiers is paramount to protecting them.

You all should understand that as an Army having fought for six-plus years, daily executing Warriors task and drills, we can't allow ourselves to think our only enemy is the one we engage on battlefields. As informed and engaged Leaders, we must remain focused on keeping our comrades safe with the same vigor we execute on the battlefield. I am proud of your Herculean efforts in protecting our Soldiers on both battlefronts, home and abroad.

Thank you - and An Army Safe is An Army Strong!!

William H. Forrester
Brigadier General, USA
Commanding

> "As engaged **LEADERS,** we need to **ENSURE SOLDIERS** are **AWARE** of the **TOOLS/RESOURCES** made **AVAILABLE** to them."

MOVING LEFT OF THE BOOM ON MOTORCYCLE ACCIDENTS

Spring is the traditional start for motorcycle riding and, for many riders, Daytona Bike Week (Feb. 29 through March 9) marks the unofficial beginning of the season. Numbers indicate motorcycle sales have steadily increased over the years, and riding is a popular activity or mode of transportation among our ranks. As engaged Leaders, we need to ensure Soldiers are aware of the tools/resources made available to them.

The Chief of Staff, Army, now requires the Six Point Program developed by the U.S. Army Combat Readiness/Safety Center be used by all Army units. It is the minimum standard. This program requires command emphasis, discipline, composite risk management, standards and provides alternatives, as well as a commander's assessment. The focus of the program is engaged leadership through positive assertion of proactive measures and standards.

In fiscal 2007, there were 38 Soldiers killed in motorcycle accidents. Our data indicates that 65 percent of these motorcycle accidents involved Soldiers older than the age of 25. Of these mishaps, 60 percent involved Soldiers in the grade of E-5 or higher. What concerns me most about these numbers, aside from the horrific loss of life, is these fatalities include our senior noncommissioned officer (NCO) ranks. In some motorcycle crashes involving fatalities, the sequence of events leading up to the incident indicate these deaths were preventable. Some of these incidents indicate that fatigue, drinking and lack of engaged leadership among fellow NCOs were paramount in the Soldiers death.

Department of Defense Instruction (DoD) I 6055.4 and Army Regulation 385-10, *Army Safety Program*, Chapter 11, state that Soldiers operating a motorcycle must complete safety training. It has been my experience that Soldiers believe that these regulations only apply when they are riding on post, which is not true. The regulation states failure to wear personal protective equipment or comply with licensing or operator training requirements is against the regulation.

Coupled with the Six Point Program, please remember to be diligent and continue to move "left of the boom," not just in accident prevention measures, but in every way that involves the safety of Soldiers in our ranks.

In closing, safety is inextricably tied to readiness. To move "left of the boom," we must go beyond the lectures and instruction on risk management and ensure it is being practiced within our ranks. While risk management remains the basic process by which we can reduce accidents, remember engaged Leadership is the key to risk management.

As an aid, I encourage you to work closely with your safety professionals and visit our Web site at https://crc.army.mil, which contains helpful tools regarding motorcycle safety. The Motorcycle Safety Foundation also has some great tips available on its Web site, which can be found at http://msf-usa.org.

Army Safe is Army Strong!

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

Happy TraiLs!

I pulled out the map and looked at the route from our home south of Albuquerque, N.M., to Little Rock, Ark., where my parents lived. The trip was easy enough—go north on Interstate 25 for about 20 miles to Albuquerque, then turn right (east) on Interstate 40 for the next 880 or so miles. Nine hundred miles was a bit far to go straight through, even if it was all on the interstate. Still, I was tempted to push the envelope and shoot for 650 to 700 miles. I figured if we made it that far the first day, we could make my parents' place in time for lunch the following day.

BOB VAN ELSBERG
U.S. Army Combat Readiness/Safety Center
Fort Rucker, Ala.

Departure was typical for us—about two hours later than planned. Still, I hadn't given up my goal of putting as many miles behind us as possible. We crossed the eastern half of New Mexico and the Texas panhandle. It was dark as we entered Oklahoma City and I had a decision to make. I'd only covered about 550 miles—well short of my desired goal. I could pull off the road and try for lodging at Tinker Air Force Base, or I could keep pressing on. I should have stopped, but, like many guys, I was "goal oriented." I decided to drive 'til I dropped.

I maybe got 80 miles east of Oklahoma City when I hit the wall. I was exhausted, my eyes were burning and things were turning blurry. I started looking for a place to spend the night, but the pickings were pretty slim. I'd pull off the interstate only to find "No Vacancy" signs glowing in front of almost every hotel. It was after 8 p.m. and other travelers had already snapped up the few rooms available. I was starting to think we might have to sleep in the car when I finally found a place. We checked in, dragged our bags to the room, showered and collapsed into bed.

I'd like to say we slept in the next morning to recuperate—but we didn't. Still goal oriented, I got us back on the road early with the intent of making up time. We got to my folks' house in Little Rock a little after 1 p.m., but we were "zonked" and spent most of the afternoon napping. I realized, belatedly, we'd have been better off had we stopped in Oklahoma City, gotten a good night's rest and arrived a bit later in the day. At least we'd have been awake to enjoy the first few hours of our visit.

"Be **REALISTIC** about the **DISTANCE** you can cover in a **DAY**. After **EIGHT HOURS** or so, you're starting to **LOSE** your **EDGE** behind the **WHEEL**."

STUCK ON THE ROAD AGAIN

Just because today's vehicles are the most reliable ever doesn't mean a malfunction couldn't strand you on the side of the road. For those unexpected occasions when your trip is interrupted by a breakdown, keeping a roadside emergency kit can be a real help. The folks at the National Highway Traffic Safety Administration recommend your kit contains the following:

- Cell phone
- First aid kit
- Flashlight
- Flares and a white flag
- Jumper cables
- Jack (and ground mat) for changing a tire
- Work gloves and a change of clothes
- Basic repair tools and some duct tape (for temporarily repairing a hose leak!)
- A jug of water and paper towels for cleaning up
- Nonperishable food, drinking water and medicines
- Extra windshield washer fluid
- Maps

Do you see yourself in this story? Have you, like me, ever pushed it on a Family trip only to realize you lost more than you gained? Here are some tips I have learned from experience and also gleaned from the U.S. Army Combat Readiness/Safety Center's POV Toolbox and Travel Risk Planning System (TRiPS) program. You can also check out TRiPS online at https://crc.army.mil. Click on DRIVING/POV to access TRiPS.

Good Trips Are Planned.

- Be realistic about the distance you can cover in a day. After eight hours or so, you're starting to lose your edge behind the wheel. If it takes longer than that to get to your destination, identify a good stopping point and make reservations before leaving on your trip. Also, don't count on being able to average the speed limit on the interstate. Stops for gas, food and occasional rest breaks—not to mention delays caused by accidents, road construction and traffic congestion in large cities—will reduce your average speed. A more realistic average is one at least 10 mph under the speed limit.

Got Kids?

- Make sure they're safely restrained in a child safety seat or wearing seat belts if they're old enough.

RESTRAIN YOUR KIDS, PLEASE!

The National Highway Traffic Safety Administration offers the following four tips on protecting your young children when they ride in your vehicle:

- For the best possible protection, keep infants in the backseat in rear-facing child safety seats as long as possible up to the height or weight limit of the particular seat. At a minimum, keep infants rear-facing until a minimum of age 1 and at least 20 pounds.

- When children outgrow their rear-facing seats, they should ride in forward-facing child safety seats in the backseat until they reach the upper weight or height limit of the particular seat (usually about age 4 and 40 pounds).

- Once children outgrow their forward-facing seats, they should ride in booster seats in the backseat until the vehicle's seat belts fit properly. Seat belts fit properly when the lap belt lays across the upper thighs and the shoulder belt fits across the chest (usually at age 8 or when they are 4 feet 9 inches tall).

- When children outgrow their booster seats, they can use the adult seat belt in the backseat if it fits properly as described above.

For more information about Child Passenger Safety Week and the proper use of booster seats, please visit www.nhtsa.gov.

- Set the example by always wearing your seat belt.
- Bring along a few favorite books or soft toys to keep them entertained and occupied. They'll enjoy the trip better and so will you if they're not asking, "Are we there yet?" every five minutes.

Don't "Tough Out" Fatigue.

- Your body's time clock is geared toward a consistent rest cycle that no amount of caffeine, cold air or loud music can effectively change. If you try pushing that envelope, you can experience something called a "microsleep." Microsleeps can be as short as two or three seconds or last for several minutes. How do you know if this is happening to you? If you're having "head snaps" or if you're going down the road and suddenly can't recall how you got where you are, you could be suffering microsleeps. People experiencing this have been known to go through red lights or fail to turn when entering corners.

A Little PMCS, Please.

- It's OK for you to be bald, but not your tires. When they're out of tread, you're out of traction—especially on rain-slicked roads. If you stick a penny into your tread and see the top of Lincoln's head, it's time for new tires. Also, check your air pressure. Underinflated tires build up more heat and are more likely to fail. Follow your vehicle manufacturer's recommended tire pressures—usually listed on a sticker inside the doorframe—not the maximum recommended on the tire's sidewall. Your vehicle's suspension was designed to provide optimum handling at the vehicle manufacturer's recommended inflation levels (see the related article "Where the Rubber Meets the Road"on page 10).
- Give yourself a "brake"—if your pedal goes more than halfway to the floor, your brake system needs service. If your pedal pulsates during normal braking, your discs may be warped and need to be turned or replaced.
- Can you see and be seen? Is your windshield scratched, pitted or cracked? Not only are damaged windshields harder to see through, but badly cracked ones can weaken your roof, making it more likely to crush during a rollover crash. How about your wiper blades—do they clean the windshield clearly or do they leave streaks? Do both of your headlights work? You can't avoid trouble if you can't see it. How about your tail, brake and turn lights? If you can't signal, other drivers can't safely react to what you're going to do.
- Check the vitals under the hood—especially your oil, coolant, transmission and brake fluid. Make sure they're filled to the proper level and keep some extra in your vehicle—just in case. Check your radiator and heater hoses for cracks and keep a roll of electrical tape with you. Wrapping electrical tape around a leaking radiator hose can provide a temporary repair until you find a service station.

There is an old saying that goes, "Getting there is half the fun." If you're traveling with your Family this spring, why not make the drive part of the pleasure?

FYI

Not sure which booster seat or child safety seat is right for your kids? Check out the National Highway Traffic Safety Administration's suggestions online at www.nhtsa.gov.

where the rubber meets the road

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There's an old saying that goes, "They don't make cars like they used to." Well, that's true. These days, they make them a lot better. They also make tires a lot better than they used to and some are now sold with limited warranties as long as 80,000 to 100,000 miles. Still, unless you trade in your car for a new one every two or three years, you're probably going to have to buy a new set of tires for your vehicle.

For some people, that might seem like a pretty easy decision—just replace the tires with the same size that originally came on the vehicle. For others, that decision can be a bit more complicated, especially if they want different performance or wear characteristics than provided by the original tires. And for those who've bought used cars, there's a good chance they don't know what kind of tires the vehicle originally had.

Why should this even make a difference? If you put the same size and type of tire (passenger, performance or truck) you had on your vehicle previously, won't it handle the same? Maybe—but maybe not.

For instance, I'd put more than 50,000 miles on a set of Goodyear tires I had on a Toyota compact truck and noticed the tread was getting pretty shallow. My dad—a former long-haul truck driver—had often reminded me "your tires are your life." With that tape playing in the back of my mind, I decided not to wear out the last bit of tread trying to get every possible mile out of the tires. I'd already driven on some rain-soaked roads and felt the traction getting a bit "iffy." Since it's a lot cheaper and less painful to be safe than sorry, I bought a new set of tires, albeit from a different manufacturer. The tread design promised good traction in bad weather conditions.

As I drove home for the first time on my new tires, I discovered some drastic changes in my truck's handling. The power steering felt extremely light—so much so that I began to wonder if I had some play in my steering. However, I tested the steering and didn't find any play or looseness. What I did find, though, really got my attention.

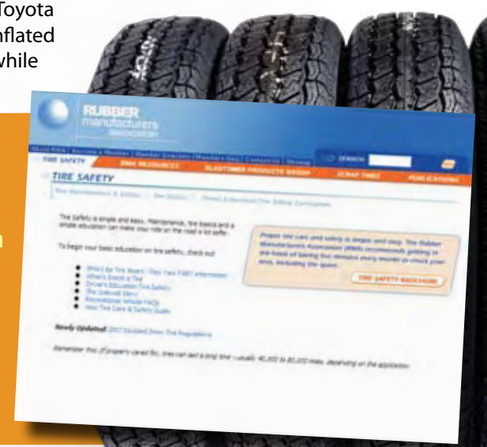
My earlier set of tires had a 35-psi maximum inflation pressure, and Toyota recommended the front tires be inflated to 29 psi. The new tires I bought, while the same size as those I'd replaced, had a maximum inflation pressure of 44 psi. When they were mounted on my rims, all four tires were inflated to that maximum pressure. That higher inflation pressure reduced the tires' rolling friction, making a noticeable difference in my truck's handling. My steering became so sensitive that I couldn't keep my truck centered in my lane. I felt like I was driving a different vehicle—and that made me a bit uncomfortable. On the way home, I found an isolated section of road and practiced making rapid lane changes and dodging imaginary obstacles. I didn't want to be surprised by my truck's handling if I suddenly faced an emergency on the road.

After talking to the tire dealer and the local Toyota dealership, I reduced the tires' inflation pressures to bring them in line with Toyota's recommendations. My truck's handling returned to normal. The next time I bought a new set of tires, I made sure their maximum inflation pressure was 35 psi—a level much closer to what Toyota recommended for my vehicle.

This experience taught me that automakers include tire inflation pressures when they engineer the steering and suspension systems in their vehicles. When you change that engineering through ignorance or to have the coolest looking or toughest tires, you're changing how your vehicle's "rubber meets the road." If you change things dramatically enough, that rubber might be a skid mark leading to a pile of crumpled metal. With your life riding on your tires, can you afford to make the wrong choice? «

FYI

Do you get confused trying to understand all the information on a tire's sidewall? Do your tires seem to be wearing abnormally or vibrating as you drive? Check out the Rubber Manufacturers Association Web site at http://www.rma.org/tire_safety/ for tips on tire safety. Also, just in case you wanted to know, April 20 through 26 is National Tire Safety Week.



THERE I WAS... DEEP IN IIMC!

CHIEF WARRANT OFFICER 3 BRIAN K. CALHOUN
P Troop, 4/3 Armored Cavalry Regiment
Fort Hood, Texas

This is a brief account of what happened to my co-pilot gunner (CPG) and me the night we entered inadvertent instrument meteorological conditions (IIMC).

The night's task was an AH-64D Readiness Level-3 (RL-3) progression local area operation (LAO) including as many night and night vision system (NVS) base tasks we could complete within our three-hour period of instruction. This was our fourth flight together as a crew. Our three previous missions, flown during the day with an hour of hood training, had gone smoothly.

My CPG had more than 300 hours in Army aircraft with upwards of 100 hours of experience with night vision systems. On this mission, he was the pilot. By comparison, I had 1,600-plus hours in Army aircraft with more than 700 hours of NVS time. During this mission, I was the instructor pilot (IP).

Here is the rest of the background for the flight:

- Notice to Airmen: Grey Army Airfield precision approach radar was out of service.
- Crew Rest: The crew had more than 24 hours of rest the day before.
- Mission Brief: Briefed and approved for low-level risk.
- Weather Brief: Ceilings scattered at 5,000 feet with overcast at 7,000, visibility five statute miles with localized rain showers in the area. Winds were from the northeast at 10 to 15 mph, and we were told to expect reduced visibility due to the rain.

We met three hours before takeoff for our mission brief and table talk. We covered all the standard crew brief topics, including local procedures for IIMC. A half hour past sunset, we departed Hood Army Airfield on a single-ship flight directly to the eastern side of Fort Hood for our terrain flight training. I was using night vision goggles (NVG) and my CPG was using the pilot night vision system (PNVS) for better terrain identification. Upon arrival to the terrain flight area, we determined the rain had reduced visibility to an unsafe level for training. We exited the low-level area to transition to the western side of Fort Hood in anticipation of better weather conditions. When we arrived there we found light rain and good visibility; however, in the airspace corridors, I estimated the overcast ceilings

at 1,500 feet above ground level (AGL).

We arrived at a local dirt flight strip in the training area. For better situational awareness, we conducted terrain flight tasks in the area around the flight strip. After about 40 minutes of terrain flight and covering only a four-kilometer radius of the flight strip, the rain increased to a level that I couldn't see as well as I wanted to with the night vision goggles (NVG). As a result, I changed to the target acquisition and designation system (TADS) while the CPG continued to use PNVS. After completing our training, we departed the flight strip for a local orientation flight of a nearby landmark, located just a few kilometers north of the flight strip, to help complete the LAO.

As we traveled north at terrain flight altitude, I told the CPG that visibility had been reduced to less than one statute mile and it was time to return to Hood Army Airfield and call it a night. Within 30 seconds of making the call to return to base, the radar altimeter failed. I called on the area advisory frequency and informed everyone in the area that we were returning to base.

Another AH-64D pilot responded he was parallel inbound low level to the same checkpoint. Another aircraft, a CH-47, called and said they were at checkpoint Henry, outbound to the terrain flight area, but they were going to turn back to Hood Army Airfield because of poor visibility. We were at 1,800 feet mean sea level (MSL) (850 feet AGL) on the inbound corridor five kilometers north of checkpoint Henry.

However, the CPG thought he saw the CH-47 converging on our aircraft at our altitude and called out, "Traffic 12 o'clock our altitude, turn left!" I responded, "I don't see it!" I was puzzled because checkpoint Henry was 20 degrees to our left. If there was any traffic, I would need to turn right. Because of the heavy rain, I turned 10 degrees right to see if I could get a better view from a different angle. Again, the CPG called out, "Traffic 12 o'clock our altitude, turn left!" I responded, "Negative, I don't see any traffic." The CPG announced very loudly that we needed either to turn left or break left. I thought he must have seen something so I turned left, banking between 60 and 90 degrees to avoid hitting the other aircraft.

> "**TRAFFIC** 12 o'clock our altitude, **TURN LEFT!**" I responded, "**I DON'T SEE IT!**"

We suddenly entered IIMC inside a cloud as we descended at more than 1,500 feet per minute. Although I experienced spatial disorientation, I was able to level the aircraft's lateral attitude and select Attitude Hold. However, by that time, the tail rotor had produced vertical lift and raised the Apache's tail. I selected my flight page on the multipurpose display and noted a 25-degree nose-low attitude, 56 percent torque applied and 130 knots true airspeed (KTAS). I noted our altitude was 1,100 feet MSL and that the terrain elevation was 950 feet MSL.

I thought we were about to crash! I increased torque to 95 percent and pulled aft on the cyclic, producing a 20-degree nose-up attitude on pullout. We climbed to 2,000 feet MSL. The CPG announced, "Airspeed 08 KTAS, I'll take the controls if you need me to." I felt we were out of immediate danger and replied, "No, I have the controls." After applying forward cyclic and increasing airspeed, I executed the local procedures for IIMC. I called Grey Army Airfield Approach Control, declared an emergency and requested radar vectors for global positioning system approach to runway 15. During our approach, we exited the clouds and had the runway in sight. We requested to break off the approach and returned to Hood Army Airfield, where we landed safely.

Lessons Learned

This is not just another story; it is my story. I was the IP who almost didn't make it home that night. I was responsible for my flight and crew safety. The lesson I learned that night was to depend on myself, my skills and training.

Like my situation, there may come a time when no one is available to help you make the right decision. That's when your memory, skills, training and faith in God will get you home safely. If you're a pilot, I urge you to invest the time to thoroughly study your manuals. One day your life might well depend on your knowing what to do.

Oh, remember the aircraft the CPG thought was coming at us? It was a light from a vehicle on the ground reflecting on the canopy glass—not a real CH-47. But I almost crashed my aircraft trying to miss it!

Fly safe! «

WHEN CREW COORDINATION FAILS

CAPT. RYAN J. SCOTT
Fort Riley, Kan.

This article discusses my experience as an inexperienced aviator, unwilling to speak up when paired with a reckless, yet more experienced, pilot in command (PC). During our flight, we were faced with several life-threatening situations, all of which were initiated by the PC and never challenged by me. Like most accidents, there were several warnings that could've led to the destruction of an Army aircraft and, more importantly, the death of the crew onboard. Though no one was hurt during this flight, my story is an example of how important it is for all crewmembers to identify the hazards and do what they can to mitigate and, if possible, eliminate those hazards before flight.

An aviator who lacks discipline can be more dangerous than any combat mission or emergency procedure. The aviator without discipline often takes unnecessary risks and demonstrates a mix of carelessness and invincibility that compromises not only his life, but the lives of his crew.

Most cockpits are comprised of a pilot and a co-pilot. The PC/co-pilot relationship presents checks and balances, allowing one crewmember to speak up when danger arises in the cockpit. However, this is difficult when you put an experienced aviator, acting as a dangerous PC, with an inexperienced co-pilot.

Dangers Seen Before Flight

As an aviator assigned to a VIP unit in Korea, it was common practice to receive last-minute mission changes, as well as last-minute crew changes. This meant one might be paired with a different co-pilot than originally planned if the situation dictated. However, a thorough crew brief was always conducted when this occurred.

In my case, I was called the same day and asked if I was available to fly. Of course, I was eager to accept the mission but was apprehensive because I had never met the PC, nor did I know anything about this flight. The only information I had was how long I had until takeoff and where the PC would meet me. This was the first red flag for this mission; an inexperienced aviator wasn't given adequate time to plan or prepare for the flight.

> "However, as we **BEGAN** the **FLIGHT**, the PC started going through the **STARTUP PROCEDURES WITHOUT** using the **CHECKLIST**."

The second red flag came in the form of a proper crew briefing. I gathered my equipment and headed to the company area to find the PC and introduce myself to him. He was obviously in a hurry and asked if I would be his co-pilot for the day. When I said I would, he handed me a risk assessment worksheet (RAW). I vigorously worked on the RAW and rushed it to the PC. He glanced over it, apparently satisfied with the work I had done. He made minor corrections and told me to meet him at the aircraft to begin the preflight. He stated we were running late and he would join me at the aircraft. The PC's sense of urgency also added to

the stress, especially since there hadn't yet been a formal crew brief or a mission overview.

I used the checklist and conducted what I thought to be a thorough preflight. The PC arrived several minutes later and grabbed the aircraft logbook and began to walk around the aircraft for a final glance. We strapped in and I immediately felt nervous. I was inexperienced and used to being double-checked and questioned after every preflight. Though the PC was not at fault for assuming I was able to preflight the aircraft, I thought he had assumed too much of my abilities.

Dangers Seen During The Flight

We buckled up and were ready to start the aircraft. Under normal circumstances, the aircraft is started using a checklist. Technical Circular (TC) 1-237, *Aircrew Training Manual, Utility Helicopter, H-60 Series*, states that each crewmember will complete the required checks pertaining to his assigned crew duties per the appropriate operator's manual/checklist. However, as we began the flight, the PC started going through the startup procedures without using the checklist.

I had an immediate feeling that something wasn't right. I remembered the brigade commander hosting a pilots' class in which he expressed his disappointment in aviators not using the checklist. With the understanding that we were in a rush, I didn't question the actions of the PC. This PC had twice as much experience as I did, so who was I to question right from wrong?

We started the aircraft and were en route to pick up our passenger. During the flight, everything went smoothly. We were on time to pick up the passenger, and I began to feel more comfortable with the PC—so much, in fact, that I thought my own insecurities had made me feel uncomfortable. We dropped off the passenger without any issues.

As we were returning to base, the PC asked if I wanted to do a roll-on landing. Generally, I had only done this maneuver with an instructor pilot. Therefore, I told the PC I was OK with performing a roll-on landing. He had the controls and stated he would perform the maneuver. According to TC 1-237, the pilot not on the controls will verify the brakes are released before starting the approach. This is a critical part of the maneuver and is acknowledged in the before landing check in the UH-60; however, we weren't using the checklist. The PC began the maneuver and I, being very inexperienced and unfamiliar with the maneuver, missed the most critical step—to release the parking brake.

We landed with the parking brake still applied, and the aircraft touched down fast and started to skid and shutter. We slid for about three to five seconds before the PC realized the parking brake was still applied. He immediately released the brakes and regained control of the aircraft. It was not until after the flight I realized we were truly lucky the aircraft wasn't damaged and, more importantly, we weren't killed.

Upon completion of the flight, the crew was unusually silent during the postflight. We tied down the aircraft and parted ways. The final mistake of this flight was there was no postflight briefing or after-action review to discuss what we could've done better during the flight. I accepted this as the way things were done in his company and went on my way.

Conclusion

This flight was a clear example of the importance of having a good crew mix in the cockpit. There were warning signs throughout the mission that required the crew to take action immediately. This crew had never flown together before. The PC should've conducted a thorough crew briefing and not assumed the experience level of his co-pilot. Ultimately, when something goes wrong in flight, the PC is responsible. By the same token, I should've inquired the specifics of this mission from the PC.

During the startup procedures, I was just as responsible for following the checklist as the PC. I should've insisted things be done correctly, like slowing down and observing the steps in the checklist. Being short on time doesn't mean safety should be sacrificed.

During flight, I should've spoken to the PC and expressed my concerns. The more relaxed environment could've allowed the PC to acknowledge the comfort level of the crew and act accordingly. The same holds true for the roll-on landing; it was my responsibility as a readiness level-1(RL-1) aviator to be familiar with all RL-1 maneuvers. If I were not comfortable with the maneuvers to be executed during the flight, I should have spoken up.

Although the PC was more experienced than I, there was no reason for me not to speak up when things were going wrong. I assumed too much about the role of the PC and not enough about my role as a crewmember. I could've mitigated much of the risk just as easily as the PC. Though the PC is ultimately responsible for the cockpit, we all are responsible for following the proper procedures. At the least, the crew as a whole should've spoken up and stated there was no way for us to safely accept this mission.

The PC's company commander later flew an aircraft the PC had previously flown. The commander noticed the aircraft had not been shut down properly, which immediately signaled the PC had not used the checklist. This, along with other complaints in the company about this PC being unsafe, eventually led to his removal from the unit. «

Editor's note: Someone always knows. Don't just stand by if that someone is you. Engage! Do the right thing and prevent an accident from occurring.

DID YOU KNOW?

According to the U.S. Army Combat Readiness/Safety Center Web site, there were 94 Class A through C aviation accidents in fiscal 2006. Figure 1 shows a decrease in Class A and C accidents when comparing fiscal 2005 to fiscal 2006. What this chart doesn't depict are the factors associated with these figures. Understanding the war in Iraq has contributed to these numbers, these accidents are accepted as a necessary byproduct of war. However, one cannot ignore the fact that, even in war, high-risk aviators exist. Training Circular 1-210, *Aircrew Training Program Commander's Guide to Individual, Crew, and Collective Training*, states self-discipline is critical to mission accomplishment and for an effective composite risk management program. It's everyone's responsibility to mitigate as much of the risk as possible on their individual level.

Aviation Accidents (Flight) — Number of Accidents

Accident Category	2007	Fiscal 2006	2005	3-Year Average
Flight Class A	27	20	29	25
Flight Class B	10	17	18	15
Flight Class C	63	56	69	63
Total Flight	100	93	116	103

Figure 1. These figures represent only the Class A through C accidents recorded during fiscal 2005 through 2007, not the cause of the accident (i.e., pilot error, mechanical failure or environment). Statistics are current as of Jan. 9, 2008.

It Only Works When You Wear It

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U.S. Army Center for Health Promotion and Preventive Medicine
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Combat-related eye injuries and the quality of life faced by Soldiers blinded on the battlefield have recently become popular topics in national newspapers and on Capitol Hill. Although the number of Soldiers that have lost their eyesight on the battlefields of Iraq and Afghanistan is low, the impact of their injuries is significant. Indeed, life without the use of eyesight is an outcome few of us wish to consider, so it is critical we use protective measures and equipment that minimize the risk of injury.

There are numerous sources of eye injuries both on the battlefield and in garrison: projectiles, improper and unauthorized contact lens use, ultraviolet radiation, thermal energy, chemicals and lasers. The U.S. Army Center for Health Promotion and Preventive Medicine has examined eye injury data for more than 20 years and reports that injuries from projectiles are the leading cause of eye injury in military populations. Further, a 10-year study released by the U.S. Army Combat Readiness/Safety Center in 1998 indicates that more than 90 percent of the Soldiers who sustained an eye injury either wore no eye protection at all or did not wear the appropriate eye protection for the mission. The most common projectile injuries arise from objects traveling at relatively low to moderate speeds. These injuries could be prevented with proper eye protection designed to meet industrial impact standards.

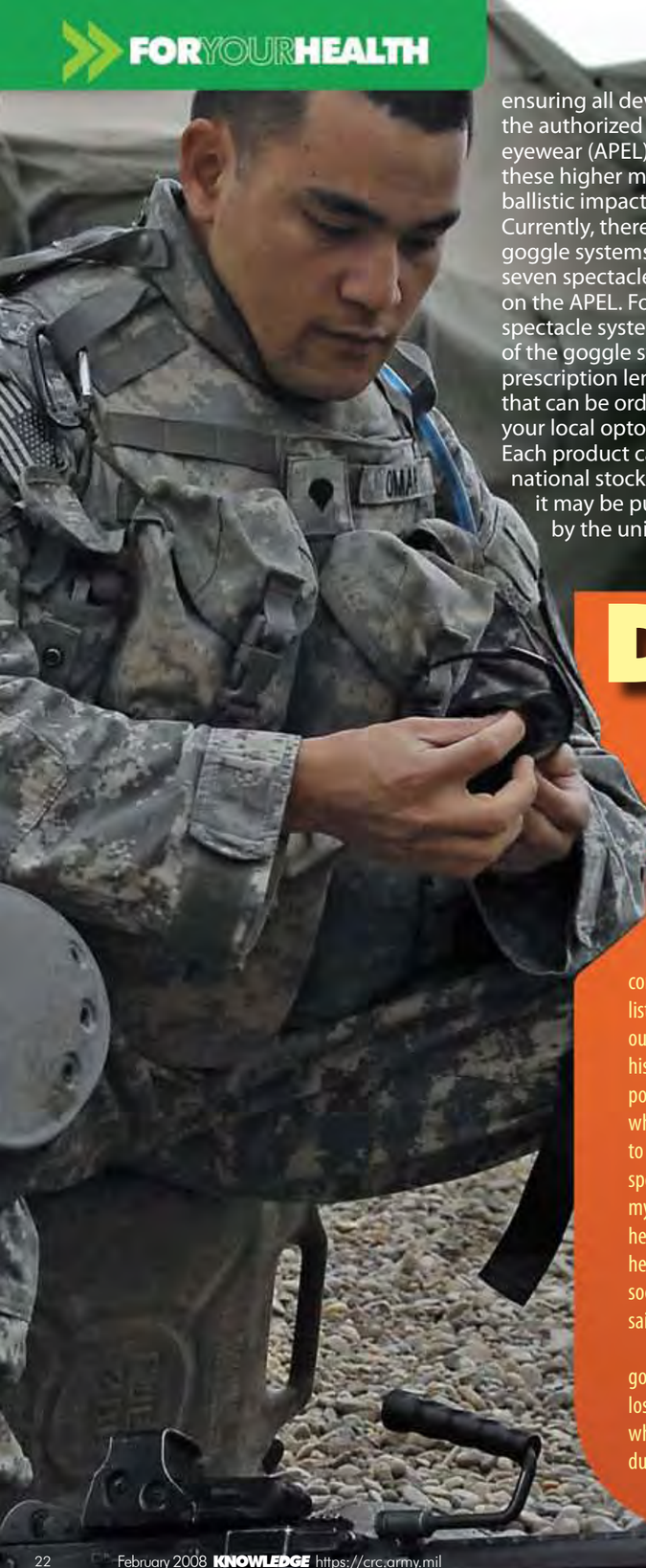
In current combat operations, the most dangerous projectiles arise from explosions. An explosion will release thousands of small fragments of bomb material and surrounding debris that travel at high speeds. Because of their high velocity, these small projectiles can cause significant damage to the soft tissues of an exposed eye. For this reason, Military Combat Eye Protection (MCEP) is required to exceed industrial impact safety standards. Specifically, MCEP spectacles are six times more impact resistant and MCEP goggles are five times more impact resistant than their industrial equivalents.

Program Executive Office-Soldier manages the MCEP program by

DID YOU KNOW?

Soldiers may purchase additional Military Combat Eye Protection at AAFES Post Exchanges and Military Clothing and Sales Stores. Look for this green sticker on the eyewear's package to ensure you are purchasing Authorized Protective Eyewear.

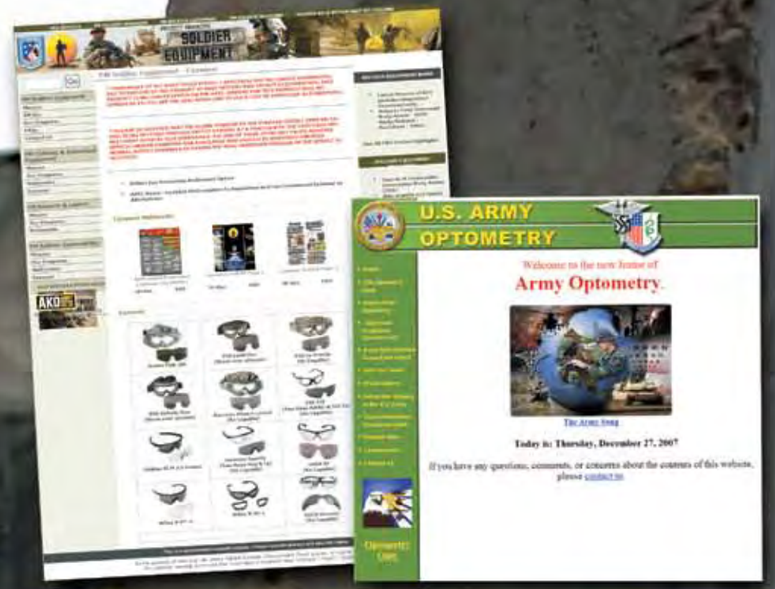
AUTHORIZED PROTECTIVE EYEWEAR LIST (APEL) APPROVED



ensuring all devices on the authorized protective eyewear (APEL) list meet these higher military ballistic impact standards. Currently, there are five goggle systems and seven spectacle systems on the APEL. Four of the spectacle systems and two of the goggle systems use prescription lens carriers that can be ordered through your local optometry clinic. Each product carries its own national stock number so it may be purchased by the unit for training, and each Soldier will receive one spectacle system and one goggle system through the rapid fielding initiative before a deployment. Additionally, individuals may purchase their own MCEP at AAFES Post Exchanges and Military Clothing and Sales Stores. Look for a green APEL sticker on the eyewear's package to ensure you're purchasing authorized protective eyewear. For those who wear glasses, make sure you order the appropriate prescription lens carrier from your local optometry clinic each time you are issued or purchase new protective eyewear.

There are many sizes and styles of MCEP to meet the individual Soldier's needs in fit, form and function. Each of these products provides ample protection against projectile injuries. So, whether you are on the battlefield, weed-whacking your lawn or in the automotive craft center performing an oil change, use your authorized MCEP. Eye protection only works when it is worn and MCEP is the best available. «

To download a copy of the Authorized Protective Eyewear List, please visit https://peosoldier.army.mil/pmseq/eyewear.asp or http://chppm-www.apgea.army.mil/doem/vision/Army/default.asp.



DO YOU SEE WHAT EYE SEE?

CHIEF WARRANT OFFICER 3(P) DAVE MUEHLEISEN
U.S. Army Combat Readiness/Safety Center
Fort Rucker, Ala.

When I was coming up through the ranks as a young mechanic, I learned a valuable lesson from the officer in charge of a direct support maintenance shop. One day, I approached this crafty senior warrant officer to discuss coming to work for him. As he listened to me, he casually pulled out his handkerchief, removed his glasses and unexpectedly popped out his glass eye into a white handkerchief and began to clean it. Needless to say, I was speechless and just stared with my mouth hanging open. After he finished cleaning his eye, he put it back into the empty socket, replaced his glasses and said, "I will see what I can do."

It took a month before I finally got the courage to ask Chief how he lost his eye. He told me it happened when he doing hands-on training during his Warrant Officer Advanced Course. One day, as he left the work area to get a cup of coffee, he lifted his goggles up onto his forehead. At the same time, a sledgehammer that another student was using shattered into pieces. As the warrant officer walked out of the area, a shard from the hammer flew across the room and struck him in the eye, slicing it open. His tragic story forever changed my perspective on eye protection and taught me a very valuable lesson: keep your eyewear on at all times whenever you're in a work area.

Data collected by the Program Manager Soldier indicates about 10 percent of all Soldier injuries involve the eye. Soldiers and civilians working in maintenance areas should be using some form of eye protection whenever they are in their shops and respective work areas.

In our motor parks and maintenance bays, eye injuries predominantly occur during battery maintenance, welding or grinding operations, or from metal fragments created by activities such as hammering or using bolt cutters. In more than one-third of the reported eye injuries, the individual was either not wearing the required protective eyewear or was wearing it improperly.

From fiscal 2004 through 2008, there were 47 reported cases in which Soldiers conducting maintenance-related tasks lost sight in one or both eyes, or were temporarily blinded and lost time from work because of their injuries. Hazards from dust and debris, flying objects or particles that can strike you in the face or eyes can be easily defended by using the proper safety glasses and goggles.

Various activities require different types of glasses or goggles. So what is the right protection and when should certain types be worn? Well, for starters, safety goggles are an appropriate substitute for safety glasses and can provide better overall protection. However, safety glasses are not an appropriate substitute for safety goggles. Here's why: safety glasses are effective for deflecting a direct impact from flying objects such as nails, metal shards, etc. Goggles give added protection against dust and fine particles, splashing of liquids and high wind/gusting conditions.

No matter how routine the task or how low the risk, wearing the right eye protection for the job is the best defense against an accidental eye injury or loss. Whether in the motor pool or on a combat logistics patrol, protecting your eyes is as easy as it is smart. «

Maintenance-related injuries

Injury Type	Fiscal 2004	2005	2006	2007
Fingers	19	18	31	15
Eyes	9	15	20	3
Hands	11	13	11	5
Head	8	11	9	7
Arms	5	4	15	1
Other	45	52	43	31
Total	97	113	129	62

As of Sept. 30, 2007

DID YOU KNOW?

The main difference between safety glasses and regular glasses is their resistance to impact. The American National Standards Institute, which sets standards for safety glasses, requires them to withstand the impact of a quarter-inch steel ball traveling 150 feet per second. You can't depend on prescription glasses for that kind of protection. Frames stamped with the imprint "Z87" meet stringent standards for strength and heat resistance. The Program Manager Soldier has an approved list of eye protection for Soldiers to use.

FYI

Did you know that even if you use a face shield in operations such as grinding, you also still need to wear safety glasses under the shield?

Don't Fall in Love With the Plan

U.S. ARMY COMBAT READINESS/SAFETY CENTER
Fort Rucker, Ala.

The mission was a multiship, long-range navigation flight. The lead crew planned the flight as a day-out, night-vision-goggle-return, to practice assault mission tasks and flying in the national airspace system. The flight lead pilot in command (PC) was enthusiastic about the opportunity to depart the home station restricted area and navigate with a time on target. This was his second flight as a PC in the aircraft and his first as flight lead.

The air mission commander (AMC) and unit trainer for tactics in Chalk 2 was one of the more experienced pilots in the company with more than 1,153 hours, of which 800 were combat hours in Iraq. He had 36 hours of combined hood and weather time, but his last three instrument annual proficiency and readiness tests had been completed in the synthetic flight training simulator. The pilot in Chalk 2 was a newly progressed Readiness Level-1 aviator with more than 515 hours, of which 225 were combat hours. He had flown 26 hours of simulated weather using the hood, but he had never actually flown in instrument meterological conditions (IMC) conditions in a rotary-wing aircraft. The unit had a high operations tempo, trying to meet external taskings while simultaneously transitioning to the UH-60M aircraft. Most of the chief warrant officers 3 and 4 were in the UH-60M transition or performing external mission taskings.

The lead crew requested a DD175-1 weather brief from the local forecaster, indicating a direct route of flight between two airfields; however, their planned route actually went farther south over hilly terrain and was not articulated to the weather briefer. The worst-case weather for the flight was indicated in the en route portion of the DD175-1 and listed the lowest ceiling as 2,000 feet above ground level (AGL), which would have been accurate for a straight-line route between airfields. The crews' focus was on the destination terminal area forecast, which was for 5,000-foot ceilings and visibility at five miles. The flight completed the briefing and the risk assessment worksheet, which assessed the mission as a low risk. The company instructor pilot (IP), who recently graduated from the IP Course, briefed the AMC and signed the risk assessment worksheet. The company commander, the pilot (PI) of Chalk 2, signed as the final mission approval for the flight. The crews completed preflight and began aircraft run up. During run up, Chalk 3 noticed their very high frequency omnidirectional receiver was nonoperational and notified the AMC.

The flight took off on time. However, on arrival at the first checkpoint, Chalk 3 reported his global positioning system (GPS) was also nonoperational. Chalk 3 was now without a VHF omnidirectional radio and a GPS. The flight proceeded normally with lead making his checkpoints on time. The flight did a simulated air assault troop insertion at an airport along the route, arriving within two seconds of their planned time.

The flight then departed to the south and the terrain began to rapidly rise in elevation. As the flight approached the mountainous terrain, the weather deteriorated. Cloud cover obscured the hilltops, visibility was reduced to less than four miles, and fog was noted in some of the low-lying areas due to a rain that had recently fallen as a cold front pushed through. The flight reduced altitude to about 300 to 500 feet AGL. The PC of Chalk 2 reported to the flight that an Airfield Weather Observation System station was reporting a ceiling of 2,200 feet. The field elevation at the airport in the valley behind them was 979 feet mean sea level (MSL). The flight continued on time to the next air control point in a valley.

The enlisted flight instructor in the lead aircraft asked for the flight formation to change from staggered right to staggered left so the crew chief he was progressing could practice performing Training Circular 1-237, *Task 1026: Maintain Airspace Surveillance*. Chalk 2 said they would change the formation as soon as their crew chief changed seats so he could be on the observed side of the aircraft. The formation changed from staggered right to

> "… their **PLANNED ROUTE** actually **WENT FARTHER** south over hilly terrain and was **NOT ARTICULATED** to the **WEATHER BRIEFER**."

staggered left, which left an untrained, unqualified trainee in the seat facing the staggered-left formation.

After crossing the aircraft control point (ACP) in the valley, the weather deteriorated considerably. Wispy clouds scudded across the sky at flight level while low clouds and haze obscured the hilltops. Chalk 3 noticed the change in conditions and separated from the formation by a distance of eight to 10 rotor disks in case lead went into IIMC. Chalk 2 noticed a set of power lines on the ridgeline to the right of the formation and informed the flight by radio. Lead acknowledged and continued up a draw between the hilltops at 110 knots ground speed. The lead aircraft altered course to the left to avoid the wires and high ground on the right side of the flight path. When the lead aircraft reached the top of the draw, they went IIMC. They then announced the heading and altitude they were climbing to, which was 4,000 feet MSL.

Chalk 2, still in a staggered-left formation three rotor disks away and slightly lower than the lead aircraft, announced they were also IIMC. The Chalk 2 PI asked lead what heading and altitude they were climbing to. Lead answered 4,000 feet, with a heading of 124 degrees. The lead aircraft initiated a climb, still squawking 1,200 on the transponder, and attempted to contact destination approach control. Chalk 3 saw Chalk 2 go IIMC and initiated a climbing left turn. Chalk 3 executed a hard left 180-degree turn, remained in visual meteorological conditions, and proceeded back down the draw to the vicinity of the previous ACP. Chalk 3 announced his intention to remain visual meteorological conditions and return to their last known position. Lead contacted Chalk 3 to see if they had contact with Chalk 2. Both lead and Chalk 3 heard a short, garbled, unintelligible transmission. Lead announced their intention to recover IMC to the destination airfield. Shortly afterward, Chalk 2, in a steep nose-down attitude and left bank, crashed through a large set of power lines into the ground at cruise airspeed, fatally injuring three Soldiers.

Summary

Weather conditions were a key factor in this accident. An hour earlier, a frontal system passed through the area and dumped a large volume of rain in the rapidly rising terrain. Precipitation fog may form if rain passes through a layer of cooler air or if falling precipitation cools the ambient air to its dew point. Fog of this nature frequently occurs during the passage of warm fronts and cold fronts, when the surface air is markedly different in temperature from the upper air. This effect is further enhanced by local topography. If rain-cooled air (or air associated with a cold downdraft) is unable to spread out horizontally, the ambient temperature is more likely to cool to, and remain close to, the local dew point throughout the depth of the column. So, while widespread fog may not be reported in a nearby official observation, it is entirely possible for localized thick fog to persist in low-lying areas following rain showers. Sun angle, coupled with cloud cover or fog and with the complex terrain, could have also exacerbated the situation.«

LESSONS LEARNED

- Give the weather forecaster the most accurate route of flight. Doing so will give you a better quality briefing. Read Appendix C of Field Manual 3-04.240, *Instrument Flight for Army Aviators*, to better understand the blocks on the DD 175-1.
- Practice inadvertent instrument meterological conditions (IIMC) breakup procedures during multiship training events. This will help develop good cockpit organizational skills and procedures, as well as provide training for air traffic control in recovering formations during weather events. Ensure IIMC plans address all segments of the route and identify the proper Air Route Traffic Control Center you need to contact if you go IIMC. When possible, ensure instrument annual proficiency and readiness tests are taken in the aircraft to ensure crews are familiar with the sounds and illusions experienced in the actual aircraft.
- Put experienced aviators in the critical positions during the flight to demonstrate what "right looks like" versus the view /duties from right seat to junior aviators. Develop flight leads from experienced pilots in command (PC). Develop PCs within the formation and move them to positions of increased responsibility as they mature.
- Don't fall in love with the plan. Plans are a good starting point; however, pilots must be aware of changing conditions and modify their mission plans as the situation changes. The crew in flight lead was focused on making times at the aircraft control points. They never adjusted for the deteriorating weather. Going 110 knots into lousy weather is never a good plan. Never outfly your weather.

NOT THIS TIME!

CHIEF WARRANT OFFICER 3 MARCELO ASSUMPCAO
U.S. Army Combat Readiness/Safety Center
Fort Rucker, Ala.

Rollover claims two Soldiers' lives. How many times have we seen a preliminary loss report with a headline like the one above? For me, it's all too often. Fortunately, in the following accident, engaged Leaders took the necessary steps to prevent their Soldiers from becoming statistics.

The Soldiers mounted their M936 wrecker, which was equipped with add-on armor, for a 15-hour convoy to recover a disabled vehicle in Afghanistan. Before the mission, the wrecker crew rehearsed rollover drills and prepared to move. After traveling 20 kilometers from their forward operating base, a narrow mountain road gave way beneath the rear wheels of the wrecker and the vehicle rolled over twice, coming to rest on its roof.

What followed? Well, there wasn't a Class A accident for the U.S. Army Combat Readiness/Safety Center or a local safety board to investigate. More importantly, the command didn't have to send a letter to Family members telling them their loved one was killed or seriously injured. Instead, Families can look forward to a reunion with their loved ones as opposed to a funeral.

Although the M936 was destroyed, the Soldiers emerged from the vehicle without a scratch because they wore their seat belts and executed proper emergency procedures. Engaged Leaders and Soldiers made a difference in this accident. Here are some things Soldiers can do to mitigate the risk of being killed or injured in a vehicle accident:

- Perform route recons to ensure roadways are solid, particularly after rain
- Ensure Soldiers do not operate vehicles too close to the shoulder of the road
- Use more experienced drivers during limited visibility or when operating on dirt roads along waterways
- Rehearse rollover drills; the HMMWV Egress Assistance Trainer is highly recommended
- Ensure Soldiers wear their seat belts to prevent injury and maintain situational awareness
- Emphasize crew coordination, particularly in identifying and reacting to hazards

The Soldiers involved in this accident took the time to properly prepare for their mission. The result? They all survived an accident that easily could have taken their lives. Keep your Soldiers informed and ready at all times. Army Safe is Army Strong! «

FYI

If your vehicle does not have established tactics, techniques and procedures for rollovers or emergency egress, use Graphic Training Aid 55-03-030, *HMMWV Uparmored Rollover Emergency Procedures Performance Measures*, as a base. These procedures apply to most wheel vehicles. You can find this GTA on the U.S. Army Combat Readiness/Safety Center Web site at https://crc.army.mil/drivertrainingtoolbox.

identify the risks or the remains?

BOB VAN ELSBERG
U.S. Army Combat Readiness/Safety Center
Fort Rucker, Ala.

Every so often you see something so incredibly dangerous you just have to stand there dumbfounded. What's even more astounding is watching other people completely oblivious to the danger repeatedly exposing themselves to the hazard. I recently had one of those moments at a gym.

I walked into the men's locker room to see water splashed all over the tile floor. In places, the water stood in puddles. I hate suiting up while standing on a wet floor, so I started rounding a corner on my left to check out another row of lockers—maybe one where the floor wasn't wet. I was just about to take a step when something caught my attention. On the floor in front of me was an electric fan roaring at full speed. What really got my attention was that the fan—and about 3 feet of its power cord—was sitting in a puddle of water. I immediately caught myself to avoid stepping forward. A young Soldier, barefoot and headed for the men's showers, was just about to walk past me. I caught him and pointed out the danger on the floor. It was clear he hadn't noticed it, and it shocked him (if you'll pardon the pun) to realize the danger he'd nearly stepped into. With him alerting others to the danger and staying clear of the wet floor, I carefully reached down, turned off the fan and then unplugged it.

A couple of questions immediately ran through my mind. First, who would set an energized electrical fan in a puddle of water where people were walking? Second, why were people walking through this puddle of water, totally oblivious to an obvious danger?

It occurred to me that most people don't think a lot about what they're doing if they're in a familiar environment. Often, they're so focused on something else that they don't catch the clues around them. Without meaning to, they skip the first step of composite risk management—identifying the hazards.

What are the common things people say after an accident? "I didn't know that would happen." "I didn't mean to do it." "It came as a surprise." The list of excuses is long. But, in most cases, the accident could have been avoided if the people involved maintained situational awareness—basically, kept their head in the game.

It's too easy not to do that. It's too easy to have your mind focused somewhere else while the silent alarms go off around you. Especially in those routine things where you don't expect things to go wrong, it's easy to walk blindly into danger. It sounds odd to say it this way, but you're basically NOT looking for trouble.

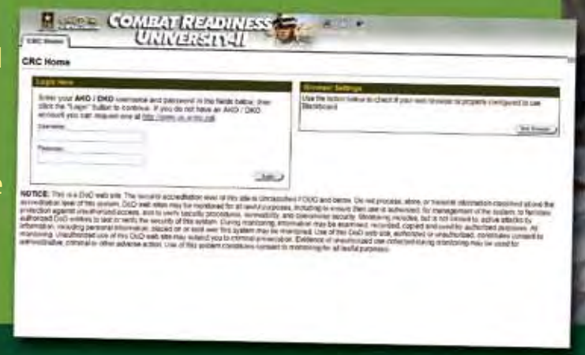
Nobody got hurt at the gym—which was fortunate. However, luck is a lousy fall-back position for safety. Typically, luck works just long enough to lull us into a false sense of security and then runs out. And when it does, we often get taken out of the game—permanently.

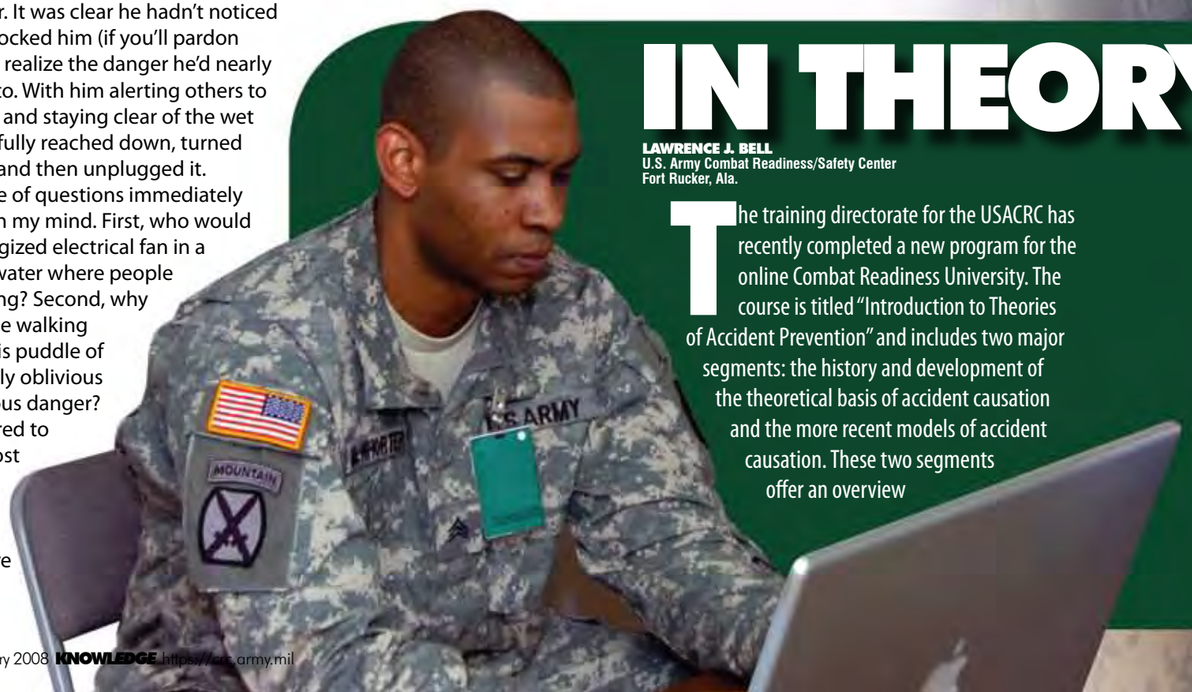
So we're back to the subject of risk identification. Truth is, it's always somewhere in the mix. The way I see it, you get two shots at identification—one before a potential accident and the other if things don't go so well. Personally, I like the first option. I'd prefer spending time identifying my risks than someone else spending time identifying my remains.

How about you? «

LEARNING BLACKBOARD

The Combat Readiness University (CRU) is transitioning to the Army Training and Support Center Blackboard Content Learning Management System. When Blackboard goes online, CRU will change its name to Combat Readiness University II (CRU II). The majority of Department of Defense schools, as well as many colleges and universities throughout the world, use Blackboard. This change will make CRU II user-friendly, standardize it with other Army online training systems and enable users to develop custom learning environments. However, for safety and training managers, CRU II will not initially support database searches to determine who in your organization has completed training. That data will have to be tracked at home station. Courses completed on the CRU will not be transferred to CRU II. Therefore, the CRU will continue to allow users to print their certificates and safety managers to search the database for user course status. To check out CRU II online, go to https://crc.learn.army.mil. «





IN THEORY...

LAWRENCE J. BELL
U.S. Army Combat Readiness/Safety Center
Fort Rucker, Ala.

The training directorate for the USACRC has recently completed a new program for the online Combat Readiness University. The course is titled "Introduction to Theories of Accident Prevention" and includes two major segments: the history and development of the theoretical basis of accident causation and the more recent models of accident causation. These two segments offer an overview of accident causation and provide accident investigators with concepts to help them understand the conditions leading to accidents. In the near future, the USACRC will have a third segment that explains in greater detail how safety professionals can use causation theory in their organizational mishap prevention and intervention programs. This course provides tools geared to each student's style of learning, whether that is auditory, visual or kinesthetic and tactile. It also makes unique provisions for varying levels of knowledge concerning accident causation theory called "knowledge gates." Each time a student begins an intermediate segment, they will have an opportunity to take a pretest on that information. If they do well, they can choose whether to continue with that portion of the course. If they do poorly, their only option is to proceed through the "gate" and take that portion of the training.

Because of the course's complexity, it contains large digital files and will require students to have either high-speed or broadband Internet access. Where that is not available, the USACRC will provide students with a compact disc version of the course to study. They can then take the end-of-course examination online with only dial-up Internet access.

Civilian Career Program 12 intern students and Aviation Safety Officer Course students are the principal audiences for this new course. These students will be required to successfully complete the course prior to their in-residence training at Fort Rucker. However, the course is not just appropriate for these new safety professionals, it can also be a valuable tool for experienced safety professionals, Army leaders and unit commanders, resource managers, Soldiers and civilians.

The course will be available online at https://safetylms.army.mil/. For more information on the course, contact the USACRC at (334) 255-0229 or DSN 558-0229. «

AVIATION

AH-6

CLASS C M Model

- The aircraft experienced an overtorque (126.3 percent) condition during flight.

CLASS C D Model

- The aircraft's No. 2 engine power turbine speed failed to the high side while at a 5-foot hover. Main rotor speed went to 120 percent for five seconds. The main and tail rotors required replacement.

- A bird struck the aircraft at 1,000 feet above ground level, causing damage to the night vision systems and aircraft interface assembly.

CH-47

CLASS C

- While loading passengers for an air assault mission, the Soldier's M-4 got stuck in the loading ramp, resulting in the refill module reservoir detaching from its mount.

DURING PASSENGER BRIEFS, DO YOU ENSURE SOLDIERS UNDERSTAND TO KEEP THEIR WEAPON UNDER CONTROL WITH THE MUZZLE DOWN?

- The ramp tongue separated from the aircraft during flight.

MH-47

CLASS C E Model

- The aircraft was taxiing to the runway when the right-rear landing gear collapsed, causing significant damage to both rear landing gears.

MH-60

CLASS A K Model

- The Soldier exited the aircraft early during a night landing in brownout conditions at approximately 30 feet above ground level. The fall fatally injured the Soldier.

OH-58

CLASS C D(R) Model

- During run-up, the aircraft exceeded engine limitations.

UH-60

CLASS A A Model

- The aircraft crashed during a training flight, resulting in two Soldier and four Airmen fatalities. The accident is currently under investigation by the USACRC.

C-12

CLASS B U Model

- During landing, the aircraft's propeller contacted the runway, resulting in loss of engine No. 2. Damages include: 3 feet of the wing outboard section bent up 30 degrees, left wing wrinkled and No. 1 engine inboard and outboard landing gear covers were bent.

UAS

MQ-5B

CLASS A

- Immediately after takeoff, the aft section of the Hunter broke off, causing the UAV to fall 500 feet to the ground.

GROUND

AMV

CLASS A

- A Soldier was killed when she lost control of the ambulance she was driving while negotiating an access ramp and struck a light pole.

HAVE YOUR EMERGENCY VEHICLE OPERATORS COMPLETED AN EMERGENCY VEHICLE TRAINING PROGRAM AND ARE THEY RECEIVING THE REQUIRED SUSTAINMENT TRAINING?

CLASS B

- A Soldier suffered a permanent partial disability injury when he was pulled under the front tire of an M1114. The Soldier had been standing on the front hood/fender of the vehicle when the accident occurred.

- A Soldier suffered a permanent partial disability injury when the M984A1 he was riding in overturned when the driver swerved to avoid a pothole. A fire ensued inside the vehicle, and the Soldier received burns to 10 percent of his body.

HAVE YOU SEEN THE DRIVER'S TRAINING TOOLBOX ON THE U.S. ARMY COMBAT READINESS/SAFETY CENTER'S WEB SITE?

- A Soldier received a permanent partial disability injury to his arm when the 5-ton cargo truck he was riding in left the road and overturned. The driver of the truck suffered a skull fracture and is expected to fully recover.

- A Heavy Equipment Transport vehicle was damaged when it overturned after experiencing brake failure. The vehicle was traveling as part of a Marine convoy and transporting an M1, which was also damaged. The driver of the vehicle was uninjured.

ARMY AIRCRAFT LOSSES

Fiscal 2002 to Present

thru January 10, 2008

Hostile/ Non-hostile

AH-64A/D	12/50
U/MH-60A/L	8/27
C/MH-47	7/16
OH-58D	11/25
TOTAL	38/118

ARMY GROUND LOSSES

Fiscal 2008

through December 2007

Class A/Fatalities

AMV	6/6
ACV	1/0
PERSONNEL INJURY includes weapons handling accidents	8/6
FIRE/ EXPLOSION	3/3
PROPERTY DAMAGE	2/0
TOTAL	20/15

Personnel Injury

CLASS A

A Soldier was killed and three others were injured in an explosion of unknown origin. The Soldiers were awaiting exfiltration via a CH-47 when the explosion occurred as the aircraft landed.

A Soldier was killed when a BLU-97 Combined Effects Bomb he was handling detonated. Another Soldier was injured in the blast. (See the related story "UXO: A Threat to Soldier Safety.")

DO YOU KNOW THE THREE R'S OF EXPLOSIVES SAFETY?

A Soldier died while participating in physical training. The Soldier was running when he fell and hit his face on the pavement. Medics revived him twice, but efforts to stabilize him at the medical center failed and the Soldier was pronounced dead.

A Soldier suffered fatal injuries when he fell 8 to 10 feet from a front-end loader. The Soldier was attempting to climb from the loader onto a roof to provide realistic training.

A Soldier suffered a permanent total disability injury after participating in a PT test. The Soldier experienced deep cramps after the test and was diagnosed as having a spinal stroke. He is currently paralyzed from the waist down.

CLASS B

A Soldier lost the tip of his left ring finger when the landing leg on a fuel pump buckled and landed on his hand.

DRIVING

POV

CLASS A

A Soldier was speeding when he lost control of his POV, struck a guardrail, went airborne and then hit some trees before his vehicle came to rest on its side. The Soldier was fatally injured.

A Soldier was driving his POV at high speed around a sharp corner when he lost control and crashed into a telephone pole. The Soldier was not wearing his seat belt.

A Soldier was riding as a passenger in a pickup when the driver missed a curve and the vehicle overturned. The Soldier was not wearing his seat belt and was thrown from the truck and killed. Two other passengers who weren't wearing their seat belts were also thrown from the vehicle and suffered serious injuries.

HAVE YOU TOLD YOUR SOLDIERS THAT WEARING SEAT BELTS INCREASES THEIR CHANCES OF SURVIVING A ROLLOVER CRASH IN A PICKUP BY NEARLY 80 PERCENT?

A Soldier was speeding through an intersection in his sport utility vehicle when he lost control and struck a static tank display. The Soldier was pronounced dead upon arrival at the on-post medical facility.

POV DRIVING LOSSES
Fiscal 2008
through December 2007 Class A accidents/Soldiers killed

CARS	11/11
SUV/JEEPS	4/5
TRUCKS	3/3
MOTORCYCLES	10/10
OTHER*	2/2

*Includes: vans and ATVs

31 TOTAL DEATHS
FY07: 28 3 year average: 29

UXO: A THREAT TO SOLDIER SAFETY

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

POM

CLASS A

Soldier was operating his motorcycle at a high rate of speed when he lost control, went off the road and struck a light pole. The Soldier was pronounced dead at a local medical center. The Soldier, who had completed Motorcycle Safety Foundation training, chose not to wear his helmet. The helmet was found attached to his motorcycle.

WHO KNEW HE WAS A HIGH-RISK SOLDIER? COULD A FRIEND HAVE DONE SOMETHING TO PREVENT THIS CRASH?

A Soldier was operating his motorcycle when he lost control, struck a tree and suffered fatal injuries. The Soldier was wearing his helmet at the time of the accident.

A recent unexploded ordnance (UXO) accident in Iraq that claimed the life of a Soldier is serving as a deadly reminder to be extra cautious when handling munitions.

The Soldier was digging in front of his quarters when he discovered a yellow cylinder resembling a caulk tube. Once the Soldier brought the tube out of the ground, he banged it against a wall to knock off the dirt and determine what he was holding. The device, which turned out to be a BLU-97/B Combined Effects Bomb, exploded, killing the Soldier and wounding another.

The BLU-97 submunitions are yellow, soda-can-sized bomblets that are dispensed in large numbers to attack "soft" area targets. The bomblet case is made of scored steel designed to break into about 300 preformed ingrain fragments for defeating light armor and personnel.

The body of the BLU-97 is cylindrical in shape, about 20 centimeters long and has a 6 centimeter diameter. However, military and foreign munitions can come in a variety of types, sizes and shapes and may not be easy to recognize. They include, but are not limited to, small-arms ammunition, projectiles, cartridges, bombs, rockets, pyrotechnics, grenades, blasting caps, fuzes, simulators and raw explosives.

According to the Defense Environmental Network and Information Exchange, when encountering UXO, always follow the 3Rs of explosives safety:

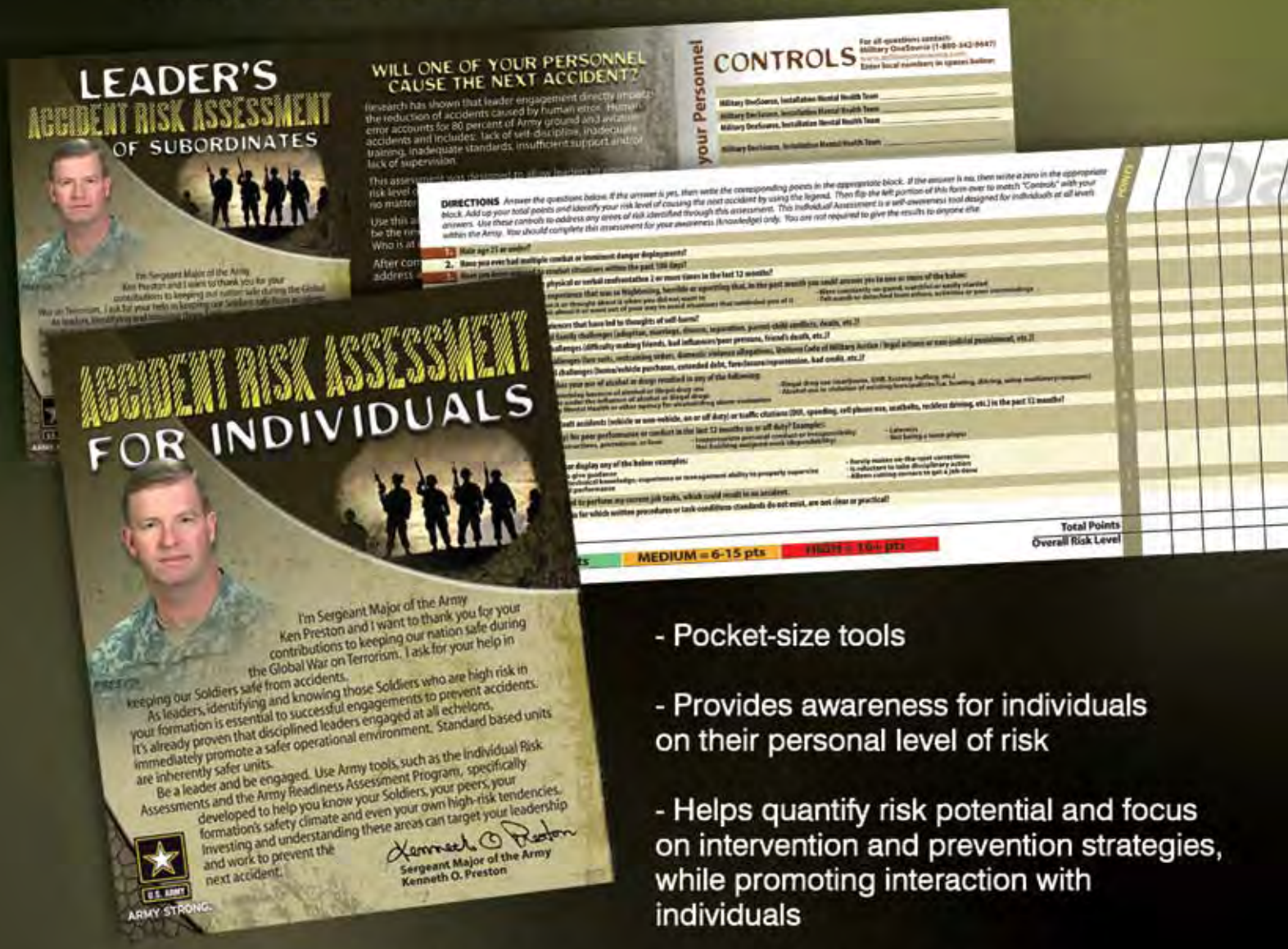
- **Recognize the munition.**
- **Retreat from the munition. Do not touch or disturb it, but move carefully away, walking out the same path the area was entered.**
- **Report the munition and its location.**

Since fiscal 2005, there have been three Class A Army accidents resulting from Soldiers handling UXO. These accidents caused the deaths of three Soldiers. By following the 3Rs of explosives safety, Soldiers can help prevent future fatalities. In combat areas or on training ranges, it's best to remember, "If you did not drop it, do not pick it up!"

For more information on UXO safety, visit the Defense Environmental Network and Information Exchange's UXO Safety Education Program Web site at www.denix.osd.mil/uxosafety.

NEW TOOLS FROM THE U.S. ARMY COMBAT READINESS/SAFETY CENTER

ACCIDENT RISK ASSESSMENT
FOR INDIVIDUALS and LEADERS



- Pocket-size tools

- Provides awareness for individuals on their personal level of risk

- Helps quantify risk potential and focus on intervention and prevention strategies, while promoting interaction with individuals

Complete the assessment to determine who might be at risk and what you can do to reduce the risk. It might change your life; it might save your life.

https://crc.army.mil

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https://crc.army.mil

ARMY SAFE IS ARMY STRONG

Authorized Protective Eyewear List

Eye See

Eye injuries account for over 10 percent of combat-related injuries. The most common causes are explosives (IED, RPG and shrapnel) or environment (foreign body). Eye injuries have increased in every conflict and continue that trend.

For more information on the authorized protective eyewear list, visit https://peosoldier.army.mil/pmseq/eyewear.asp

ESS Low Profile NVG
(Rx capability)
(4240-01-540-5585)

ESS Land Ops
(may be worn over glasses)
(4240-01-504-0052)

UVEX XC
(Rx capability)
(4240-01-516-5361)

Arena Flakjak
(4240-01-548-7366)

ESS Vehicle Ops
(may be worn over glasses)
(4240-01-525-5101)

Oakley SI Ballistic
M Frame 2.0
(4240-01-525-3095)

Revision Sawfly
(Rx capability, Dual Size)
(4240-01-527-4051 reg)
(4240-01-527-4018 lrg)

Revision Desert Locust
(Rx capability)
(4240-01-547-6218)

ESS ICE
(Rx capability, Dual Size)
(4240-01-525-5085 ICE 2)
(4240-01-537-6143 ICE NARO)

UVEX Genesis
(Rx capability)
(4240-01-552-4131)

Wiley X SG1
(4240-01-504-0994)

Wiley X PT-1
(4240-01-510-7853)

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family engagement kit

Post-Deployment Family engagement kit

Get the tools empowering Family members to take an active role in implementing safety practices to protect their loved ones returning home from deployments. Log on today and get your Family Engagement Kit.

https://crc.army.mil/familyengagement

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ARMY SAFE IS ARMY STRONG

DRIVER'S TRAINING: PRACTICAL SKILLS, TACTICAL APPLICATIONS p. 22

KNOWLEDGE

VOL 2 MARCH 2006

OFFICIAL SAFETY MAGAZINE OF THE U.S. ARMY

WEATHERING THE CHANGE p. 5

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KNOWLEDGE

OFFICIAL SAFETY MAGAZINE OF THE U.S. ARMY

contents

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Mission statement: USACRC supports our Army at war by collecting, storing, analyzing, and disseminating actionable information to assist Leaders, Soldiers, Families, and Civilians in preserving/protecting our Army's combat resources.

We welcome your feedback. Please e-mail comments to **knowledge@crc.army.mil**.

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WHAT ABO YOUR "3 TO

Our Army recruits and retains many generations of high-quality men and women. These Soldiers are instilled with integrity, personal courage and a commitment to our great Nation that is more than admirable – it is the foundation of our volunteer force protecting freedom.

When I ponder the million-man force that is the Army today, I am convinced that 99 percent of Soldiers ultimately want to do the right thing. Furthermore, I'm convinced that Soldiers do not wake up one day and ask themselves, "What can I mess up today?" With that said, how do we convince Soldiers to cross the fine line of wanting to do right and actually doing so?

Our Soldiers deploy throughout the world and make safety decisions during missions and on the battlefield that save lives. In fact, statistics confirm that fewer accidents occur in deployed locations versus home stations and off duty. What does this tell us?

It tells us that the same Soldiers who are making the right decisions to prevent accidents while deployed are then coming home and making decisions that lead to accidents. The high safety awareness established while deployed is not returning with our Soldiers.

I believe we can effectively categorize the majority of accidents with one or more of the following contributing factors. You have heard them before and there is absolutely nothing unique in these. However, about 90 percent of every accident investigation report we execute, review and receive includes

> "By **KNOWING** your **"3 TO 6"** Soldiers, you'll know **WHERE** to **AFFECT POSITIVE** change and which **TOOLS** are most **EFFECTIVE** with your Soldiers."

one of the following contributing factors:

- **Complacency**
- **Overconfidence**
- **Untrained**
- **Indiscipline**

Is there magic in eliminating these contributing factors? Might there be an elimination of accidents through the elimination of these four factors? Perhaps not a 100-percent reduction but certainly a significant step in the right direction.

As Leaders, I'm certain you have undoubtedly asked yourselves these questions numerous times.

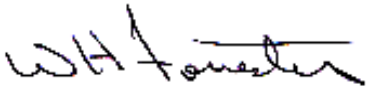
1. How do I, as a Leader, set the conditions for success in my formations?
2. How do I allow Soldiers to operate outside the immediate vicinity of my reach and do so successfully?

There is not one solution set or a single answer "how to," but I contend there exists numerous tools that afford Soldiers situational awareness. For starters, we know accountable Leaders, engaged at the proper echelon with every Comrade, immediately save lives. They promote change in our Soldier's culture, instinct and intuition for our future. But where is that engagement when those Leaders are not physically present?

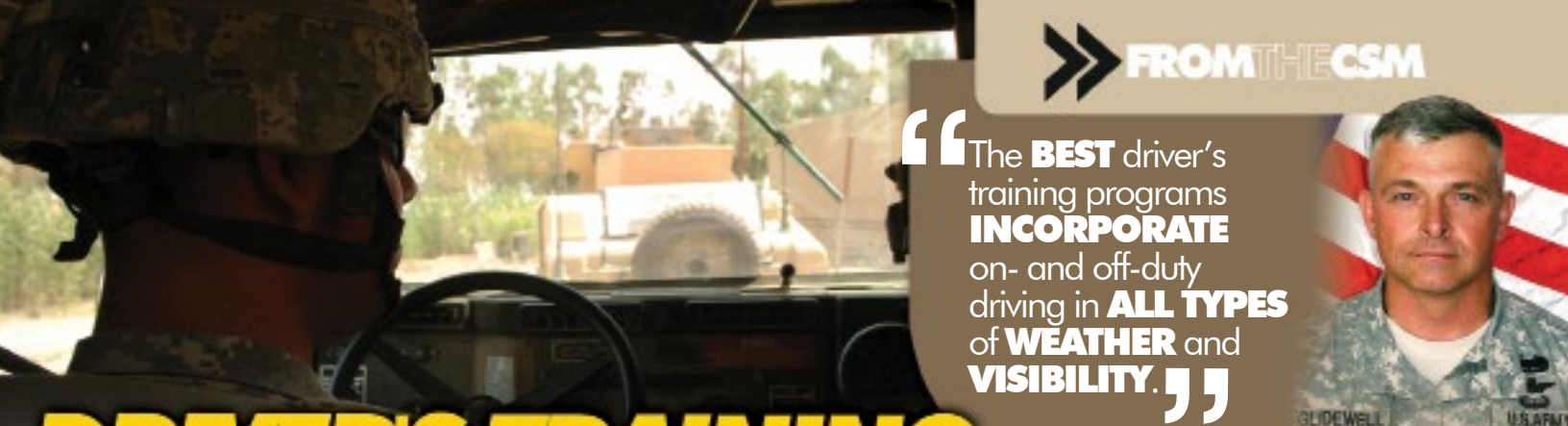
The Family? Seems the one person who provides input to Soldiers up until and way past their early years in life resides in the Family. Soldiers listen to these Family members when it comes to decisions, behaviors and actions. Some say besides the spouse, there is no one who exhibits influence on a Soldier's life more consistently than the Soldier's mother. Is there value in engaging and educating the extended Families to cover the gaps created by leadership absences during times such as block leave, NCO education and changes of command?

So how do we successfully engage the entire formation in various environments? Seems the answer is simple: "3 to 6." The "3 to 6" principle is a viable and uncomplicated solution that (USACRC) Command Sgt. Maj. Tod Glidewell and I endorse. This unspoken principle proposes every Leader is best effective in the leadership role when they are responsible for three to six Soldiers. How well do you know your "3 to 6?" Check the December 2007 issue of *Knowledge* at https://crc.army.mil/Knowledge, "Making a Difference with Engaged Leaders" to see how your leadership measures up. In the article, Command Sgt. Maj. Glidewell relates a story a wise sage passed along to him, that every Leader need not focus past the three to six Soldiers within his/her immediate sphere of concern. That a Leader at squad level has three to six within that squad; a platoon sergeant has three to six in that platoon; and a company first sergeant has three to six in that company. By knowing your "3 to 6" Soldiers, you'll know where to affect positive change and which tools are most effective with your Soldiers. Our Army operates on this concept and it works.

Needless to say, you as Leaders have difficult tasks to perform and the challenges you face are daunting, but there are tools that benefit you and your formations. Engage and achieve success. Engage and get to know your "3 to 6." Thanks and remember, an Army Safe is Army Strong!!



William H. Forrester
Brigadier General, USA
Commanding



> "The **BEST** driver's training programs **INCORPORATE** on- and off-duty driving in **ALL TYPES** of **WEATHER** and **VISIBILITY**."

DRIVER'S TRAINING ENABLES SOLDIERS TO MAKE SMART DECISIONS

During the course of my career, driving in our Army has often been viewed as a routine task. Nothing could be further from the truth, especially today, as we fall in on and operate equipment we have never seen before.

As Brig. Gen. Forrester alluded to in his column this month, we suffered significant losses in our ranks during the month of February to on- and off-duty accidents. Some of these accidents included vehicle rollovers, vehicle ejections and head-on collisions.

As Soldiers, we have the opportunity to participate in driver's training programs that are offered at many of our military installations. While most of these programs are geared toward our Soldiers operating a military vehicle in a tactical environment, complete with full battle rattle, the emphasis of the training is teaching Soldiers to make smart decisions behind the wheel to avoid an accident.

One way to aid in the fight against these type incidents is to conduct POV check rides and continue driver's training at your installation after you return. A common trend in many communities across our Nation is the availability of defensive driving training courses. For the motorcyclist, the Motorcycle Safety Foundation® courses are provided at most installations by IMCOM. These courses, usually taught by certified contractors that use a standardized program of instruction, have one objective in mind – saving lives.

A best practice I witnessed during a recent visit to an installation was a remedial driver's training program. Those individuals who had been cited for violations in which they had lost their post driving privileges were required to attend the class prior to reinstatement. The eight-hour class is taught on a Saturday and requires participants to show up in a Class A uniform with their first-line supervisor. At the end of the class, the Soldiers have to pass a written exam. It's a simple, yet effective, use of corrective training that worked for this installation.

Tactical driving can be another story. For example, we currently have those that have never driven to those that have logged thousands of miles in combat conditions. For that reason, it is best to start driver's training early in the reset period in a controlled environment, not combat. I know of no better way to engage our young Soldiers than for noncommissioned officers to mentor them on the "do's and don'ts" of operating vehicles such as the HMMWV. The best driver's training programs incorporate on- and off-duty driving in all types of weather and visibility. They then move on to more advanced tasks such as driving with night vision devices, load planning and security of loads.

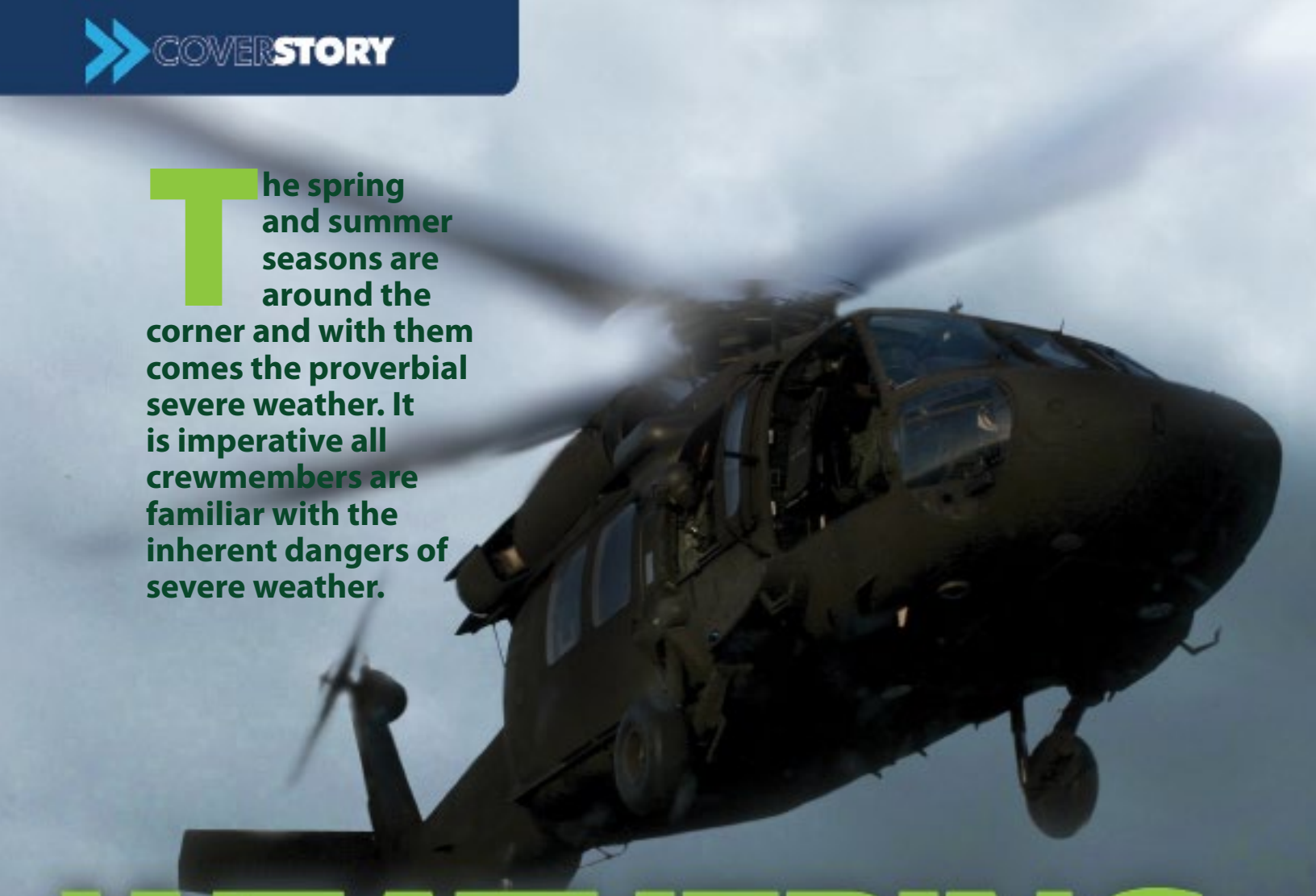
Many installations have moved toward a driving center of excellence. Fort Polk and ARCENT in Kuwait have done so in tactical driving. Fort Drum has taken it one step further with its driver's training program. Set in a real-world environment, the program combines both POV and tactical training in a one-stop building. Fort Drum also is working to partner with the state of New York to teach driver's education on post. The program will focus primarily on Soldiers, but it may also be made available to Families.

To expand the program your post offers, check into ways to work with your local and state enforcement agencies. Also check out what we have to offer here at the U.S. Army Combat Readiness/Safety Center via our Web site at www.crc.army.mil. Our Driver's Training Toolbox has the resources to either get you started or enhance the program you currently have in place at www.crc.army.mil/drivertrainingtoolbox/lessonone.aspx.

Keep moving left of the boom on accidents and thanks for all you do in making us Army Safe and Army Strong!

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

The spring and summer seasons are around the corner and with them comes the proverbial severe weather. It is imperative all crewmembers are familiar with the inherent dangers of severe weather.



WEATHERING the CHANGE

LOU STRAW
3D Research Corporation/Weather Operations
Air Combat Command (USAF)
Fort Rucker, Ala.

Often called nature's heat engine, thunderstorms are born from cumulus clouds that grow into towering cumulus and, ultimately, reach adulthood as cumulonimbus. While thunderstorms can occur any time during the year, they most often occur in the late afternoon to early evening on hot summer days. They can form by themselves (single cell, supercell or air mass) or in clusters (frontal, squall lines or mesoscale convective complexes). Thunderstorms harness energy equal to—and often greater than—the energy released by an atomic bomb.

Turbulence

Turbulence is the greatest meteorological danger to aviation. It is caused by the tremendous updraft and downdraft winds within

"Thunderstorms harness
TO—and often **GREA**
RELEASED by an **ATO**

the thunderstorm. The most severe turbulence is between 8,000 and 15,000 feet above ground level (AGL) within the updraft. Updraft winds can be greater than 65 feet per second. Downdraft winds can also produce turbulence, but they are usually less severe and occur below 10,000 feet AGL. Downdrafts have been known to slam a plane into the ground while landing.

Icing

Icing is another significant hazard associated with thunderstorms. It can occur during all three stages of a thunderstorm—the cumulus or developing stage, the mature stage and the dissipating stage. Icing generally occurs in the mature and dissipating stages—the middle levels of the thunderstorms where the temperatures are between zero and minus 15 C. Super-cooled water that exists at below-freezing temperatures will freeze on contact with an aircraft. Clear icing can quickly become extremely hazardous.

Hail

Hail is regarded as one of the worst hazards of thunderstorm flying. It's usually found between 10,000 and 15,000 feet AGL, with the greatest frequency of hail at the mature stage. Hail can produce serious structural damage to an aircraft in just a few seconds. It can be found as far as five miles outside and ahead of an advancing thunderstorm.

Microbursts

Microbursts are yet another hazard well known for bringing down airplanes sooner than expected. They are small-scale, intense downdrafts that, upon reaching the surface, spread outward in all directions. The greatest threat from a downdraft often occurs in the front or leading edge of a thunderstorm. Because of their small size (less than one to two and a half miles) and their short life span (usually less than 15 minutes), downdrafts most often occur over areas without surface precipitation.

Microbursts are not easily detectable using conventional weather radar or wind-shear alert systems. The intensity of the downdraft can reach 100 feet per second. Horizontal winds near the surface can be as strong as 45 knots, resulting in a 90-knot shear (headwind to tailwind change for a traversing aircraft) across the microburst. A major consideration for pilots is that a microburst will intensify for about five minutes after it strikes the ground.

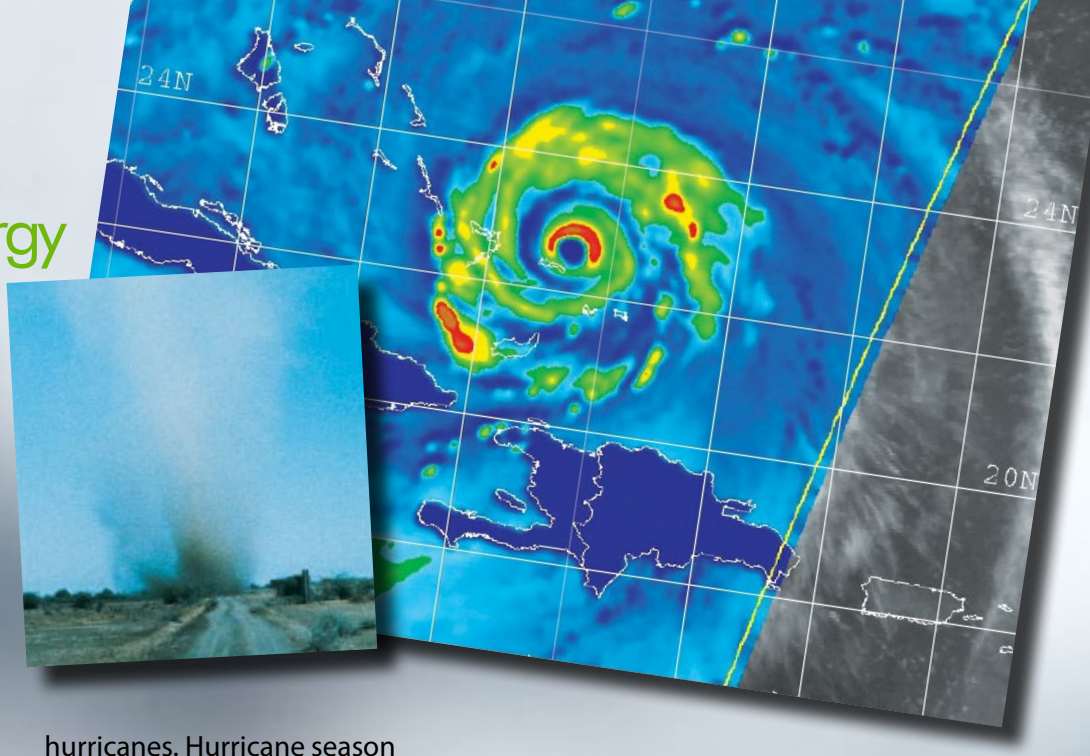
Lightning

Lightning causes around 100 deaths in the United States annually. Lightning can damage not only the skin of an aircraft, but also the electronic components. Lightning generally occurs within 5,000 feet of the freezing level, in light precipitation or light to negligible turbulence. Lightning "crawlers" can travel more than 35 miles along the clouds and have been observed out to 75 miles on radar. It can be a beautiful, but dangerous, light show!

Tornados

Tornados are nature's most violent storms. Although tornados will happen year 'round, the spring (March through May) and, to a lesser extent, the fall (November) are the peak seasons in the United States. Spawned from powerful

ENERGY EQUAL
TER THAN—the energy
OMIC BOMB."



thunderstorms, tornados can cause fatalities and devastate a neighborhood in seconds. A tornado appears as a rotating, funnel-shaped cloud that extends from a thunderstorm to the ground with whirling winds that can reach 300 miles per hour. Damage paths can be in excess of one mile wide and 50 miles long. Most tornados travel from southwest to northeast and occur during the afternoon timeframe, coinciding with the maximum heating of the day. When tornado watches or warnings are issued for the area, take immediate safeguards.

Hurricanes

Among the many summertime phenomena of significance are hurricanes. Hurricane season for the Atlantic and Gulf of Mexico runs from June 1 through Nov. 30. Hurricanes develop as a tropical wave and mature into hurricanes over a period of days. Warm surface waters and a lack of shear in the upper levels of the atmosphere aid in the development of hurricanes. The storm surge is the most dangerous part of the storm.

Storm surge is a great dome of water often 50 miles wide or greater that sweeps across the coastline ahead and east of the eye of the hurricane. Hurricanes will also spawn tornados, most often found in the right-front quadrant (ahead and to the east of the eye) of the storm, roughly 50 to 300 miles from the center.

Much of the same weather you find here in the United States can

DID YOU KNOW?

- At any given time, there are an estimated 2,000 thunderstorms in progress.
- About 45,000 thunderstorms take place each day.
- Annually, the United States experiences about 100,000 thunderstorms.
- About 16 million thunderstorms occur annually around the world.
- The average thunderstorm lasts 30 minutes.
- Lightning from these storms strikes Earth about 100 times each second.

be found in theater. Convection and rainfall tend to fall off during the summer months, thus making it much drier in these regions. Additional features that affect the Middle East are the Shamal, found over Iraq and the Arabian Peninsula, and the Seistan — or "Winds of 120 Days" — over Eastern Iran and the "Stans" region. These are areas of significant winds and blowing dust and/or sand events. These strong, northwesterly wind events sweep across the region beginning in May and last throughout the summer months. They develop when strong cold fronts pass over the mountains of Turkey and Kurdistan and the leading edge of a mass of relatively cooler air kicks up dust and sand, sending it aloft. The duration of Shamals or Seistans is normally three to five days. Since the resultant dust and sandstorm is several thousand feet deep, travel by air and ground comes to a standstill. Sustained winds during these events are normally 20 to 35 knots with higher gusts likely. Visibilities will be reduced to zero or near zero for much of the event. Temperatures at lower elevations still hover above 105 F (42 C) during these events.

HEAT INDEX SCALE

Heat Index	*Effects*
80 F - 90 F	Fatigue possible
90 F - 105 F	Sun stroke, heat cramps and heat exhaustion possible
105 F - 130 F	Sun stroke, heat cramps or heat exhaustion likely
130 F or higher	Heat stroke/sun stroke highly likely

Hot, Hot, Hot!

Another feature in the summer that affects aircrews and aircraft is the heat. Excessive temperatures can lead to many heat injuries such as heat cramps, heat exhaustion and heat or sun stroke. It is crucial you recognize the signs of heat disorders.

Heavy sweating and painful muscle spasms in the legs and stomach are signs of heat cramps. To alleviate this, apply firm pressure on cramping muscles and massage to relieve spasms. Take small sips of water. With heat exhaustion, you may experience heavy sweating; weakness; cold, pale and clammy skin; and a thready pulse, along with fainting and vomiting. To lessen the effects, get out of the sun and into an air-conditioned or fanned room. Lie down and loosen clothing, apply cool wet cloths and take sips of water. Heat or sun stroke is the most critical of all. Signs of a heat stroke are high body temperature (106 F or higher); hot, dry skin; rapid or strong pulse; and, possibly, unconsciousness. If any of these symptoms are apparent, call for emergency help immediately. Move the victim to a cooler environment, remove his clothing and give a cold bath or use cold sponges or towels. Do NOT give fluids.

Preventive measures will help in avoiding a heat-related incident. Drink plenty of water to keep yourself hydrated. Alcohol and caffeine will only serve to dehydrate the body. Dress in lightweight, light-colored clothing. If at all feasible, avoid sun exposure during the heat of the day and stay indoors as much as possible. Always stay alert to possible heat disorders.

> "**ADDITIONAL FEATURES** that **AFFECT** the Middle East are the **SHAMAL**, found over Iraq and the Arabian Peninsula, and the **SEISTAN** – or **'WINDS OF 120 DAYS'** – over Eastern Iran and the 'Stans' region."

Density Altitude

Lastly, we will look at density altitude (DA) and its effects on aviators during the summer heat. Density altitude is defined as the pressure altitude corrected for temperature deviations from the standard atmosphere. Changes in air density are caused by variations in atmospheric pressure, temperature and humidity. The lift of an aircraft wing or blade is affected by the speed of the air around it and the density of the air through which it moves. Lift will be increased by cold, dense air. Both an increase in temperature and increase in humidity cause a reduction in air density. Thus, in hot and humid conditions, the DA at a particular location might be significantly higher than the geometric altitude. Too often, pilots associate DA only with high-elevation airports. Certainly, the effects of DA on airplane performance are increasingly dramatic in operations from such airports, especially when the temperature is also hot. But it is important to remember DA altitude also has a negative effect on performance at low-elevation airports when the temperature goes above the standard air value of 15 C at sea level. Remember also that the standard air temperature value decreases with altitude.

Conclusion

There are many spring and summer hazards to be concerned with. Taking preventive measures and being fully aware of the operational weather is vital to mitigating some of these hazards. The first step in preparedness is establishing a severe-weather action plan for home, work, school and outdoors. Always respect the weather. «

Battling the Bite

SGT. CHARLES BATEMAN
61st Medial Detachment (Preventive Medicine)
Fort Campbell, Ky.

As the temperature outside continues to rise, more insects—including mosquitoes and sand flies—have started to emerge, causing an increased workload for Soldiers of the 61st Medical Detachment, Preventive Medicine. One of the detachment's responsibilities is to monitor vector populations and initiate appropriate control measures once predetermined thresholds are reached. Populations of concern include Anopheles mosquitoes, which can transmit malaria, and sand flies, which can transmit leishmaniasis.

The 61st Medical Detachment accomplishes this mission by setting out 40 Centers for Disease Control mosquito light traps twice a week at different sites throughout the Victory Base Complex (VBC) in Baghdad, Iraq. These traps use a light source to attract mosquitoes and sand flies and suck them into a netted cup for collection. The traps are set out in the afternoon and collected the following day.

Catches are brought back to the lab, where the mosquitoes and sand flies are separated and identified. Additionally, Kellogg, Brown and Root (KBR) Vector Control contractors operate traps called Mosquito Magnets®. The traps burn propane to produce carbon dioxide, which attracts bloodsucking insects. The magnets run continuously throughout the VBC, and captured insects are collected weekly for identification by the 61st Medical Detachment. All mosquitoes and sand flies collected in the light traps and the mosquitoes from the Mosquito Magnets® are sent to the U.S. Army Center for Health Promotion and Preventive Medicine (Europe) for analysis.

Population data suggest that mosquito levels on the VBC will peak between the months of April and June, while sand fly population levels will peak between June and October. The 61st Medical Detachment has received numerous complaints from

DID YOU KNOW?

In Iraq, sand fly season runs from April through November, peaking in September or October. While effective treatment is available, prevention remains the best option.

Soldiers and civilians about these insects. Fortunately, they can protect themselves from mosquitoes and sand flies by using the Department of Defense (DOD) arthropod repellant system. First, the uniform should be worn with sleeves down and pant legs bloused inside the boots. Second, uniform and bed nets should be treated with permethrin using an IDA kit or the infamous yellow can. Lastly, the insect repellant DEET should be applied to all exposed skin, to include the hands, neck and face. The lotion should be reapplied frequently to those who sweat a lot.

Another good idea is to ensure breeding habitats are removed from the area by picking up trash, eliminating stagnant water, cutting down excessive brush and removing old sandbags where sand flies live. By taking these small preventive measures, the chances of contracting diseases such as malaria and leishmaniasis will be significantly reduced. Help yourself and your buddy by remaining fit to fight.

FYI

For more information on leishmaniasis and other insect-borne diseases, visit the U.S. Army Center for Health Promotion and Preventive Medicine Web site at http://chppm-www.apgea.army.mil/ and check under the Diseases of Interest heading.

THIS BITES

The best way to prevent leishmaniasis is to prevent sand fly bites. There are no vaccines or pills to prevent it. To decrease the risk of being bitten, Soldiers should:

- Stay in air-conditioned tents from dusk to dawn when possible.
- Stay in well-screened tents if air-conditioned tents are not available.
- Wear long-sleeved shirts, long pants and socks when going outside. Tuck undershirts into pants and pants into boots.
- Apply insect repellent liberally on uncovered skin and under the ends of sleeves and pant legs. The military controlled-release lotion containing 33 percent DEET is effective for four to 12 hours. Repeat as directed.
- Treat clothing with permethrin-containing insecticides. The military IDA kit treats one uniform and lasts through approximately 50 washings. Uniforms treated with permethrin in an aerosol spray can must be retreated every five to six washings.
- If sleeping in an area without air-conditioned tents or proper screens, use a fine mesh bed net (at least 18 holes per inch) and tuck it under the mattress. The bed net should be soaked or sprayed with permethrin because sand flies are small enough to pass through even fine mesh bed nets.
- Avoid dogs or rodents near sleeping areas.

Source: Deployment Health Clinical Center

After the Ouch: TREATING BITES and STI

Whether in a stateside maneuver area or in theater overseas, Soldiers occasionally come into contact with insects and animals that sting or bite. The treatment a Soldier receives after a painful encounter with wildlife is critical, so it's important to know the proper guidance for treating these injuries.

Be it wolverine or wild dog, if an animal in the wild bites a Soldier, it should be killed and sent with the victim to the nearest medical facility. Laboratory testing of the animal's head will reveal what sort of diseases it could have passed on to the unlucky Soldier. So, if possible, kill the animal, then immediately treat the troop. There is no time to waste in this process.

First, wash the wound with soap and water for 20 minutes, and then cover the punctured skin with sterile gauze. If the injury is to an arm or leg, bind the appendage with either a sling (for the arm) or a splint (for the leg). It is important to immobilize the extremity as a precaution against further injury. Finally, move the victim to the nearest medical unit for proper treatment.

This technique serves well with most animal bites. However, procedures differ by degree when it comes to more common types of bites and stings. A bee sting, for example, is a familiar threat to just about anyone who has ever enjoyed a family picnic or a walk in the woods. But bees can also harm Soldiers. And when they do, Soldiers should be prepared.

If a Soldier has been stung, carefully remove the stinger by gently scraping it with a firm, hard-edged implement such as the edge of a knife or even a finger nail. Be careful not to squeeze the venom sack attached to the stinger, as this may inject more venom into the victim. Once the stinger is removed, wash the area with soap and water. If possible, apply either ice or a chemical freeze pack to the wound. When treating a Soldier who is allergic to bee venom, try to find an emergency allergic reaction kit. Also, be prepared to perform cardiopulmonary resuscitation in case the victim is overcome by the symptoms. Above all, seek medical assistance immediately.

It may surprise some to know that ant and tarantula bites and scorpion stings have similar treatment schemes. Ants and tarantulas possess a relatively mild venom, if any. Scorpion venom, however, could range from mild to highly toxic, depending on the species. Caregivers who suspect a person has received a dose of highly toxic venom should attempt to calm the victim. In addition to reassuring the victim, this effort will prevent a rapid heartbeat, thereby diminishing exposure of victim's tissue to the toxin. This method of first aid applies no

NGS

1ST LT. ERIK JOHNSON
Indiana Army National Guard

matter the source of deadly toxin.

Thankfully, with the exception of rare species of scorpions, these three animals are not known to carry deadly toxins. However, that doesn't mean aggressive treatment shouldn't be given to the victim. Delaying treatment for even a mild toxin could risk some permanent injury to the Soldier. So, first, wash the affected area with soap and water, and then apply ice or a freeze pack. Baking soda or calamine lotion applied to the wound will help relieve pain and itching. And, as always, the most important step in treating the victim of an animal bite or sting is to quickly get the person to professional medical help.

It shouldn't come as a surprise that the black widow and brown recluse spiders both have highly toxic venom. First aid will follow much the same routine as for other bites and stings; however, the consequences of delaying expert medical care are considerably greater. First, calm the Soldier. Next, wash the area of the bite with soap and water and apply an ice pack, if available. Most importantly, rush the victim to medical support. Without expert medical treatment, a victim of either one of these spiders may suffer permanent injury to the muscles and skin in and around the area of the bite.

Although any of the above injuries can be painful and dangerous, they're typically not life threatening. Of course, we haven't discussed snakes yet.

A Soldier bitten by a poisonous snake is in dire need of medical treatment but will initially need first aid. To begin, immediately remove the injured Soldier from the vicinity of the snake. Then remove any rings from the Soldier's fingers; this is to prevent any additional injury due to swelling. Remember, the victim has been poisoned, so it's important to inhibit the flow of poison into the vital organs. Talk to the victim reassuringly to quiet and comfort him, but more needs to be done to inhibit the toxins in the snake's venom from entering the Soldier's bloodstream.

If bitten somewhere on the torso, the Soldier is even more vulnerable than if the bite had been to a limb, so get immediate medical attention. Should the bite occur to a limb, use a strip of uniform cloth or medical gauze to apply a constricting band between the wound and the Soldier's heart. The constriction should be just tight enough to allow one finger to slip between the band and skin without difficulty. The distance of the band from the bite should be about the width of two fingers placed side by side.

For bites to the hands or feet, just one constriction will do; however, for bites to the arms or legs, use two. One constriction will be placed above the wound to restrict the flow of poison to the heart and internal organs; the other will be placed below the wound to restrict flow to the hands or feet, where damage to the musculature could be seriously debilitating. Again, bind the affected limb so it remains fixed and unable to move. If possible, kill the snake without damaging its head and transport it along with the victim to a medical treatment facility.

Bites and stings can be painful occurrences, but a little knowledge about how to treat these injuries will greatly benefit the victim. Never try to suck the poison from a wound. It won't do the victim much good and could cause the caregiver great harm. Instead, focus on getting the victim to medical help as quickly as possible. Remember, forewarned is forearmed. Stay safe.

FYI

For more information on some biting and stinging creatures found in theater, see the Arachnids of Iraq and Kuwait poster on the U.S. Army Center for Health Promotion and Preventive Medicine Web site at http://chppm-www.apgea.army.mil/DEPLOYMENT/ARACHNIDSOFIRAQANDKUWAIT.PDF

Every year, we have Soldiers die from heat-related injuries because they don't take the necessary precautions to prevent heat injuries.

COL. JOHN CAMPBELL, D.O.
U.S. Army Combat Readiness/Safety Center
Fort Rucker, Ala.

THINGS ARE HEATING

Heat casualties represent a serious threat to the medical readiness and fitness of our military personnel both in garrison and during deployments. Each year, the Army records hundreds of cases of heat-related injuries, including some that take the lives of Soldiers. These injuries often result from individual physical training (PT), PT testing, training exercises and other activities, including those recreational in nature.

The U.S. Army Center for Health Promotion and Preventive Medicine (USACHPPM) provides guidance and has information, along with numerous posters, readily available on its Web site at http://chppm-www.apgea.army.mil/heat/. Check out the Heat Injury Prevention Policy (DASG-PPM dated April 20, 2007), which includes Web sites for obtaining training videos, posters and guidance for heat injury prevention.

Additionally, USACHPPM and the U.S. Army Research Institute for Environmental Medicine have developed valuable heat-injury prevention products, including useful posters, videos and pocket guides. These are also available on the USACHPPM Web site. Use them before someone in your formation has a heat injury.

Leaders must be held accountable for the training and actions of their Soldiers. Leaders should incorporate the composite risk management (CRM) model into every training event and account for the worst-case scenario of Soldiers not drinking water. Some trainees don't know when to refill their canteens, some are unable to find water points during land navigation events and some Soldiers are forced to either get water or "gut it out" to the next event. All these issues happened during fiscal 2007. In the units involved, the needed policies and command involvement were nonexistent. This needs to improve. The U.S. Army Combat Readiness/Safety Center (USACRC) publishes these occurrences in our preliminary loss reports.

All cases of heat injuries must be reported to the USACRC and the medical community. The more we know about these heat injuries, the better we can establish preventive guidance and training. All cases of heat stroke and heat exhaustion must be reported to the

THINGS TO REMEMBER

- **Heat-related illness can be prevented.**
- **Keep cool; avoid vigorous physical activity in hot weather and drink plenty of water and other nonalcoholic fluids.**
- **Seek medical assistance if a person shows any signs of heat exhaustion or heat stroke.**
- **At all times, notify supervisors of any incidents of heat-related illness.**

Army Medical Surveillance Activity (AMSA) through the Reportable Medical Events System (RMES). These cases must be reported within 48 hours in accordance with Army Regulation 40-5, *Preventive Medicine*, paragraph 2-18d. This reporting requirement includes case reports from subordinate clinics and clinics at satellite locations. Heat injuries at mobilization sites should be reported to the nearest regional military treatment facility (MTF). Preventive medicine personnel at MTFs should receive local reports of possible heat injuries and investigate and report the required information through RMES to AMSA.

As much as we know, and with all the information about heat injury prevention available to all Soldiers, we should be successful at reducing heat injuries during the upcoming hot weather season. Whether at work or play in the summer heat, it's important to reduce the risk of heat stress as much as possible and remain vigilant for signs that all is not well. Remember to use CRM every time in planning for the hot weather ahead.

PEEING WHITE, READY TO FIGHT!

COL. JOSEPH F. MCKEON
Aeromedical Proponency Directorate
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Staying alive is serious business when you're a Soldier. Although we're an Army at war battling a deadly enemy overseas, there is another enemy stalking us everywhere from the front line to the front yard. That enemy is summer heat.

You say, "Okay, here we go again ... another article on heat injury prevention. Is it almost summertime already?" Time flies, whether you're doin' 20 years or just getting through your initial obligation. Any way you look at it, it's going to get hot. And heat kills, literally. It claims batteries, paint jobs, unwatered plants, dogs left in cars and unacclimatized Soldiers. Heat is just plain unforgiving.

Here's the deal. Whether you're in the sandbox, training back at home station or enjoying the sunny climate of Fort Irwin, Calif., you'll be facing a heat threat. When you're packing your full battle rattle with your sleeves down and your gloves on, you're a walking teapot. As your body sweats to cool off, you're losing water. If you wait until you're thirsty enough to want to drink, it's too late—you're already behind the curve! Did you know just a 2-percent decrease in your total body water will lower your functional IQ? Who can afford to lose intelligence? Heck, if I had 10 more IQ points, I could've been a pilot instead of just a flight surgeon!

So how can you tell if you're adequately hydrated? You've seen the charts that tell you how much to drink for a certain workload in a given environment. Some Soldiers think "more is better"—that as long as they continue to drink water, they'll be OK. However, each person's metabolic needs may be different, and it's possible to become water intoxicated and die. A good rule of thumb is you should have to hit the latrine every 90 minutes to two hours. And while you're answering "nature's call," check your urine color. It should not be a concentrated yellow color. There's a simple saying you might want to remember—"Peeing white, ready to fight!"

If it's lunchtime and you haven't gone since you got up that morning, you aren't drinking enough. And coffee doesn't count because caffeine, which is also found in sodas, is a diuretic. That means it makes you urinate more than you drink. If you're counting on coffee and sodas to get you by, you're "bouncing checks" as far as hydration goes (you're losing more than you're taking in). So drink water and skip the coffee and sodas.

If you're a Leader, check on your troops. If you think you aren't a Leader, think again. Wherever two or more Soldiers are gathered, somebody is the Leader! Look out for your battle buddy and yourself. Drink water, avoid strenuous work in the heat of the day and acclimatize before stressing your troops.

Take care of your body. After all, where else are you going to live?

Editor's note: For a more in-depth discussion of heat injury prevention, see the U.S. Army Center for Health Promotion and Preventive Medicine Web site at http://chppm-www.apgea.army.mil/heat/.

Back in Sa

the ddle Again

LT. COL. MIKE MORGAN
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Bagram Airfield, Afghanistan

Just get back from the sandbox? How about a mid-tour leave? That was what I was doing last summer when I took some time off from the challenges in Afghanistan. While I was home, I got back in the saddle again, enjoying the freedom only a motorcycle provides. During my leave, I covered nearly 900 miles without a scratch, which means you don't have to become a statistic when you come home and ride. Here are some tips to help keep you on your bike and your bike on the road when you get back from the sandbox.

Use Your Head

The most important thing you can do is a good risk assessment. This doesn't necessarily have to be difficult. It's mainly using common sense and good judgment to blunt some of your eagerness to do things that you shouldn't when you first get back. The things I considered in my personal risk assessment included the condition of my bike, length of my rides and time when I rode. I also considered whether to carry a passenger and where I would ride.

Is Your Bike Ready?

You hated putting your bike into storage before you left. I'm certain you did all the right things like changing the oil, hooking up the battery to a trickle charger and putting stabilizer in the fuel. Now that you have returned, it's time to be just as meticulous about your bike's maintenance before riding it on the road. Check the pressures in your tires because they will have gone down. Check your cables to see if they need adjustment. Ensure the nuts and bolts that were tight when you left are still tight now.

Dust off your Motorcycle Safety Foundation training and use T-CLOCS—an acronym for tires, controls, lights, oil, chassis and stands—as a guide as you check your bike.

Adapted from Motorcycle Safety Foundation materials
www.msf.usa.org

T-CLOCS

T-CLOCS was developed by the Motorcycle Safety Foundation to assist motorcycle drivers in completing pre-ride (or pre-purchase) motorcycle inspections. T-CLOCS is easily memorized and very useful. The individual letters stands for the specific areas to be checked. The T-CLOCS inspection should be conducted at least twice a year to ensure safe riding.

> "When you're **RIDING** and **ENJOYING THE BREEZE**, it's sometimes **HARD TO REALIZE** just **HOW HOT** it is."

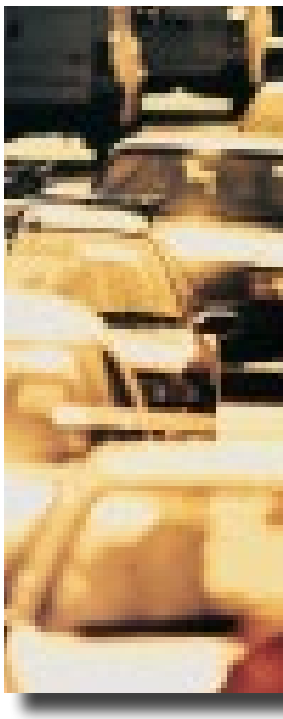
Plan a Reasonable Ride

When I first got back, I wanted to take a 13-hour ride from Fayetteville, N.C., to Fort Campbell, Ky. However, that would have been a high-risk trip because of the hot weather, my need for rest, the length of the ride and the unfamiliar terrain. Instead, I took short rides—none of which lasted much longer than an hour—to brush up my skills. To reduce my risks, I began by riding on back country roads, where I would encounter less traffic. Also, I didn't carry any passengers at first because having a passenger dramatically changes a bike's handling.

I avoided riding at night because of the reduced visibility and huge bugs that came out and generally made things less than enjoyable. When I did ride after dark, I kept to routes that had bright street lights. The downside to riding mainly during the day, however, was afternoon temperatures that often topped 100 F. As my rides got longer, I needed to make sure I kept myself hydrated. One afternoon, as I was riding back from Myrtle Beach, S.C. (about a 3.5-hour ride), I had to take a 30-minute break to drink some Gatorade® and sit in the shade. When you're riding and enjoying the breeze, it's sometimes hard to realize just how hot it is.

No Highway Hash, Please

I also avoided metropolitan Fayetteville at all costs. I'm convinced it's a high risk for bikers anytime they ride around Fayetteville's shopping area. The worst thing a biker can see in their rearview mirror is a minivan full of out-of-control kids with a driver talking on a cell phone. There are a lot of vehicles that fit that profile in Fayetteville and other congested urban areas.



Safety—It's an Attitude!

Even though I've been riding for quite a while, I still think of myself as a novice. I keep that attitude because I still want to be riding in my 90s. If you start thinking you're good, you're likely to get cocky and overconfident and turn into an accident waiting to happen. That's why I broke myself in slowly when I first got back, treating every ride as a training session so I could get used to cornering, braking, scanning and positioning in traffic. These are all skills that require constant refinement regardless a rider's experience level.

The Intersection of Safety

When I'm sitting at a red light, before the light turns green, I try to make eye contact with as many drivers as I can. You can never tell what type of effect this has—it's just something I like to do. The key, however, is realizing you'll always come out the loser in a right-of-way confrontation with a car or truck at an intersection, regardless what the traffic control says. I live near an intersection that has a blinking yellow light for the road I travel and a blinking red light for the crossroad. I normally slow to about 35 mph and clear left and right before entering and assuming right-of-way. When it comes to intersections, I'd rather give way than give blood.

Dress for the Occasion

I wear the required personal protective equipment (PPE) whenever I ride. Most PPE is reactive, being designed to help you survive a crash. However, one piece of PPE that can help prevent a crash is good protective eyewear. While I was home, I bought a fitted pair of Wiley-X® goggles with foam cups designed to keep the wind out of my eyes. They cost way more than I would have ever expected to pay for glasses, but it was worth it to see clearly and keep my eyes from drying out.

> "If you start **THINKING YOU'RE GOOD,** you're likely to get **COCKY** and **OVERCONFIDENT** and turn into an **ACCIDENT WAITING** to **HAPPEN.**"

You Booze—You Lose!

I saved drinking and riding for last. The bottom line is that I just didn't do it. This is an area of personal responsibility that, despite countless safety briefings, counseling and policy letters, ultimately rests on your shoulders. If you're redeploying from an alcohol-restricted tour, I can understand your desire to imbibe. However, for your sake and that of your friends, Family and unit, please don't mix bikes and booze.

Riding is a sport that befits a band of brothers. If you're an experienced, safety-conscious rider, mentor a Soldier who is new to the sport. If you're a Leader with Soldiers who ride, show them their safety is your concern. As Soldiers, we are responsible to keep each other safe. As a band of brothers, how can we do less?

Stranded in

GREGORY SANCHES
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Fort Wainwright, Alaska

Imagine a Soldier riding his all-terrain vehicle (ATV) into the Alaskan tundra, only to become lost and stranded for days …

Jim—that's not his real name, but we'll use it for easy reference—had big plans for his fall moose hunt. Jim, who was stationed at Fort Wainwright, Alaska, had contracted a guide to take him hunting. Looking to make the most of their time hunting, the pair decided to ride their ATVs to the jump-off point for the hunt, leave them there and then return in a light plane from a nearby airstrip. When it was time for the hunt, the pair planned to fly back out to the strip and pick up their ATVs and gear.

The day came for Jim and his guide to meet and ride their ATVs to that drop-off point. Jim was confident about the ride—he'd already spent a lot of time camping and hunting in the backcountry. This was a piece of cake—or so he figured—so he didn't bother letting anyone else know where he was going, what trail he was using or when he was due back.

As the pair rode their ATVs down the trail, Jim got ahead of his guide. Instead of waiting for him to catch up, Jim kept pushing on, thinking he could find his own way to the drop-off point. After going some distance, Jim lost the trail, but thought he could still make it by taking off across the tundra and heading toward Iowa Ridge. However, he didn't have a map or compass and he didn't have his portable global positioning system (GPS) equipment with him. Beyond that, he was not familiar with the terrain he was now in.

As he rode, Jim's heavily loaded ATV began to overheat, ultimately shorting out the electrical system. Fortunately for Jim, he was able to pull start the engine once it had cooled down. However, Jim was lost and, as night fell, he decided to camp next to his machine, fighting off the chilly temperatures by staying warm in his sleeping bag.

The next day, Jim headed out again across the tundra. As he rode through the rugged terrain, the ATV tipped onto its side. Try as he might, Jim could not get it back onto its wheels. Stranded, he spent his second night in the wilderness, camped out beneath a tarp next to his machine. The next day brought rain, wind and temperatures that dropped into the 40s as Jim hunkered down beneath the tarp. And, to make things worse, he was almost out of gas. Even if he could get the machine back onto its wheels and running, he didn't have enough gas to get to somewhere he'd be safe. The only good news was Jim had his cell phone and could keep his family apprised of the situation.

Jim spent a second night under the tarp next to his stranded ATV. The next day, his family decided to

the Tundra

call the Alaska State Troopers and tell them Jim was stranded and provide a general idea of where he was. The troopers launched a helicopter and, after a couple of hours, found Jim. Unable to land because of the rugged terrain, the troopers contacted medical evacuation personnel at Fort Wainwright, who successfully got to Jim. They were able to rescue him and bring him back home, but his ATV had to be left where it was—out in the tundra. Not exactly the way Jim had envisioned things going.

As bad as things went, Jim was lucky. Things could have turned out far worse than just being in hot water with his family for screwing up his backcountry trip. With the benefit of hindsight, it's easy to see his trip was an accident waiting to happen. Instead of applying composite risk management (CRM) to plan for any potential problems, he assumed too much of his own skills. He substituted PPPP (pitifully poor prior planning) for CRM and got the unpleasant results.

> "No one **PLANS** on **GETTING LOST,** but once you are, **YOU'LL HAVE TO SURVIVE** on what you **BROUGHT** with you."

So let's take a minute to use a little CRM to see how an ATV trip into the backcountry could have been better planned.

First, don't get cocky because you've done something in the past and assume you can take shortcuts. You're not God—you don't know everything that could happen. Because of that, check your survival equipment to make sure you're carrying everything you'd need to survive should you become lost or stranded. No one plans on getting lost or stranded, but once you are, you'll have to survive on what you brought with you.

Second, always tell someone responsible where you're going and leave a detailed map with them. Establish certain checkpoints along your route and, when you reach them, contact that responsible person. That way, should something happen, it will be a lot easier for searchers to find you.

Third, never travel alone in the backcountry. Even if your guide is moving slower than you want to, stay with him. Guides know where they're going—you may only "think" you know. This is especially true when traveling through unfamiliar terrain. Also, common sense dictates taking a map, a compass and, if you have one available, a GPS so you can keep track of your position.

Finally, remember the backcountry can be very unforgiving of mistakes, and man is not the top of the food chain. Before you go out, make sure you've got a good plan to come back.

Editor's Note: This story was adapted from one published in Wolf Bites*, a safety newsletter Mr. Sanches publishes for the benefit of the Soldiers in his unit.*

Bridging the Gap

CHRIS FRAZIER
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In an effort to turn the tactical vehicle accident arrow downward, the Army is offering several driver's training programs for Soldiers.

Operating or riding in Army vehicles was the No. 1 fatality-producing accident for Soldiers while on duty in fiscal 2007. In the majority of these accidents, recurring trends such as excessive speed for the conditions, overcorrecting, inadequate training and overconfidence emerged as key causal factors.

In some cases, units are developing controls, but failing to implement them and provide adequate supervision, said Lt. Col. Randall Cheeseborough, U.S. Army Combat Readiness/Safety Center Ground Task Force chief. Hoping to reverse the accident trend, many units are sending Soldiers to training courses at Camp Buehring, Kuwait, to polish their driving skills before moving forward to Operation Iraqi Freedom or Operation Enduring Freedom.

Officials have already received positive feedback from Soldiers on the Up-Armored HMMWV Training Course, Cheeseborough said. The 10-kilometer course covers many of the skills Soldiers will need when driving a tactical vehicle, including collision avoidance, steering, braking, off-road recovery, side-hill obstacles and restricted-lane driving.

Another potentially life-saving device being used at Camp Buehring is the HMMWV Egress Assistance Trainer (HEAT). Currently, there are four HEAT devices available for Soldier use.

The HEAT gives Soldiers a more realistic way to practice rollover drills and consists of a HMMWV cab mounted to a tank engine maintenance stand. Using an electric motor, the HEAT simulates a rollover by rotating the device up to 360 degrees in either direction and stopping it in various positions, allowing Soldiers to rehearse a variety of egress techniques at different angles.

Through this training, Soldiers learn to react quickly and instinctively to an actual rollover and have confidence in their safety restraints and equipment. The HEAT also teaches Soldiers the importance of crew coordination, said John Hutchinson, safety director, Area Support Group-Kuwait.

"Everybody in the vehicle has to work in concert," Hutchinson said. "In an accident scenario, they all have responsibilities — from calling 'rollover' to pulling the gunner down and holding him so he doesn't fall out. They must work together as a crew."

Another initiative that allows Soldiers to train on four M1114 simulators was launched by ASG-Kuwait in mid-November, Cheeseborough said. A patrol simulator will be available for drivers of Heavy Equipment Transports, M916s, tractor-trailers, Heavy Expanded Mobility Tactical Trucks or any other vehicle that carries cargo.

Cheeseborough said all the training courses are valuable tools that will increase Soldier survivability. He hopes units will continue to send their Soldiers to the courses so they can develop the necessary skills to safely navigate the roadways.

"Driver's training is still a major issue with some units," Cheeseborough said. "We need to get the word out to the rest of the Army that there are some great programs out there."

FYI

For more information on driver's training courses, visit the Driver's Training Toolbox at https://crc.army.mil/drivertrainingtoolbox/.

OH-58D Kiowa Warrior

CHIEF WARRANT OFFICER 5 DANIEL R. HAUF
Directorate of Evaluation and Standardization
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Engine overspeed incidents are increasing in OH-58D units. These overspeeds are a result of both deliberate full authority digital electronic control (FADEC) manual throttle training and routine flight procedures.

Some of the overspeeds experienced during training of FADEC manual throttle operations (Task 1102) are attributed to the instructor pilot's (IP) failure to recognize the situation in a timely manner and apply the appropriate recovery procedure. The delay can be attributed to the lack of information or feedback from standard cockpit instruments because the IP's attention is focused elsewhere. An example of this would be the IP's attention being focused outside the cockpit during a critical phase of flight, such as during short final and approach. By the time the IP recognizes the situation and applies the proper corrective action, it is

too late to prevent the overspeed. This is the classic "IP late with corrective action."

Experience is a major factor when conducting manual throttle operations. Experienced IPs know where to get their sensory cues. In the case of manual throttle, it's keeping a hand on the throttle/collective and detecting even the slightest input change made by the pilot. This gives the IP more control over the situation so he can immediately stop throttle movement if he senses it going in the wrong direction.

Other instances can be attributed to the IP exceeding his personal abilities and limitations. This is sometimes referred to as "pushing the envelope." This is a normal process and applies to nearly everything we do as humans. We want to determine our comfort level by seeing just how far we can get into a situation and still be able to recover from it. Fortunately, we have clearly defined standards in the aircrew training manual (ATM) and it is imperative new IPs understand the ramifications of exceeding those standards. Being slow to correct the pilot exceeding the plus or minus 100-foot altitude standard in the downwind leg of the traffic pattern has fewer consequences than allowing the pilot to exceed the 95- to 105-percent N_R (main rotor speed) limitations set forth for manual throttle operations. In this case, the IP must perform corrective action immediately

> "**EXPERIENCED** IPs **KNOW** where **TO GET** their **SENSORY CUES.**"

Trends

to avoid exceeding aircraft limitations.

Failing to properly execute a recovery procedure is another cause of overspeeds. For example, the IP executes underspeed recovery at altitude, but fails to place FADEC back into AUTO before advancing the throttle. The IP may have been so focused on flying and recovering the aircraft that he either forgot to press the AUTO/MANUAL switch or pressed it but failed to verify it was switched to AUTO before advancing the throttle. In one instance, repeated pressing of the switch failed to place the FADEC back into AUTO (switch failure).

Loss of situational awareness is also a culprit during training of manual throttle. The IP placed the AUTO/MANUAL switch to MANUAL while the aircraft was on the ground at flat pitch, 100 percent N_R. The ATM clearly states the FADEC switch will not be placed in MANUAL while the aircraft is on the ground unless the collective is full down and the throttle is at idle. Manual throttle operations demand a very high degree of attentiveness on the IP's part, and a sterile cockpit is a must. Eliminate any extraneous conversation (including any unnecessary external radio traffic) that does not pertain to the task. Any distractions that prevent the IP from focusing his full attention the task at hand must be eliminated. Compartmentalization is defined as "the

> "The **IP** must **ENFORCE** established **STANDARDS** and **ENSURE** their **MIND IS CLEAR** and that they are **READY TO PERFORM** whenever they **CLIMB INTO THE COCKPIT.**"

ability of a pilot to block out all personal problems when he closes the canopy." This works well with some crewmembers, but not with others. It is imperative that mission briefers identify those pilots who historically carry their personal problems with them into the cockpit and adjust accordingly, especially if the individual is an IP.

Overspeed incidents are not limited only to the conduct of manual throttle training. Several overspeeds were attributed to a combination of aircrews deviating from established checklist procedures along with a breakdown in aircrew coordination. On engine runup, instead of waiting for the generator load to decrease to the acceptable level before conducting the FADEC check (at idle), crews elected to bypass and proceed through the checklist. When they decided it was time to go back and conduct the check, they did so but at 100 percent N_R, which resulted in an engine overspeed. The high price paid for the 15 to 30 seconds of time saved on the runup was a new engine and lengthy downtime.

Training, discipline and standing operating procedures are the foundation of continuous combat effectiveness. Commanders must ensure their aircrews are given the time and opportunity to train those critical tasks. Mission briefers must be trained and qualified in identifying risk factors and reducing the risks associated with the specific tasks an aircrew will be performing.

The IPs must enforce established standards and ensure their minds are clear and that they are ready to perform whenever they climb into the cockpit. The Global War on Terrorism places a high level of tactical risk upon our aircrews and aircraft. Anything aircrews can do to reduce the accident risk greatly increases our leading edge on the battlefield.

150 POUNDS OF KNUCKLEHEAD

BOB VAN ELSBERG
U.S. Army Combat Readiness/Safety Center
Fort Rucker, Ala.

Like every red-blooded American teenage boy back in the 1960s (and since), I "lusted" for the fastest, coolest-looking street machines. Most of the time, I only got to look. But then, there was one memorable time …

My buddies and I envied Tony. A couple of years older than the rest of us, he'd joined the service and scraped together enough money to buy an Austin Healey 3000 sports car. No puny four-banger under the hood like on other English sports cars. This baby had an overhead-cam, 3.8-liter, six-cylinder racing engine that would unleash a whole herd of ponies when you stomped on the gas. It was the envy of the rest of us teenage guys who were lucky if we didn't have to pedal our transportation. It was also a great "chick magnet"—an observation not lost on the rest of us guys.

In addition to having a hot sports car, Tony also had an "interesting" sense of humor. He'd offer each of us a chance to go for a "performance demonstration" ride in his car. You know, "fun stuff"—like seeing if the 3000 really would do the advertised 140 mph. Of course, we all bit.

Finally, I got my shot. It was a Saturday night and we had the speedometer needle bent well past the posted speed limit. It was great—I had never gone so fast in my whole life! I thought it couldn't get any better than this when, suddenly, Tony nudged me. When I looked over, he jerked the steering wheel off the column and handed it to me. With a big grin, he said, "Here, Bob, you drive!"

It was a "come-to-Jesus" moment for me. My heart stopped as all 17 years of my brief life flashed before my eyes. I could see the next day's front page story, "Police scrape two badly mangled bodies off the interstate—coroner using dental records to identify remains."

I sat there for what seemed like a lifetime, holding what had been the vehicle's primary means of direction. As I wondered what my mother would say at my funeral, Tony reached under his seat, grabbed a pair of vice grips and latched them onto the

steering column. At least we had some semblance of steering again. From the grin on his face, it was clear he took great delight in my stark terror.

Luckily—if luck can be thought to have played a part in this—the car didn't go out of control, nor did we have to dodge anything. I found out later I was just one of a long list of Tony's victims. All the previous initiates had been sworn to secrecy so the next unwary passenger could experience the full horror of it all.

For a few seconds of amusement, Tony could have killed us both—which leads us to the moral of this story. Just how much are you willing to risk for a thrill, to amuse a friend or to show off behind the wheel? Yes, of course, YOU know you're a better-than-average driver—but what if something unexpected happens? Could you live with the consequences? Could your passengers? How would you feel watching one of your buddies being buried while their parents grieve at the funeral?

I've heard a reckless driver referred to as a "loose nut behind the wheel"—but that wouldn't quite work here. You see, the problem wasn't a missing piece of steel—it was 150 pounds of knucklehead planted in the driver's seat! Have you ever gotten into a car and then asked yourself, "Am I really sure I want to ride with this driver?"

The following examples taken from the U.S. Army Combat Readiness/Safety Center's preliminary loss reports (PLRs) show that might be a good question to ask:

- A Soldier in a sports car driven by a civilian died when the driver lost control, veered off the road, struck a power pole and tree and then overturned. The Soldier was pronounced dead at the scene. Both occupants were wearing seat belts.
- A Soldier was riding in a vehicle when the driver, an intoxicated Soldier, lost control, went off the road and struck a tree. While the driver survived, the Soldier riding as a passenger was killed.
- Two Soldiers and a civilian were riding in a car driven by another Soldier when the car suddenly left the road and rolled over several times. One of the Soldiers wasn't wearing his seat belt and was partially ejected and killed. The other passengers survived but suffered injuries. The driver, who had been drinking and operating the vehicle at a high rate of speed, survived the crash uninjured.

In two of the three reports above, the reckless driver survived, but the passenger did not. In both cases, the PLR noted the deceased Soldiers chose to ride with drivers that clearly weren't safe. Instead of refusing to get into the car or trying to stop their buddy from driving, they went along for the ride—and it was their last. Life didn't offer them a "do-over." If you're faced with a similar decision, what will you choose? «

KNOW THE LIMITS

WALT BECKMAN
U.S. Army Combat Readiness/Safety Center
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As sport utility vehicles, pickup trucks and vans continue to grow in popularity with motorists, so do fatal accidents involving these types of vehicles. However, a little common sense and knowledge about the handling characteristics of your vehicle can help keep you safe when you've behind the wheel.

In fiscal 2007, the Army experienced 33 fatalities in SUVs, pickup trucks, vans and all-terrain vehicles. Of these, 14 victims were not wearing seat belts, and 13 of the accidents involved a rollover. Ten of these fatal accidents involved speed, and 17 involved loss of control. When you run the numbers, 42 percent of the fatalities were not belted in, 52 percent lost control of the vehicle and 39 percent of these accidents involved a rollover. Thirty percent of the SUV and pickup fatalities were speed related.

The Army has seen an overall increase in the number of SUVs and pickups Soldiers are buying, which is one of the contributing factors to the increase in fatalities for fiscal 2007. Inexperience with the handling and driving characteristics of these type vehicles is another.

To date in fiscal 2008, the Army has had three accidents in SUVs involving four fatalities—two drivers and two passengers. Two of these accidents involved rollovers that resulted in three fatalities; two passengers that were not belted in were ejected from a vehicle during the rollover and a driver that was wearing a seat belt had to be extracted from a vehicle.

All vehicles have unique driving and handling characteristics and must be driven accordingly. For example, driving a sports car is very different from driving an SUV. Even though that might sound obvious, many people don't realize it's true—especially new drivers. Passenger cars and SUVs are created and engineered for different purposes, and those differences should be acknowledged and respected. So, here are a few tips to help keep SUV drivers safe and allow them to enjoy their vehicles even more:

- The handling and maneuverability of SUVs is different from that of a car. There is a warning about this on the driver-side sun visor. Drivers should familiarize themselves with their SUV's braking, steering and overall handling performance by practicing in an empty parking lot.
- Avoid sudden or sharp steering changes. SUVs have higher centers of gravity so they

can go off-road; however, this higher center of gravity also makes it easier for SUVs to roll over. Allow more room to execute a passing maneuver and try not to pass in a curve since these bigger vehicles are taxed more in a curve. When purchasing an SUV, seriously consider opting for Electronic Stability Control (ESC). Credible fleet and other studies found ESC to be very effective in preventing rollovers and other out-of-control situations.

▪ Always wear a seat belt. Government crash data show that lower seat belt use, speeding and alcohol use are common factors in more than 90 percent of all rollover fatalities. Also, 72 percent of those killed in rollover crashes were not wearing seat belts. Drivers of SUVs and their passengers should take extra care to buckle up.

▪ Learn to check the rear- and side-view mirrors frequently. Constant situational awareness is important to avoiding problems.

▪ Slow down, since most people (not just SUV drivers) drive too fast. Driving slower and more defensively allows more time to react in an emergency situation. It's also less stressful.

▪ An SUV handles differently depending on how it's loaded. Don't carry too much weight, because overloaded vehicles are more likely to roll over. Cargo and extra passengers further raise the center of gravity. Slow down even more when the vehicle is heavily loaded.

▪ Know whether the SUV has antilock brakes (most new SUVs do). If so, when making a quick stop, drivers should stomp on the brake pedal, stay on it with firm pressure (don't pump them like in an older vehicle) and steer the vehicle where they want it to go.

▪ Many SUVs have four-wheel drive, which provides more traction in mud, snow, ice or rain. That's a key reason many people buy SUVs. However, just because a vehicle can maneuver better in inclement whether doesn't mean it will stop quicker than a passenger car. In fact, the larger and heavier the SUV, the more distance it will take to stop. Drivers of SUVs should adjust the speed and distance accordingly between their vehicle and the vehicle in front of them.

▪ Because SUV drivers sit higher than other motorists and have a better view ahead, they may tend to follow other vehicles more closely. Again, heavier vehicles like SUVs need more room to stop than cars.

▪ Consider other drivers. While SUV drivers can see farther ahead, those beside or behind them cannot. And because they can't see through the SUV driver's windshield, they have less warning when that SUV is going to stop. Be aware of all the vehicles in traffic and be courteous.

▪ Avoid developing a "road warrior" mentality. A bigger vehicle can give some drivers false confidence that they're protected by sheer size or by four-wheel-drive traction. Overconfidence in a vehicle's abilities can lead to serious consequences and a bad image for SUV owners.

▪ Vans, SUVs and pickup trucks, because of their larger size, have a "blind spot" within a few feet of the rear of the vehicle. For this reason, it is important to always check around the vehicle for small children or obstacles that drivers might not otherwise see from behind the wheel before they leave. Also, drivers should always turn their heads and look before changing lanes; don't rely solely on mirrors.

It's likely SUVs, pickups and vans will remain a force on the nation's highways. For those drivers who prefer to hit the open road in one of these vehicles, take the time to learn about its handling, be considerate of other motorists and, above all, buckle up! ■

Information for this article was gathered from the SUV Owners of America, the Insurance Institute for Highway Safety, the National Highway Traffic Safety Administration and the U.S. Army Combat Readiness/Safety Center.

> "Passenger **CARS** and **SUVS** are **CREATED** and **ENGINEERED** for **DIFFERENT** purposes, and **THOSE** differences **SHOULD** be **ACKNOWLEDGED** and **RESPECTED.**"

LOST

AVIATION

OH-58

CLASS A

D(R) Model

The aircraft experienced a low rotor condition during main rotor RPM auto-rotational check and impacted the runway. The maintenance test pilot and maintenance technician suffered recoverable back injuries. The aircraft was destroyed.

CLASS C

The aircraft exceeded engine power turbine speed (NP) limitations (114 percent for 16 seconds) during a full authority digital electronic control manual/rotor RPM warning maintenance check.

UH-60

CLASS A L Model

The aircraft main rotor blade contacted the Persistent Threat Detection System (PTDS) aerostat cable during departure from a forward operating base. The PTDS was recovered with damage. The aircraft revealed tip cap damage to one main rotor blade.

CLASS C

The aircraft window jettisoned during flight and struck the tail rotor. The window was later recovered.

CLASS C

Post maintenance test flight inspection revealed damage to one main rotor blade. The blade deice cable was not connected and was associated with the damage.

FOLLOWING PROPER PROCEDURES MAY HAVE PREVENTED THIS COSTLY INCIDENT. AN OLD SAYING REVISITED: "HASTE MAKES WASTE."

UAS

MQ-5A

CLASS A

The aerial vehicle operator (AVO) lost signal during flight and the system crashed.

RQ-7B

CLASS C

The tactical UAS failed to respond to ground control station commands during landing and incurred damage upon contact. The system was recovered.

RQ-11

CLASS C

The AVO lost global positioning system link and operational control of the system shortly after launch. The system could not be located.

GROUND

ACV

CLASS A

A Soldier suffered a permanent total disability when the M1117 he was driving became airborne after cresting a hill and touched down hard, nose first. The Soldier was participating in driver familiarization training at the time of the accident and was wearing a seat belt.

CLASS B

Two Bradley Cavalry Fighting Vehicles were damaged when they collided during night vision driver training. Ten Soldiers aboard the vehicles suffered minor injuries.

AMV

CLASS A

Two Soldiers were killed and two others were injured when the M1025 they were riding in was struck from behind by an 18-wheeler traveling at a high rate of speed. The 18-wheeler pushed the M1025 off the roadway, causing it to overturn.

CLASS B

Two Soldiers were injured when their M977 Heavy Expanded Mobility Tactical Truck lost its braking capabilities and ran off a roadway. A ratchet strap was believed to have damaged the air supply hose to the brakes after it fell through a hole or gap in the truck bed and wrapped around the driveshaft.

A Soldier suffered a permanent partial disability injury when he was struck by a HMMWV. The Soldier was attempting to ground guide the vehicle when the driver lost sight of him.

Personnel Injury

CLASS A

A Soldier was killed and another was injured in an explosion. The Soldiers were collecting the remains of a TCN JP8 tanker that had burned earlier, when it exploded. The circular end cap of the tanker blew off, striking one Soldier in the head and killing him. The other Soldier suffered burns and cuts.

ARMY AIRCRAFT LOSSES

Fiscal 2002 to Present

through January 19, 2008

AH-64A/D	11/50
U/MH-60A/L	8/27
C/MH-47	7/16
OH-58D	11/25
TOTAL	37/118

ARMY GROUND LOSSES

Fiscal 2008

through February 19, 2008

AMV	7/7
ACV	2/0
PERSONNEL INJURY includes weapons handling accidents	14/13
FIRE/ EXPLOSION	3/3
PROPERTY DAMAGE	1/0
TOTAL	27/23

A Soldier was killed when he was struck in the chest by a round from another Soldier's M9 pistol. The Soldiers were clearing their weapons at the time of the accident.

DO YOUR SOLDIERS PRACTICE PROPER WEAPONS CLEARING PROCEDURES, INCLUDING MUZZLE AWARENESS?

A Soldier died from the second- and third-degree burns he suffered after his tent caught fire. It is suspected that an unknown component of the electrical system within the tent either overheated or came loose, causing a spark to ignite combustible material.

A Soldier died after collapsing during organized physical training.

A local national civilian was fatally injured when he was struck by a round that traveled beyond a firing range where a unit was conducting live-fire training.

CLASS B

A Soldier's left ring finger was amputated when he slipped while trying to dismount an RG-31 Mine Resistant Ambush Protected vehicle after performing preventive maintenance checks and services. The Soldier was wearing a ring and was not wearing gloves at the time of the accident.

DO YOUR SOLDIERS REMOVE WATCHES, RINGS AND OTHER JEWELRY WHEN THEY'RE CONDUCTING PMCS?

A Soldier's finger was amputated while he was attempting to adjust the forks on a forklift.

DRIVING

POV

CLASS A

A Soldier was driving a vehicle with his wife, also a Soldier, and their child riding as passengers when he collided head on with a local national vehicle going the wrong way. Both Soldiers were fatally injured.

A Soldier was driving his sedan when he struck a utility pole. The Soldier, who was not wearing his seat belt, was ejected from the vehicle and died from his injuries.

A Soldier was driving his sedan when it left the roadway, struck a drainage ditch and overturned several times. The Soldier, who was speeding, unbelted and intoxicated, was ejected from the vehicle and suffer fatal injuries.

DO YOUR SOLDIERS UNDERSTAND THAT MIXING SPEED, ALCOHOL AND THE FAILURE TO WEAR SEAT BELTS CONCOCTS A DEADLY "COCKTAIL"?

A Soldier was driving his vehicle in snow and ice on an interstate when he was involved in a 30-vehicle collision and killed.

A Soldier was riding as a passenger with her husband in their minivan when they were involved in a multi-vehicle collision on an icy road. The Soldier was fatally injured.

HAVE YOU EXPLAINED TO YOUR SOLDIERS THE DANGERS OF WINTER DRIVING?

POV DRIVING LOSSES

Fiscal 2008

Class A accidents/Soldiers killed

CARS	17/17
SUV/JEEPS	5/6
TRUCKS	2/2
MOTORCYCLES	15/15
OTHER*	2/2

TOTAL DEATHS

07 37 y 37

DON'T PUSH YOUR LUCK

CLASS A

A Soldier was fatally injured when he was ejected from his pickup after it left the roadway and overturned several times upon entering a ditch. The Soldier was not wearing his seat belt.

A Soldier on post-deployment leave was driving his sport utility vehicle (SUV) when a large pickup crossed the center divider and hit the Soldier's vehicle head on, instantly killing him.

A Soldier was driving his vehicle when he struck a moose that had entered the roadway. The Soldier died four days later from his injuries.

POM

CLASS A

A Soldier was approaching an intersection and slowing to allow another vehicle to turn when he was struck from behind by a pickup truck. The Soldier died three days later. The Soldier was wearing a helmet but had not attended Motorcycle Safety Foundation training.

A Soldier was operating his motorcycle when he hit a curb, struck a light pole and then was ejected from his bike. He was transported to a local hospital, where he later died.

CLASS B

A cadet was on leave and operating his newly purchased POM. He reportedly attempted to pass vehicles negotiating a left turn at an intersection and collided with the side of a POV, resulting in permanent partial disability injuries.

ATV

CLASS A

A Soldier was on leave when he suffered fatal injuries while operating an all-terrain vehicle that reportedly left the roadway and struck the rear end of a parked tractor-trailer.

Personnel Injury

CLASS A

A Soldier had stopped his vehicle along the road to assist motorists who had been involved in a crash when an SUV slid on the icy roadway and struck and killed the Solder.


Spring
has Sprung
and
Motorcycle Safety Awareness
Month is on the Horizon
ARMY SAFE
is ARMY STRONG
U.S. ARMY
ARMY STRONG.
https://crc.army.mil

GETTING HITCHED: WHAT TO KNOW BEFORE YOU TOW p. 12

KNOWLEDGE

VOL 2 APRIL 2008

OFFICIAL SAFETY MAGAZINE OF THE U.S. ARMY

RULES TO LIVE BY p. 5

- GOT PPE? p. 10
- RIDING SAFE, RIDING FREE p. 16
- SURVIVING BROWNOUT p. 22

+

ATV SAFETY p. 19

ANTENNA DO

ARMY STRONG

https://erc.army.mil

KNOWLEDGE

OFFICIAL SAFETY MAGAZINE OF THE U.S. ARMY

contents

SAFETY T... THE AGES

Are you between the age of 18 and 30? Is this article pertinent to you?

Do you ever feel Army leadership pens articles that are about you, rather than for you? Talk at you rather than to you? While you might think this is true, rest assured, the U.S. Army Combat Readiness/Safety Center writes articles especially for you.

The reason for this?

You (18 to 30-year-olds) are esteemed Teammates. You have a critical part in our Army's successes, both on and off the battlefield. We, as an Army team, haven't and won't be successful in our missions without you. Your presence and contributions are invaluable and the cornerstone of our successes.

What else do we know?

We know that you are all Soldiers with opportunities to be outstanding and influential Leaders. It does not require a high rank to make a Leader, but rather a Leader is a Soldier or Army member with an

U.S. ARMY COMBAT READINESS/SAFETY CENTER

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Mission statement: USACRC supports our Army at war by collecting, storing, analyzing, and disseminating actionable information to assist Leaders, Soldiers, Families, and Civilians in preserving/protecting our Army's combat resources.

We welcome your feedback. Please e-mail comments to **knowledge@crc.army.mil**.

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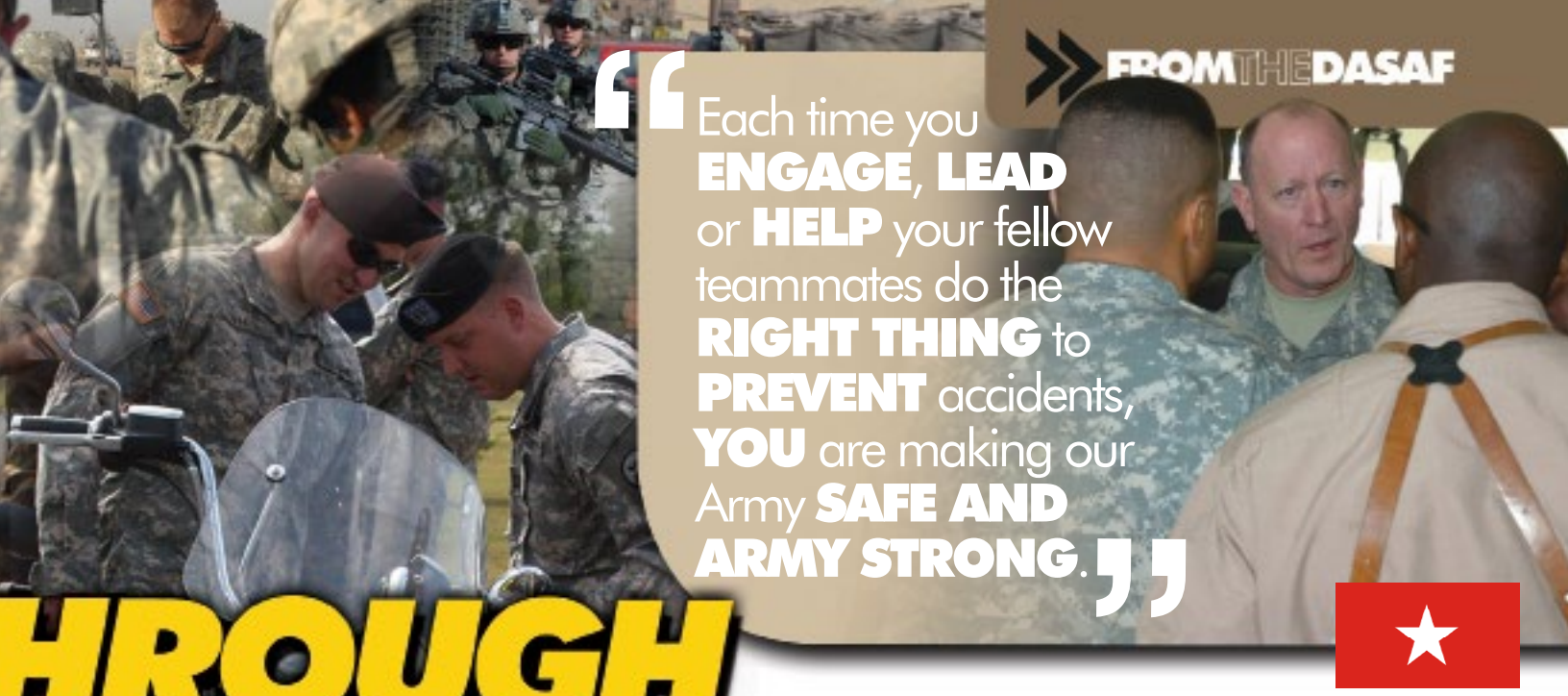


> "Each time you **ENGAGE**, **LEAD** or **HELP** your fellow teammates do the **RIGHT THING** to **PREVENT** accidents, **YOU** are making our Army **SAFE AND ARMY STRONG**."

HROUGH S

understanding and willingness to engage and do the right thing. This type of leadership can, does and continues to save lives.

Safety transformation is the shift in mind set from an older, reactive safety culture to a new, predictive mind-set that incorporates risk management practices and actions into daily activities. While our Army continues through a safety transformation, your actions, leadership and continued commitment are invaluable. You and your peers are integral to this transformation. Each time you engage, lead or help your fellow teammates do the right thing to prevent accidents, you are making our Army safe and Army strong.

We know our Warriors live and operate on the leading edge, however they should not be alone on that edge. Leaders must be there with them, stay engaged and take accountability. There is no such thing as an anonymous Leader. Leaders commit.

We know when accountable Leaders like you engage, the results immediately save lives and promote change in our Soldier's culture, instinct and insight into the Army's future.

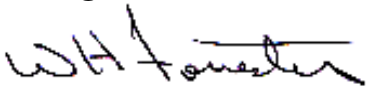
We know Preliminary Loss Reports (PLR) often reveal preventable mishaps where engaged Leaders could have made a difference. Someone always knows – someone knows when a platoon member just bought a motorcycle but never completed required training . . . someone knows when an aviator's reputation is to "cowboy" aircraft . . . someone knows when Soldiers routinely fail to buckle up when driving. That "someone" who knows must step up and engage; it will save lives.

We know we "Never Leave a Fallen Comrade." By engaging at the lowest level, you can prevent the fall of a fellow Soldier. The tools are there and the window of opportunity to effectively impact Soldiers is now. Successful safety preventive measures and actions are seamlessly woven into the fabric of our Army's culture.

So…my younger friends and fellow Soldiers. This is for you, about you, and enlists you as a fully-involved partner in making our Army a safer place to live, work and fight.

Your dedication to duty is unmatched - always remember, what you do right now changes everything.

Army Safe is Army Strong!!



William H. Forrester
Brigadier General, USA
Commanding

"Using **'TOUGH LOVE'**—imposing **STRICT STANDARDS** and **DISCIPLINE** will **SAVE LIVES.**"

RULES TO LIVE BY

There is a disturbing new trend in our military—some units are experiencing the loss of more Soldiers at home station than deployed to combat!

Multi-National Force-Iraq Command Sgt. Maj. Marvin Hill once told me a Soldier knows what is important to a unit within an hour of arriving. If a unit has standards and discipline, it is very apparent. However, if Soldiers sign in and the unit leaves them to their own devices, they'll take it that nobody cares enough to ensure they don't get into trouble. Once they have gotten that message, it can be hard to make them believe anyone takes their off-duty actions seriously. We know when an attitude like that sets in, it can be hard to overcome because Soldiers don't afford Leaders opportunities at second and third chances.

So how do we make this work for the safety of Soldiers? When it comes to our married Soldiers redeploying home, the U.S. Army Combat Readiness/Safety Center (USACRC) has worked with Morale, Welfare and Recreation (MWR) to create the Family Engagement Kit. The kit provides spouses with useful tools and resources to help them care for their Soldiers as they return. And for single Soldiers, there is the Better Opportunities for Single Soldiers (BOSS) Engagement Kit.

During a recent redeployment video teleconference (VTC), Maj. Gen. Rick Lynch, commander of the 3rd Infantry Division, stated, "All accidents are preventable and predictable." I couldn't agree more with him and his philosophy. As I speak with Soldiers, Families and Civilians, it becomes very apparent we are headed in the right direction in fighting and winning the Global War on Terrorism. Nearly seven years into this fight, we are seeing the fruits of our labor and appear to have turned the corner. Winning the war on accidents at home station is another story. Two-thirds of all accidents happen at home station during off-duty hours. Why is it that it's safer, statistically speaking, to drive on duty and in combat than on the streets back at home station? Most would say that engaged leadership directly influences our on-duty accident numbers. If that is true, then why doesn't engaged leadership work off-duty as well? So I ask each of you, how can we transition the great work we do during deployments back to home station?

Recipe for Safe Home Station Operation

- Using "tough love"—imposing strict standards and discipline will save lives. Because of that, we need to plan for redeployment by assessing the risks much the same as we do for combat. Assess the risks, which include anything that will take a Soldier from our ranks. Conduct a VTC with your headquarters, BTC's home station and safety center 90 days out.
- Have your rear detachment advise you about the risks at home station seen following previous redeployments.
- Prepare to receive and account for Soldiers. Most Soldiers are lost 30 days prior to redeployment till 30 days after.
- Be proactive and energize your garrison's MWR as early as possible to provide Soldiers and Families with events to do on the installation after block leave. It's your city; keep your constituents at home, where you can influence their behavior while having fun.
- Provide predictability. Predictable training and time off during reset doesn't waste Soldiers time and provide Families with knowledge of when they can expect them home.
- Monitor "Leader-to-led" and address leadership gaps.
- Emplace mentorship/certification programs to train and address deficiencies throughout your ranks
- Train safety as part of every mission and seek feedback from your organization during the after-action review (AAR) process.
- Conduct tough, realistic individual training as early as possible and incorporate driving training to solidify teams.

Move left of the boom so redeploying Soldiers don't become statistics. Use your influence as Leaders to train Soldiers to be safe on duty so they'll choose to be safe when they're off duty. Remember, what they do on the installation, you can influence—what they do off the installation you have to react to.

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

BREAKING THE CYCLE

COL. STEPHEN C. SMITH
Directorate of Evaluation and Standardization
U.S. Army Aviation Warfighting Center
Fort Rucker, Ala.

As director of the Directorate of Evaluation and Standardization (DES) at Fort Rucker, I get to view our branch from a perspective that many leaders never have the opportunity to see.

As a battalion commander in the 101st Airborne Division, I was able to employ an attack battalion in combat and see our branch from a division, brigade and battalion perspective. As a staff officer on the Headquarters, Department of Army (HQDA) staff, I was able to see how the Army runs and how our branch fits into the scheme of maneuver from the corporate headquarters perspective. I'm now an old colonel, yet I get to peer into the cockpits of our individual aviators and aircrews, whether they are in a unit deployed downrange or a student on the flight line at Fort Rucker. All of these perspectives give me the unique opportunity to develop my own thoughts on the state of our branch and some things we need to do to ensure the long-term health of Army Aviation throughout what is sure to be a protracted war.

The Realities of the GWOT

What I've seen is no surprise to many of you out there. I call it the "Realities of the Global War on Terrorism (GWOT)." As it dawned on us that we were in

this fight for the long haul, the Army leadership determined we needed to develop a plan to ensure the readiness of our fleet. This led to the creation of the National RESET program. As we started losing aircraft in combat, we realized we needed to improve their survivability. This led to the requirement to PRESET our aircraft prior to deployment to ensure they had the latest modifications. Both of these programs were, and are still, necessary for the health and survivability of our aircraft, but they have taken a toll on our ability to train our crews and get them ready for the rigors of combat. These challenges, along with short dwell times for our Soldiers, have forced commanders to conduct hasty readiness level progressions on their aviators to make as many crews available as they can because of the tremendous demand on aviation in both Operations Iraqi Freedom and Enduring Freedom. Commanders are also driven to hold onto their pilots in command (PCs) and not allow them to attend instructor pilot (IP), tactical operations (TACOPS), safety and maintenance test pilot (MTP) courses because they don't want to lose their immediate skill sets as they prepare for the next deployment.

What our units are experiencing downrange is an insatiable appetite for our capabilities. Every unit seems to be outflying the unit it has replaced. It's not abnormal for our aviators to fly 70 to 100 hours per month while deployed. Our young aviators are logging tremendous amounts of flight time in combat, but in a very narrow mission set. Additionally, we see young aviators flying almost all of their time with other young aviators. This means they are learning from each other most of the time. How do we know they are learning the right lessons?

> "What our units are experiencing **DOWNRANGE** is an **INSATIABLE APPETITE** for our capabilities. **EVERY UNIT** seems to be **OUTFLYING** the **UNIT** it has **REPLACED**."

The Trends

The commanding general (CG) of the U.S. Army Aviation Warfighting Center is the proponent for the U.S. Army Aviation Standardization Program. The DES is the CG's arm to ensure standardization across our formations. Additionally, Maj. Gen. Virgil L. Packett put the onus on DES to identify trends in our branch. What we've seen through the course of our visits are aviation units with some absolutely amazing accomplishments. However, we've also seen negative trends that we believe have the potential for damaging the long-term readiness of our branch.

One of the most common negative trends we continue to find is the excessive use of waivers. As we settled into the fast pace of this war, we changed Army Regulation (AR) 95-1, *Flight Regulations*, to give brigade commanders the authority to grant unit waivers. We also gave them the authority to establish their own self-start training date upon their return from theater because of the backlog of aircraft in RESET and PRESET. Many commanders never established the start training date. As a result, we've had, and still have, aviators leaving one unit with a waiver of all aircrew training program/annual proficiency and readiness test (ATP/APART) requirements and joining another unit preparing to deploy and requiring yet another unit waiver. We're growing a generation of aviators who are very good at conducting operations in a narrow mission set, but are not as well rounded as our aviators prior to this war. We have captains in the Captain's Career Course and IP candidates at Fort Rucker who have never completed an APART in their careers.

Some of the areas we find that are routinely weak are instrument and gunnery skills. Weak instrument skills are probably not a surprise to you because we all know how difficult it is to train instrument tasks in combat. Atrophy of gunnery skills

FYI

A team of personnel from the U.S. Army Aviation Warfighting Center Directorate of Evaluation and Standardization, supported by the U.S. Army Combat Readiness/Safety Center, have just returned from Iraq. They were heavily engaged in conducting assistance visits with multiple aviation brigades and will be providing an update to the field in an upcoming edition of *Knowledge*.

in combat is counter-intuitive, but it is real. Crews are not necessarily employing their weapons systems routinely and when they are, their videotaped engagements aren't always critiqued by an experienced aviator in the unit. Surprisingly, although we find weak instrument and deteriorating skills, we still see units with low utilization rates of their simulation devices.

The Results

Some might say that much of what I've mentioned above just doesn't matter; we're training our aviators on the tasks they need to execute in combat and that is good enough. However, this statement is only partially correct. Yes, we train our aviators for Iraq if they are deploying to Iraq and for Afghanistan if they are deploying to Afghanistan; but we are still losing aircraft and Soldiers in places like Alabama, Georgia, Tennessee, Texas, Utah and Europe. Some of these accidents are due to inadvertent instrument meteorological conditions (IIMC) by aviators lacking instrument proficiency, while others are due to human factors by aviators whose skills have eroded, who lack discipline or who have just become complacent. I believe many of these accidents can be traced back to the "Realities of GWOT."

What Can We Do to Break the Cycle?

If the realities of GWOT are the root cause of our accident trends, then what can be done to break the cycle? We can't call a timeout. The enemy has a vote in that. We may not be able to completely change the realities of GWOT, but aviation leaders at all levels can influence them by understanding we are in this war for the long haul and we can't continue to simply meet the immediate needs of combat.

Professionally Develop our Warrant Officers

We must send our experienced PCs to schools so we aren't caught in an endless cycle of never having enough IPs, MTPs, TACOPS and safety officers. If we fail to send our aviators to professional schooling, we will never have enough trained instructors to progress our young aviators. The same logic applies to our test pilots; if we don't grow them, we end up having to use them as mission pilots, and then lean on them to do their MTP and maintenance test flight evaluation duties in the short time between missions.

Continue to Train in Combat

We have to get our aviators into our simulation devices, even if it means putting them in an aircraft and flying them to the device. Simulation devices provide the only means to practice multiple, simultaneous emergencies in an aircraft, and they are one of the best tools for helping prepare our aviators for potential IIMC situations. We must ensure our junior aviators are periodically being paired with more experienced aviators. By doing that, you are, in effect, carrying out a No-Notice program. Sometimes the only time a junior aviator gets to fly with a chief warrant officer 4 or 5 during a deployment is when a DES standardization IP shows up for a

visit. Additionally, we must continue to conduct aircraft and door gunnery training, even while we are deployed.

RESET Our Aviators

When our units redeploy, we must ensure our aviators are fully prepared to return to the airspace they will train in. The only real way to determine if they are ready is to give them a proficiency flight evaluation. However, being ready isn't just being able to fly the aircraft; it also includes understanding the airspace and weather patterns of your home station.

Finally, we must get back to the basics and make sure leaders and trainers at all levels are enforcing the standards that have made our branch so successful. We have to remember the ATP is a training program, not just another requirement to be met. We must give our aviators the opportunity to conduct as many of the requirements set forth in AR 95-1, Training Circular 1-210, *Aircrew Training Program Commander's Guide to Individual, Crew, and Collective Training*, and our aircrew training manuals as possible, in garrison or in combat. This will not only ensure we have well-rounded aviators, but also allow our branch to continue providing our Soldiers the capabilities they have come to rely on in combat.

YOU DOWN WITH PPE?

DENNIS KEPLINGER
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Fort Rucker, Ala.

As a worker was filling a small container with acid from a large drum, the chemical splashed off the bottom of the container and into the worker's eyes. After flushing his eyes at the worksite, he was treated at the emergency room. The worker suffered permanent damage to his vision in one eye and lost several days of work. At the time of the accident, he was not wearing eye protection, as required by signs posted at the worksite, and his supervisor did not enforce the standard.

A supervisor once told me he was having a problem getting his employees to wear their personal protective equipment (PPE). Common excuses included the PPE didn't fit properly or was uncomfortable or the safety goggles were dirty. Employees also claimed they were in too much of a hurry to put on PPE and had an "it-won't-happen-to-me" attitude toward accidents. My response to the supervisor was, "Well, can you get them to come to work on time?"

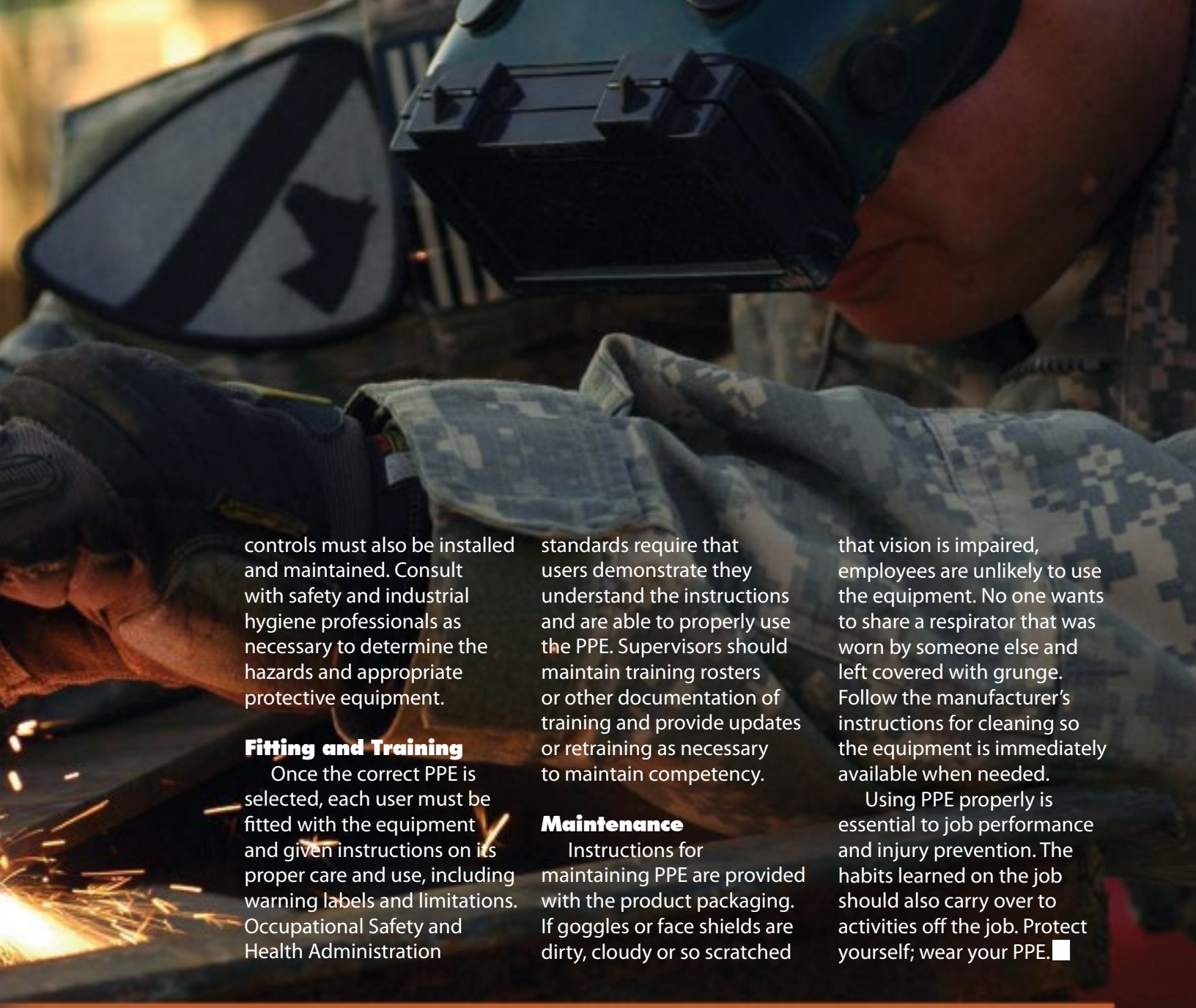
Supervisors have a responsibility to enforce safety standards. When employees understand the hazards, have properly fitted PPE and are adequately trained how to use it, they are more likely to perform to the standard. In areas where PPE is required to provide protection against a hazard, its use is not optional; it's a part of job performance.

When to Use PPE

Often, PPE serves as the last line of defense between the worker and a hazard. Where feasible, engineering or administrative controls are used to eliminate or reduce hazards. However, for many operations, PPE is essential. Such operations include grinding, chipping, welding, handling or dispensing chemicals, painting or other tasks where workers may be exposed to chemicals, dust, fumes or other hazards with a potential for injury or occupational illness.

PPE Selection

PPE is selected based on the hazard(s) and work environment to provide protection against the highest level of each hazard. For example, acid and chemical handling may require use of chemical-protective goggles and a face shield to protect the eyes and face, as well as a protective apron or chemical-protective coveralls and gloves. However, protective devices may not necessarily provide all the needed protection. In addition to PPE, barriers, shields, guards and other engineering



controls must also be installed and maintained. Consult with safety and industrial hygiene professionals as necessary to determine the hazards and appropriate protective equipment.

Fitting and Training

Once the correct PPE is selected, each user must be fitted with the equipment and given instructions on its proper care and use, including warning labels and limitations. Occupational Safety and Health Administration standards require that users demonstrate they understand the instructions and are able to properly use the PPE. Supervisors should maintain training rosters or other documentation of training and provide updates or retraining as necessary to maintain competency.

Maintenance

Instructions for maintaining PPE are provided with the product packaging. If goggles or face shields are dirty, cloudy or so scratched that vision is impaired, employees are unlikely to use the equipment. No one wants to share a respirator that was worn by someone else and left covered with grunge. Follow the manufacturer's instructions for cleaning so the equipment is immediately available when needed.

Using PPE properly is essential to job performance and injury prevention. The habits learned on the job should also carry over to activities off the job. Protect yourself; wear your PPE. ■

CE HAZARD ASSESSMENT

Personal protective equipment is provided to protect against specific hazards identified through a workplace hazard assessment. This assessment normally includes a walk-through survey of the workplace to identify sources of hazards to workers, co-workers and visitors. The assessment should consider the basic hazard categories (as well as the possibility of exposure to several hazards at the same time):

- **Sources of motion (moving machinery or parts)**
- **Impact (falling or flying particles)**
- **Penetration (sharp objects, tool blades, sharp edges)**
- **Compression (rolling or pinching objects)**
- **Chemical exposure**
- **Biological contamination (blood-borne diseases)**
- **Heat or cold**
- **Harmful dust**
- **Light (optical) radiation**
- **Electrical hazards**

Note: Maintain written documentation of the hazard assessment and reassess workplace hazards as necessary to address new equipment or processes and to correct accident causes. The job hazard analysis is a commonly used tool to conduct the hazard assessment. Employee buy-in is more likely to occur if they are involved with identifying and assessing the workplace hazards.

GETTING PROPERLY "HITCHED"

PERRY WILDS
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As a kid growing up in south Florida, we used to go down to the boat ramps on weekends to see just how funny some people could be. It wouldn't be long before someone would show up towing a 28-foot cabin cruiser with an expensive car.

Although watching people try to back their new boat down the ramp was funny, watching them try to pull it out of the water was downright hilarious. Something about weight versus thrust versus traction. I'm not sure if that's a scientific formula, but I do know that people hate when kids laugh at them while their car is sinking. Hey, what can I say; we didn't have video games back then.

Ask anyone who regularly pulls a trailer and they will have at least one story about a trailer coming off its hitch, pushing them through a busy intersection, losing its brakes or suddenly getting blown into another lane of traffic. Most of these stories have a humorous side and an uneventful ending. For inexperienced drivers, however, some of these events end in disaster.

Here are a few things to consider before you tow a trailer:

> "**MAKE SURE** your **TRAILER HITCH** is the **RIGHT 'CLASS.'**"

- Know the towing capacity of the vehicle you will use to tow your trailer.
- Know the weight capacity of your trailer, trailer ball and trailer hitch.
- Know the proper technique for loading items in your trailer.

Let's break this down into three main areas: the tow vehicle, the trailer and weight distribution.

The Tow Vehicle

The tow vehicle and hitch must be capable of safely handling at least 15 percent of the gross weight of the trailer (total weight of the trailer plus contents). Fifth wheel trailers normally can carry up to 25 percent of their gross weight on their hitch. However, if you load a cargo trailer with all your household goods, hook it to your pickup and the headlights are aimed at the treetops, it may be a clue something is wrong.

Make sure your trailer hitch is the right "class." If you didn't know, there are five classes of trailer hitches—each designed to handle a certain maximum tongue weight and gross trailer weight. What can your vehicle handle? Maybe now is a good time to actually read your owner's manual. If you didn't know your vehicle had an owner's manual, maybe towing a trailer isn't for you. You also need to make sure your trailer ball

is the correct size and weight capacity. Yes, you could put a 1.5-inch trailer ball in a 2-inch receiver, but having your trailer pass you in traffic is seldom a good thing.

The Trailer

Know what the maximum gross weight of your trailer should be. The ball should be located so the trailer sits level when connected to the tow vehicle. Safety chains should be long enough so you can make tight turns without the chains binding and be crossed (right to left and left to right). This will help create a "saddle" if the tongue fails and will help maintain control while stopping. Be careful not to allow these chains to drag on the pavement as they can be ground down and weakened in a very short amount of time. Also, don't forget to retract the jack or stop halfway through the process of hooking up your trailer—you just might forget to finish the job! In addition, don't ever leave the receptor pin out of your trailer hitch—not even for a minute. And "NO," a screwdriver is not an acceptable substitute for a receptor pin in any circumstance!

Other important things to check are the wheels and lug nuts, wheel bearings, vehicle and trailer brakes and trailer lights.

Weight Distribution

This is one time where putting 10 pounds of junk in a 5-pound bag is not a good idea. When towing a trailer, it is critical to know how much weight you're towing and how it is distributed. Knowing how much weight you're towing allows you to determine if it is within the capacity of your vehicle. Making sure that weight is properly distributed in the trailer is critical to the way your rig will handle on the road.

While it would be easy to just put the heavy items over the axles, that doesn't always work. Sometimes a lot of little items can far outweigh a single large one. Also, top-heavy loads can cause problems when cornering and during hard braking. During hard braking, top-heavy loads tend to make the trailer "dive." This increases weight on the tongue while decreasing weight on the front axle just when you most need to steer and brake effectively. Center top-heavy items, or arrange the remainder of the load to act as a counterweight to minimize this effect.

Overloading a trailer beyond its rated capacity, even though it may be well balanced and seem to handle fine, is a very dangerous practice. Eventually, something is bound to fail—often with

dramatic and unpleasant results. What do I mean by dramatic and unpleasant? Just imagine your trailer coming loose and crashing into the free beer stand at a biker rally. You get the picture.

Your Responsibilities as a Driver

Towing a trailer imposes responsibilities similar to properly driving your car. You wouldn't think of letting your 10-year-old child practice driving during rush hour while text messaging a friend. Then why would you try to learn how to handle a trailer by fully loading it and taking it onto a busy road? Towing skills have to be developed, and the responsibility to be safe is one that should not be taken lightly.

Things to Know Before You Tow

- Use your transmission and brakes when pulling heavy loads up and down hills.
- Use extra care when parking on an incline; remember your trailer doesn't have a parking brake.
- Know what to do if your trailer begins to sway. Driving in windy conditions can make it difficult to stay in your lane on the road. Understand how the airflow from a passing tractor-trailer can affect your trailer and be ready for it.
- Perhaps the hardest skill of all—learn when it's best not to tow a trailer. «

I SHOULD'VE LISTENED

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Ever have trouble taking advice because you thought you knew better? I made that mistake the first time I tried towing a trailer on a cross-country trip.

It was December 1995 and I was towing a 5-by-10-foot trailer with a 1993 Toyota pickup. We're talking a 2.4-liter, four-cylinder engine with 113 screaming squirrels under the hood. The owner's manual said I could tow up to 3,500 pounds, and the fully-loaded trailer was supposed to max out at 2,800 pounds. I figured this would be no problem.

In one of my few lucid moments, I had the presence of mind to drive over to the dealership and ask their advice on how to handle this chore. I was, after all, driving from Georgia to New Mexico—a bit more challenging trip than hauling my johnboat to the lake.

The service manager advised me to stay out of fifth gear in my manual transmission. "OK," I said, mentally filing away this nugget of information in my "try-not-to-forget" file.

Anyway, once I got through Georgia and north of Birmingham, Ala., the roads leveled out. I figured, "Why not drive it in fifth? Everything seems to be OK. Maybe I can stretch a gallon of gas a mile or two further."

I was happy as a clam going westbound on Interstate 40 out of Memphis, Tenn. The little Toyota was ticking off the miles lickity-split. Shoot—I was even passing traffic! And to think, it was just me and my piddlin' little four-banger Toyota pickup.

After a stopover to spend Christmas with my folks in Little Rock, Ark., I was back on the road again. As I neared the Oklahoma border, I noticed my right foot was getting warm. When I put my hand on the transmission hump, it was scorching hot—I thought my engine was on fire!

I immediately pulled off the road and turned off the ignition. I ran around the truck to the shoulder and peered underneath the engine compartment, half expecting to see flames. Fortunately, there weren't any.

I let things cool off a bit and then drove to an exit and pulled off for dinner. About then, I recalled that little piece of advice the Toyota dealership service manager gave me. Since I couldn't find anything wrong with the truck to cause it to run hot, maybe it was something about running it in fifth gear.

When I got back on the road, I followed the advice and didn't go above fourth gear. It turned out the advice had been sound. My transmission hump stayed cool and, wonder of wonders, I actually got better fuel mileage! I guess it was like when I was a kid trying to peddle a 10-speed bike uphill in too high a gear. I bogged down and my legs ached—which is pretty much what I was doing to my truck's engine by running it with a heavy load in high gear.

Hmm . . . maybe I'll listen the next time someone knowledgeable gives me advice about towing! ■

RIDING SAFE

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It ought to be illegal for the bad actions of a few people to hurt the freedoms of many. Yet, that is exactly what is happening in the good ole USA among motorcyclists. The few that fail to wear helmets or choose to ride recklessly are causing insurance rates to skyrocket for the rest of us.

...EANS RIDING FREE

And that's not the worst of it. It is rumored that performance limitations may be placed on motorcycles. For example, we may see mandatory speed and horsepower limits. Right now, most of us aren't willing to risk further controls being caused by the reckless nature of our brother and sister bikers. The problem is these changes may be forced upon us if we don't do something about the problem.

I recently read an article by Kent Kunitsugu in the December 2007 issue of *Sport Rider* magazine in which he said, "Sportbikes don't kill riders, and they are no more dangerous than other motorcycle types." He is correct in both instances. Like the old gun control argument, "Guns don't kill people—people kill people;" sportbikes don't kill riders, inexperienced riders kill themselves.

There is a popular misconception that most riders are killed by other motorists rather than as a result of their own mistakes. However, that's not what the facts show. Sportbike accidents currently account for 87 percent of Army motorcycle fatalities. Of that number, very few involved a second vehicle. This problem is not limited to the Army; the other services are seeing the same trends.

How can we deal with the speed and skill-based errors that are killing our riders? Although education is a big part of the answer, it is not the stand-alone solution that many are looking for.

There is a distinct difference between riding fast and riding well. To improve a rider's skills involves both educating and encouraging them to make better decisions. To do that, riders need a safe environment where they can measure their skills against their machines' performance. One of the best ways to do that is through track days where riders can go fast while also being safe. Track days expose a rider to a structured environment that is liberated from the free-for-all mentality of the street or the dogfight mentality of racing.

> "**SPORTBIKES DON'T KILL** riders, **INEXPERIENCED** riders **KILL** themselves"

FYI

Interested in finding out just how good you could be on a sportbike? How about twisting the throttle and digging deep in the turns on the Talladega Grand Prix Raceway and other great tracks in America? Just visit the Northeast Sportbike Association's (NESBA) Web site at http://www.nesba.com/ to check out the opportunity nearest you. Want to keep climbing the learning curve as a rider? Check out the Motorcycle Safety Foundation's Web site at http://www.msf-usa.org/. You'll find training opportunities to hone your skills both on and off the road.

Many riders are reluctant to admit their shortcomings until their skills are tested on a track. While sportbikes are no more dangerous than other motorcycles, they are capable of much higher speeds and handle and brake differently compared to other bikes. Unfortunately, without the experience of riding on a track, many riders aren't safely exposed to those differences.

Kevin Schwantz, 1993 500cc world champion, believes that while great motorcycle riders are born, others can be taught the skills to succeed. In an article in the August 2007 issue of *Rider* magazine, Schwantz told a riding class, "We're not here to make one more racer; we're here to save one more life." Amy and Paul Kobussen, sportbike riders who had completed a track day, said that after the experience they no longer felt the need to ride as fast on the street.

As riders, if we care about our sport, we must take a serious look at its safety record. Since most of our accidents are single-vehicle crashes, it is evident Soldiers can benefit from track day experiences. Track experience has nothing to do with age or maturity. Rather, it has to do with riders understanding their capabilities and limitations, along with those of their sportbikes. Not recognizing those factors has contributed to many sportbike accidents.

This brings us back to the point of this article. We must confront the problem of riders taking unnecessary risks on the street. Those of us who have experienced a track day have a duty to mentor those who haven't. We need to offer Soldiers a chance to hone their skills on a track before they become statistics in our database. If we fail to do that, we could face restrictions that would forever change the face of motorcycling. It's time for all of us who ride to become part of the solution rather than part of the problem.

PENTAGON TO HOST MOTORCYCLE EVENT

The 2008 National Capital Region Joint Services Motorcycle Safety Event is scheduled for May 2 and 3. The event, which will be held in the north parking lot of the Pentagon, will include a motorcycle skills demonstration, motorcycle rodeo and a best bike contest. In addition, the Motorcycle Safety Foundation will demonstrate its Safe Motorcyclist Awareness and Recognition Trainer (SMART). The event will end on May 3 with a group ride.

The event will open with a discussion of current trends in motorcycle accidents and their effect on military readiness by Tad Davis, Deputy Assistant Secretary of the Army for Environment, Safety and Occupational Health. The event's goal is to raise motorcycle safety awareness, provide a model safety awareness day that can be adapted for use at other installations and showcase Department of Defense and industry safety initiatives.

The motorcycle skills demonstration will include braking tests, maneuvering in tight locations and turning skills to avoid highway hazards. The motorcycle rodeo will include a slow-ride drag race to determine which rider can best maintain control at low speeds. In addition, there will be a course where riders will weave as quickly and smoothly as possible through a series of cones and then attempt to stop with their front tire inside a 2-foot-square box.

Riders interested in participating can register online at http://www.upcomingevents.ctc.com/NCRJS_MotorcycleSafetyEvent_registration.htm. Registration closes May 1.

For more information, contact the U.S. Army Combat Readiness/Safety Center at 334-255-3039 or DSN 558-3039. A short video of last year's event can be viewed at https://crcapps2.crc.army.mil/dtfnewsletter/docs/Pentagon_Event_Army.wmv.

MATCH THE RIDER TO THE RIDE

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Fort Rucker, Ala.

If you have a youngster who is about ready to ride an all-terrain vehicle (ATV), there are special considerations you should keep in mind. Although a child may be the recommended age to ride a particular size ATV, not all youngsters have the strength, skills or judgment needed to operate one. You should supervise your youngster's operation of the ATV at all times and permit continued use only if you determine they have the ability and judgment to operate it safely. You should read *Parents, Youngsters and All-Terrain Vehicles*, which is available from the All-Terrain Vehicle Safety Institute (ASI). You can locate the pamphlet and an ordering form online at http://www.atvsafety.org/. For more information about ATV safety, visit ASI's Web site or call the Consumer Product Safety Commission at (800) 638-2772 or the Distributors' ATV Safety Hotline at (800) 852-5344.

Before You Ride

The ATV Safety Institute's Golden Rules:

1. Always wear a helmet and other protective gear.
2. Never ride on public roads because another vehicle could hit you.
3. Never ride under the influence of alcohol or other drugs.
4. Never carry a passenger on a single-rider vehicle.
5. Ride an ATV that's right for your age.
6. Supervise riders younger than 16; ATVs are not toys.
7. Ride only on designated trails and at a safe speed.
8. Take an ATV RiderCourse; call toll free at 800.887.2887, or go to www.atvsafety.org.

Proper Riding Gear

- Approved helmet—Helmets should have stickers on the inside or outside confirming compliance with the standards of the U.S. Department of Transportation or the Snell Institute
- Eye protection—Protective goggles or face shield
- Gloves—Off-road style is best
- Long-sleeved shirt/jacket—Off-road jersey; shoulder pads/chest protector are encouraged
- Over-the-ankle boots—Off-road-style, over-the-ankle ATV boots offer the best protection

Be a Responsible Rider

The ASI encourages riders to always:

- Know the state laws and respect the environment and rights of others.
- Remember that riding an ATV is a privilege and it is our responsibility as riders to ensure we ride responsibly and wear the proper personal protective equipment at all times.

Editor's Note: The information for this article was provided courtesy the ASI, a not-for-profit division of the Specialty Vehicle Institute of America.

> "**SUPERVISE** riders **YOUNGER THAN** 16; ATVs are not **TOYS**"

DASAF CRM AND GUARDIAN AWARDS ANNOUNCED FOR 2007

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

Brig. Gen. Bill Forrester, director of Army safety (DASAF) and commanding general of the U.S. Army Combat Readiness/Safety Center, recently announced the recipients of the DASAF Composite Risk Management Award and U.S. Army Safety Guardian Award for 2007.

"These awards showcase heroic acts by units and individuals in preventing Soldier and Civilian losses in our formations, as well as in the Army workplace," Forrester said. "I appreciate the efforts made by the submitting units in recognizing these outstanding individuals and units."

The 3rd Infantry Division (primarily based at Fort Stewart, Ga.) and 2nd Battalion, 502nd Aviation Regiment (Coleman Barracks, Germany), earned the DASAF Composite Risk Management Award, which is given to organizations or individuals who have made significant contributions to Army readiness through composite risk management (CRM). Submissions can be forwarded any time during the year.

According to Forrester, the 3ID demonstrated exemplary leadership and employed the tenants of composite risk management to reduce the command's accident fatality rate.

"The command implemented proactive measures such as focusing on motorcycle safety, clearing tree-lined roads and installing safety signs, renovating an off-duty facility on the installation for Soldiers in an effort to combat drinking and driving, and emplacing an extensive safety message campaign," Forrester said. "This dedication to safety awareness and the preservation of vital Army resources deserves recognition."

The 2-502nd Aviation Regiment showcased its muscle and skill by moving the 82nd Combat Aviation Brigade and 10th Mountain Combat Aviation Brigade aviation assets at Rota, Spain from Dec. 27, 2006, to Feb. 20, 2007. The Soldiers, civilians and contractors of the 2-502nd loaded and unloaded 50 C17s to move 100 helicopters to and from theater using three ships and working more than 7,600 man hours in order to support the unit. The 2-502nd used the five-step CRM process to safely execute its mission without experiencing a Class A, B, C or D accident.

In addition to the 3ID and 2-502nd, Mr. Se-Hwan Pak, Installation Management Command-Korea Morale (IMCOM), U.S. Army Garrison, Camp Humphreys, Korea; Mr. Michael B. Moore, U.S. Army Space and Missile Command, located at Redstone Arsenal (Huntsville, Ala.); IMCOM-Korea Morale Welfare and Recreation; and the 82nd Airbone Division (Fort Bragg, N.C.) were awarded the Composite Risk Management Safety Award.

Pak, a Korean national safety specialist, translated numerous safety documents from English to Korean, including Army Risk Assessment Program (ARAP) questions, a CRM power point presentation and the IMCOM-Korea 2007 Summer Safety Campaign that incorporated CRM.

From December 2006 through August 2007, Moore directly applied CRM methods and tools in field and garrison

environments to protect Soldiers, civilians and the public. His efforts helped create a new civilian CRM training course.

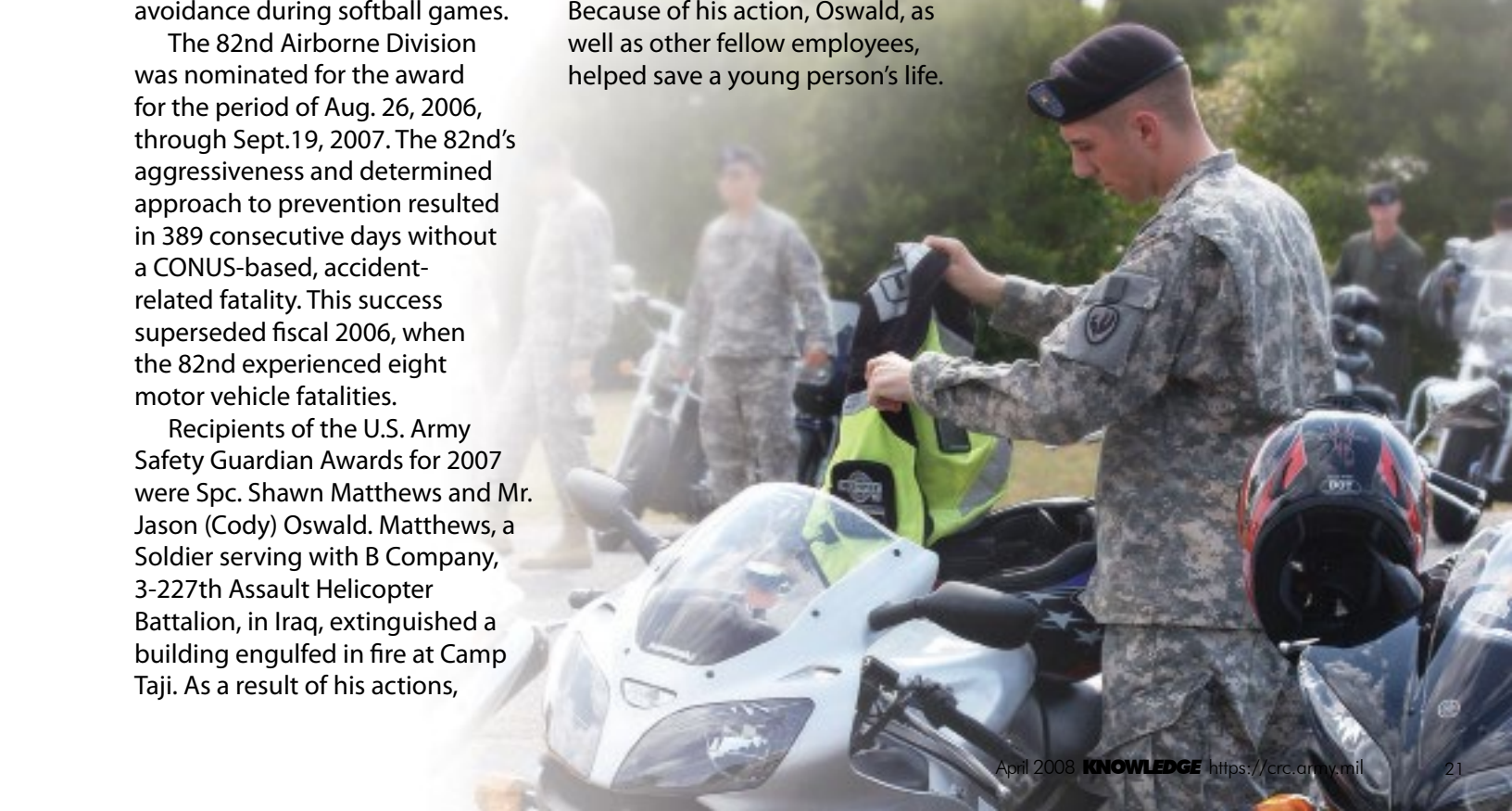
In 2007, IMCOM-Korea Morale, Welfare and Recreation started an aggressive sports safety awareness program by enforcing the use of personal protective equipment, installing breakaway bases to reduce ankle injuries and implementing the use of double lines to promote collision avoidance during softball games.

The 82nd Airborne Division was nominated for the award for the period of Aug. 26, 2006, through Sept.19, 2007. The 82nd's aggressiveness and determined approach to prevention resulted in 389 consecutive days without a CONUS-based, accident-related fatality. This success superseded fiscal 2006, when the 82nd experienced eight motor vehicle fatalities.

Recipients of the U.S. Army Safety Guardian Awards for 2007 were Spc. Shawn Matthews and Mr. Jason (Cody) Oswald. Matthews, a Soldier serving with B Company, 3-227th Assault Helicopter Battalion, in Iraq, extinguished a building engulfed in fire at Camp Taji. As a result of his actions, Matthews prevented possible loss of life and injury, as well as extensive financial damage to the area where the fire originated.

Oswald, employed as the head lifeguard of the U.S. Army's IMCOM at Fort Sam Houston, Texas, applied lifesaving techniques during a near drowning at the post's aquatic center. After an unresponsive teenager was pulled from the water to safety, Oswald rendered CPR and helped stabilize the victim. Because of his action, Oswald, as well as other fellow employees, helped save a young person's life.

The U.S. Army Safety Guardian Award is presented by the DASAF to individuals who, through extraordinary individual action in an emergency situation, prevent an imminently dangerous situation, prevent injury to personnel or minimize or prevent damage to Army property. Nominations should be submitted as soon as possible after the occurrence of the event.«



IN THE THICK OF IT ALL

SURVIVING

CHRISTINA MARTIN
Aviation Aftermarket Defense
Mt. Kisco, N.Y.

U.S. military helicopter crews have faced their worst nightmare in the Middle East: brownouts. Now it is up to the military to develop innovative solutions to eliminate the threat that comes with 0/0 conditions.

THE BROWNOUT

Picture this: You're a mere 75 feet from landing your helicopter in the middle of nowhere. The terrain below you is arid desert, and there isn't enough room to perform a roll-on landing.

Within moments, your helicopter's rotor downwash begins to stir up dust. As you approach, the cloud of sand, dust and debris starts building from the rear, moving forward from the tail wheel and past the cabin door to crew window, engulfing your aircraft.

You're only 10 feet from the ground, but you cannot see anything outside of the cockpit. Conditions are 0/0 (zero ceiling/zero visibility). The dust outside the cockpit window is swirling and creating an illusion that makes you feel like the chopper is spinning. Without any visual cues, you are no longer able to see potential obstructions in the landing zone. Landing at this point is a dangerous risk—you could crash or, even worse, your crew could be seriously injured.

This scenario is known as brownout, and it has been a known hazard within the military since before

the Persian Gulf War. Brownouts are also recognized as the most significant of all military distresses when desert landings are necessary. Since 2001, the Army has reported more than 50 brownout-related incidents, with 80 percent of those happening during landings and the other 20 percent occurring during takeoffs. Incidents resulting from brownout are several times more likely to happen at night when crews are wearing night vision goggles, as the crews' peripheral vision is already drastically reduced.

Naturally, there has been increased emphasis on training, tactics and emergency procedures for brownout scenarios to help decrease incidents. However, this phenomenon remains one of the leading causes of helicopter accidents, with about three out of every four mishaps caused by excessive dust and dirt roused by the helicopter rotors. Brownouts are especially dangerous for heavier aircraft such as the CH-47 and UH-60M helicopters, as well as for the AH-64D, which has a narrower stance than the Black Hawk and is more susceptible to rollovers.

Although the problem was recognized in the 1990s, the Army only began categorizing brownouts as a major safety hazard in 2003. As such, the military has spent as much as $1 million a year trying to alleviate the problem by developing countermeasures ranging from new technologies for the aircraft to new ways of preparing a landing site. The military's goal has been to generate effective solutions in the shortest possible time frame to prevent more casualties while minimizing the cost of developing and implementing such solutions.

Developing Solutions

Today's deployed helicopter pilots do the best they can to cope with brownout conditions. They use roll-on landings (extending the landing for as long as the terrain and obstacles allow) and rely on their crews to call out the dust as it moves from the rear to the front of the bird. If the crew is lucky enough to be landing at a predetermined — and, presumably, friendly — site, preparing the landing zone is an option. This can be done by chemically treating the landing area with sprays that hold down the dust or by laying down transportable landing mats.

Unfortunately, more often than not, a landing is not planned. Missions may include medical evacuations (MEDEVAC) rescues, as-needed supply drops or unscheduled troop transports. In such cases, there is little to no time for an extended roll-on landing or for preparing the landing site. So what's a crew to do?

Some ideas have included changing the design of the helicopters to be more aerodynamic or otherwise altering related technology. Naturally, creating a workable redesign of a helicopter could take years and involve huge costs, so adding to the existing technology is the preferred approach. "Significant funding has been spent on developing technology

> "Since 2001, the Army has reported more than **50 BROWNOUT-RELATED INCIDENTS**, with **80 PERCENT** of those happening during **LANDINGS** and the other **20 PERCENT** occurring during **TAKEOFFS**."

to minimize the impact of brownout conditions," said Kim Henry, a public affairs specialist with the U.S. Army Aviation and Missile Command at Redstone Arsenal, Ala. To most efficiently reach a solution, the various branches of the military are working together. "Communication is critical among the services to efficiently leverage ongoing efforts that further advance the technology," Henry said.

The most basic of the technological solutions that are currently available to pilots is flight symbology. Flight symbology assists pilots during low-visibility situations and varies in complexity. An example of its simplest form is the system used on the Air Force's MH-53 helicopter. In the middle of the heads-down display is a box. A cross comes off the top of the screen at 15 knots, and the pilot decelerates and walks the cross down to the box as a way to monitor the helicopter's vertical velocity.

The Army's brownout situational awareness upgrade (BSAU) took flight symbology to the next level. Phase 1 of the upgrade resulted in a liquid crystal display that maps acceleration cues, radar altimeter height and vertical speed and vector. For further precision in the hover display, engineers added a global positioning system (GPS) with the radar altimeter on the UH-60 and CH-47.

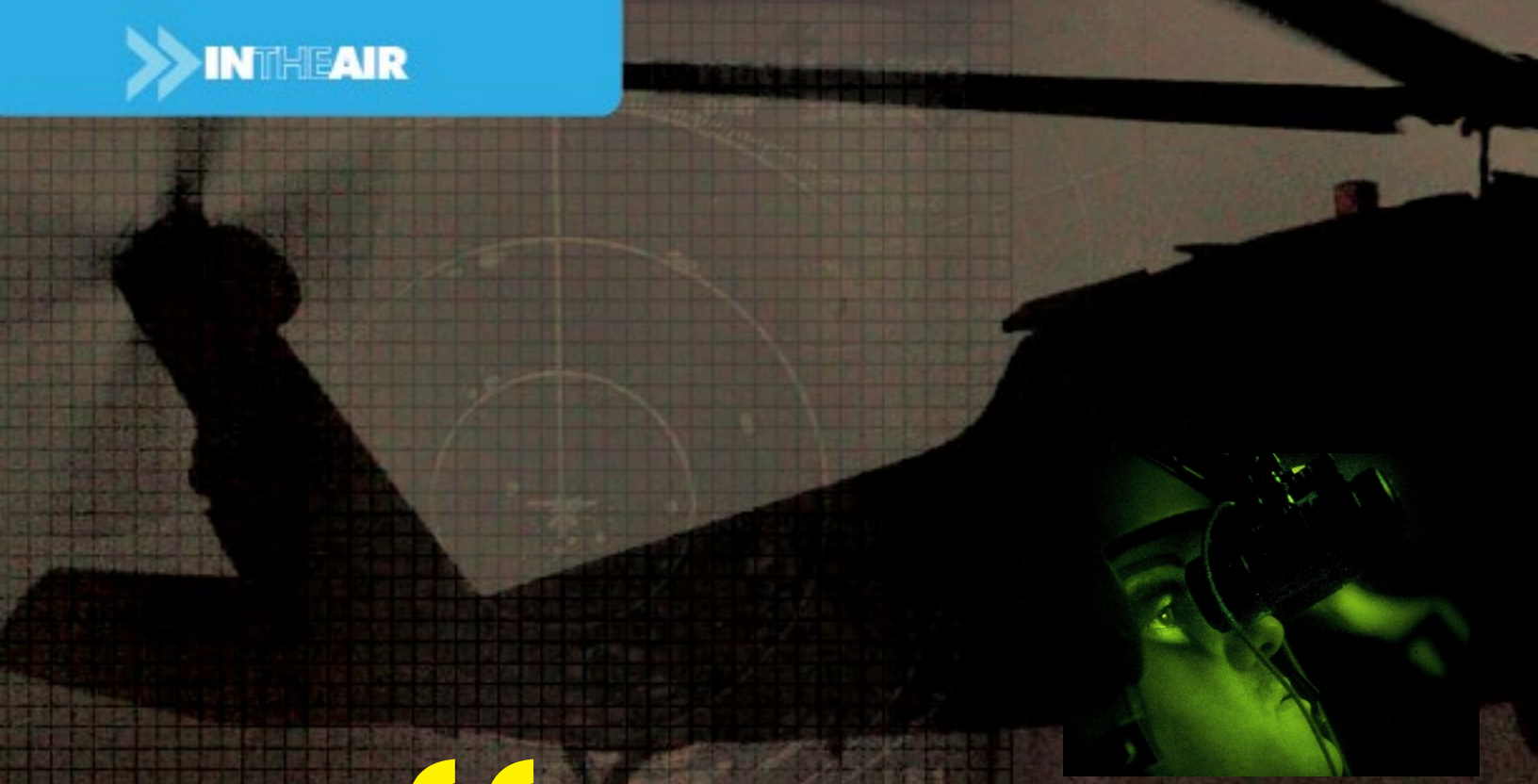
After successful testing in 2004 at Yuma Proving Ground in Yuma, Ariz., the Army decided to upgrade its new Chinooks and Black Hawks with this system. Unfortunately, because of funding constraints, BSAU did not continue through the originally planned Phases 2 and 3.

Seeing Through the Dust

The situational awareness upgrade has been valuable in terms of upgrading outdated aircraft. However, the Army's BSAU still does not solve the problem of vision impairment during brownout.

So this is where "see-through" technology steps in — one of the most sought-after features of a successful brownout solution. See-through means just what it implies: With the help of specialized technology, pilots will be able to see through the massive dust cloud otherwise erasing their view of the ground, giving them the ability to land safely. One program to integrate see-through is the Sandblaster initiative, sponsored by the Defense Advanced Research Projects Agency (DARPA). The Army, Air Force and Marines are involved in this project to varying degrees.

The Army holds a consulting/monitoring role on the project. Henry said the approach integrates four distinct, but



> "The most **BASIC** of the **TECHNOLOGICAL SOLUTIONS** that are **CURRENTLY** available to pilots is **FLIGHT SYMBOLOGY**."

interrelated, advanced concepts, including:

- A radar sensor for three-dimensional, see-through scanning; "[The radar] sends out radio frequency pulses and receives the returns from objects in the field of view," Henry said. Using algorithms, the scans are processed as three-dimensional images (in contrast to the type of two-dimensional image produced by standard radar).
- A database that captures and integrates the image produced by the scans with a stored image of the surrounding terrain.
- An advanced, three-dimensional, synthetic vision system with predictive state-of-the-art aircraft information to restore the pilot's lost visual cues, creating a realistic and intuitive view of the outside environment.
- An agile flight-control system tailored for low-speed helicopter operations during landing, giving the pilot the option to let the helicopter land itself.

With these advanced technologies, the pilot would have a depiction of the world outside and, theoretically, would be able to point the helicopter in the direction of safety.

Currently, the Sandblaster initiative is exploring the use of millimeter wave radar as its sensor, as this form of radar has been shown to provide increased visibility through dust. Flight testing is expected to begin in late 2008. If all goes well, this see-through technology will be the first semi-automated system of its kind.

Similar in theory, the Air Force has been working toward its own solutions, the most promising being its laser radar, or LADAR, technology. "Essentially, [LADAR] is taking three-dimensional pictures with cameras," said Dr. William Humbert, program manager at the Air Force Research Laboratory (AFRL), which is responsible for the Air Force's science and technology program. "Every pixel is measuring the range to target, which allows for obstacle detection and ground slope indication."

The LADAR technology works by using its laser beams to scan the ground and process a signal that is bounced back, thus creating a virtual picture of the area. The technology has the ability to map out the broader topology of a city or geographic area from a large distance away. Closer up, LADAR can pick up the surface structure of any single object.

So far, the AFRL has seen promising results with the LADAR system. After successful testing trials at Yuma, sponsored by Sandblaster, the AFRL expects to perform a flight-based test by the end of the year. Humbert believes the system has "a lot of potential." "Compared to other [systems], it's more complete," he said.

After flight-based tests are performed, the remaining phase before implementation is to finalize the design of the system. "It's really just engineering issues that are left (to be worked out)," Humbert said. When complete, the LADAR technology will be a self-contained system that can be installed on any model of rotorcraft, with an estimated per-unit cost of $200,000.

Other technology in the works by the AFRL is the photographic landing augmentation system for helicopters (PhLASH). Unlike LADAR, PhLASH can be compared to a conventional camera in that PhLASH creates two-dimensional pictures rather than three-dimensional images, Humbert said.

PhLASH uses the "see-and-remember" concept, which ideally would be applied during the helicopter's final approach but before brownout. On approaching the landing site, the system would take several high-resolution images of the landing area using an infrared digital camera and then adjust the images to real time as the helicopter descends. In other words, as the helicopter descends, the image "zooms in" to create the illusion of approaching an object. PhLASH uses a combination of an electro-optical sensor and infrared strobe lights to match the photograph of the ground with a coordinate on the Earth's surface using the onboard GPS.

The downside to PhLASH is the time between the photo last taken and landing is about 20 seconds. Although it is unlikely, there is always a chance that some sort of obstruction might enter the landing zone in these final seconds. The cost of PhLASH would be about $150,000 to install one unit.

Landing Without a Hitch

After more than a decade of flying in arid environments, pilots soon may be able to land and take off in the middle of a dust cloud without breaking a sweat. It has been years since brownouts were first recognized as a major hazard, but the military seems to be within reach of a solution, whether it's LADAR, PhLASH or something different.

It remains to be seen what the government will decide to do in terms of implementation and funding. But it is predictable that roll-on landings and dust calling are soon to be a thing of the past. Technologically advanced helicopters providing improved safety for our airmen will mark the future. ■

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THE DEATH ZONE

LT. COL. IAN CURRY AND FRED BROZOWSKI
U.S. Army Aeromedical Research Laboratory
Fort Rucker, Ala.

In current U.S. Army operations, rotary-wing aircrews can be repeatedly exposed to moderately high altitudes (up to 18,000 feet pressure altitude), making hypoxia and its performance effects, a real hazard.

Hypoxia is a reduction in the amount of oxygen available to your body and, most importantly, your brain. Oxygen is used at the cellular level as fuel, and without enough fuel, the cells do not function optimally and the body and brain can both suffer. Climbers who go to very high altitudes talk about the "death zone" above 26,000 feet where they begin making errors—sometimes catastrophic. Most aviators have had some altitude chamber training up to 25,000 feet and can relate stories about their less-than-optimal thinking and behavior patterns after three or four minutes off oxygen.

During routine aviation medicine training, rotary-wing aircrews are typically told the impact of hypoxia from flying in unpressurized cabins up to 10,000 feet above mean sea level (AMSL) is relatively small and has few implications for aviation safety. Much of this information is based on data collected from resting subjects and may not reflect the true impact of hypoxia on an aircrew engaged in operational tasks.

A survey listing common symptoms of hypoxia (difficulty with calculations, feeling lightheaded, delayed reaction time and mental confusion) was given to Australian army helicopter aircrews that had operated at altitudes up to 10,000 feet AMSL. One or more symptoms consistent with hypoxia were reported by 86.6 percent of nonpilot aircrew members and 60.9 percent of pilots. Additionally, narratives from 21 aircrews found that potentially operationally significant symptoms were seen at a mean altitude of 8,462 feet.

Many U.S. Army Soldiers are regularly operating in theater at altitudes between 10,000 and 18,000 feet AMSL. There seems to be increasing evidence that brain function and vision are both subtly affected by the moderate levels of hypoxia at these altitudes once thought to be completely safe. In recent years, there have been accidents where both skill and judgment failures are believed to have been associated with hypoxia at moderate altitudes. Due to advances in the understanding of hypoxia and the potential risks presented by operations at altitude, the U.S. Army Aeromedical Research Laboratory (USAARL) recently focused work on countering its effects at lower altitudes (between 10,000 and 18,000 feet).

There are only two ways to solve this hypoxia problem: fly lower or provide oxygen to the crew. Both means have been used, but when the mission absolutely dictates that aircraft are taken high, supplementary oxygen is the only answer. The special operations people have been using a system for years that provides them with a partial fix for getting enough oxygen at altitude. It's a simple system of an oxygen bottle with a manual adjustment and some hospital tubing to the nose, which is not an ideal solution. Product Manager Air Warrior tasked USAARL to come up with a better portable

oxygen system for potential use by U.S. Army helicopter aircrews.

Working with industry, the Army has come up with a system that can provide oxygen in a fully automated manner via an adjustable nasal cannula or mask. The oxygen doesn't flow at all times as in previous hardware configurations. This significantly reduces the risk of fire and makes the oxygen last much longer. A bottle the size of a helicopter emergency egress device provides about two and a half hours of oxygen at 15,000 feet. This new system is called the Personal Helicopter Oxygen Delivery System (PHODS).

The PHODS is not perfect, as some people find the nasal cannula uncomfortable. Also, because the oxygen delivery pulse is triggered by negative pressure, some training is required to get used to the shot of oxygen going up the nose. However, the PHODS has been tested for function in both the altitude chamber and three types of aircraft. So far, it has performed well, delivering enough oxygen that an aircrew using it should not have any problems with hypoxia. In fact, pilots using it were fine up to 18,000 feet.

> "There seems to be **INCREASING EVIDENCE** that **BRAIN FUNCTION** and **VISION** are both subtly **AFFECTED** by the **MODERATE** levels of **HYPOXIA** at these **ALTITUDES ONCE THOUGHT** to be completely **SAFE.**"

The USAARL also tested the PHODS to see if the cannula and mount had any safety effects on the HGU-56P helmet. The additional weight is about 90 grams and has little effect on the helmet's center of gravity or impact protection and does not increase the likelihood of neck strain or injury.

For the guys in the back of aircraft who are more physically active, the mask system has a built-in function which will deliver more oxygen on request. While these bottles will run out in a shorter amount of time, they are easy to change on the fly and, in suitably equipped aircraft, can be plugged into onboard consoles to be refilled. The PHODS appears to be a simple and practical solution to hypoxia in unpressurized aircraft—rotary or fixed wing.

"apple jelly"

GREG LAUSIN
The Boeing Company

"How about that fuel sample?" It's a phrase every aviator has asked the crew chief before preflight. I must admit a cursory look at the fuel sample was all that was required, and, sometimes, it was nothing more than asking the crew chief if one had been taken. I rarely gave it more thought than that … until now.

The story began during the week of Oct. 8, 2007, when a non-U.S. AH-64D operator experienced uncommanded engine oscillations on three AH-64Ds while operating in Italy. One AH-64D experienced two separate episodes of uncommanded engine oscillations, and two other AH-64D crews experienced a single episode. In the most serious incident, one of the crews had responded to severe engine oscillations by retarding one power lever to idle when the remaining engine--also oscillating--flamed out. This required the crew to execute an autorotation to an emergency landing. Two aircraft experienced engine oscillations nearly simultaneously and approximately 12 kilometers (km) apart.

The investigation began with our looking at maintenance data recorder (MDR) data from each aircraft. We noted the uncommanded engine oscillations were not consistent with any previously observed behavior pattern of the GE-T-700-701 engine series. The engines exhibited unusual indications of low torque, along with a high gas generator (Ng) and high turbine gas temperature (TGT) readings. The engines were surging well into the engine stall region with large torque splits and divergent high/low oscillating power turbine speed (Np) and rotor speed (Nr) to engine overspeed and underspeed limits. The initial challenge was sorting out whether one or both engines were misbehaving. We thought the data had to be wrong—it contradicted our preconceived notions of how twin-engine helicopter propulsion malfunctions should appear.

Multiple hypotheses were considered to explain the behavior. Since the occurrences happened to multiple aircraft over a fairly large geographic area, could electromagnetic interference (EMI) from a nearby source be the culprit? Was a new, secret directed-energy weapon being used by terrorists? What about the possibility of sabotage? How about fuel contamination? But contaminated fuel would just kill the engines outright, affecting both at the same time, wouldn't it?

As we continued to analyze these events, we knew we had to figure out what conditions, systems or components on the aircraft could cause the engines to behave this way. Experience told us that during EMI testing, high power levels could affect aircraft systems; but on the AH-64D, it usually only affected cockpit displayed indications and not the actual function of systems.

The next thing we knew, we were on our way to beautiful southern Italy to meet with the operator. Interviews with maintenance personnel and review of maintenance actions proved to be productive and revealing. Before deployment, the refuel section was instructed to drain and clean the fuel truck. Complying with instructions, the fuel truck was emptied and cleaned out per the manual. The truck was then sealed and driven to Italy via Switzerland. Upon arrival, the fuel truck was filled with fuel to await the arrival of four Longbows.

Normal procedures required the fuel handlers to take a fuel sample from the truck before dispensing it into any aircraft. After the incidents, fuel samples were drawn from the truck and analyzed. Local Aqua-Glo testing did not reveal anything out of the ordinary. A second sample was sent to Shell Oil Corporation for analysis and, again, the test results were good. The investigation team discovered that a large quantity of water (at least five 5-gallon buckets) was drained off before getting a clean sample, which was the sample tested locally and also sent to Shell for analysis. The team learned that this operator generally did not take daily fuel samples from the aircraft. With this information in hand, the team conducted a closer look at the fuel systems of each aircraft.

A closer inspection of the aircraft was facilitated by hand-turning each engine. A noticeable grinding noise was heard emanating from the fuel control unit (hydromechanical unit (HMU)) on three of the eight engines. The HMUs were removed, and each engine was hand-turned again. This time, the grinding noise was not present. There was no apparent indication of external damage to the HMUs, HMU driveshafts or the mounting plate assemblies on the accessory sections of the engines. Fuel samples were obtained from the fuel cells, the HMUs and the fuel filter bowls. Close examination of the fuel samples revealed a free-floating cellulose substance that looked like the white stringy stuff in egg drop soup. Additionally, a gel-like substance was adhered to the bottom and sides of the fuel filter bowls that required scraping to remove. As the samples were allowed to settle, the gel-like substance began to coagulate into a larger ball of material. The gel-like material was sticky. Samples of the fuel with the cellulous material were sent to Shell for analysis. The HMUs were sent to their original manufacturer for teardown evaluation.

Initial reports from the vendor indicated that the HMU sent for analysis passed the initial production acceptance test but failed when fuel was hooked up. Several valves were stuck, which would have prevented the HMU from operating normally. General Electric, the engine manufacturer, responded that if the contamination caused valves within an engine HMU to stick, the indications we had seen in the MDR data could occur. While nothing could be positively identified as the cause of the engine oscillation events, it appeared likely that fuel contamination was the culprit.

To eliminate the possibility of EMI as a source, a hand-held spectrum analyzer was used to measure all radio frequency energy and broadband field strength that might be in the area. There were no emissions in the area that could produce enough energy to affect TV reception, let alone a helicopter in flight 12 km away.

It was learned later that the gel-like substance was a variation of "apple jelly." No, not the apple jelly you spread on your biscuits in the morning, but a gel-like substance that predominantly affects fixed-wing aircraft fuel systems. This contamination occurs when jet fuel with an anti-ice additive combines with an excessive amount of water. Several instances of this kind of contamination have been documented inside fuel cells, but not in fuel control system components on engines.

The moral of this story is to take fuel samples seriously. This operator was lucky that no one was injured and that no aircraft were lost. «

> "The initial **CHALLENGE** was **SORTING** out whether **ONE** or **BOTH ENGINES** were **MISBEHAVING.**"

LOST

AVIATION

AH-64

CLASS A A Model

While conducting a night vision goggles training mission, the crewmembers could not move the pedals during final approach, which was caused by the tail rotor malfunctioning in a fixed position. Subsequently, the aircraft rapidly descended and went into an incontrollable right yaw. As a result, the aircraft crashed, damaging the tail wheel and landing gear before coming to rest upright. The rated student aviator received minor facial abrasions and the instructor pilot received minor injuries. (Late report)

CLASS B

The crew received a HIGH ROTOR indication on final approach, followed by a No. 2 engine-out audio indication. Inspection revealed transmission and main rotor system damage. The accident investigation board determined it was caused by materiel failure. The No. 2 engine driven alternator (SN-DT411956) failed because of an internal short of the power winding, resulting in a rapid overspeed of the No. 2 engine due to the reduced power setting at the time of the engine driven alternator failure. (Late report)

CLASS B D Model

The maintenance crew was performing aircraft run-up when smoke was observed coming from the target acquisition and designation system/pilot night vision system (TADS/PNVS) area. Inspection revealed burn damage to TADS, turret sensor sight, electronic control unit (ECU), power supply and electronic unit.

The crew experienced a generator failure in flight, followed by smoke in the cockpit. During shutdown, the main rotor blade made contact with the PNVS.

OH-58

CLASS C D(R) Model

The aircraft contacted the ground during a training autorotation.

HH-60

CLASS C A Model

- Post-MEDEVAC mission inspection revealed the left auxiliary power unit (APU) door was missing and damage to two main rotor blades.

UH-60

CLASS C A Model

- The crew experienced a steady decrease in the No. 2 engine oil pressure reading during flight. Post-flight inspection revealed the engine oil cap was not secured. Engine scheduled to be returned to depot.

DO YOU USE A CHECKLIST DURING PREFLIGHT TO ENSURE YOU DON'T FORGET ANYTHING, ESPECIALLY WHEN IT COMES TO CHECKING OIL CAPS FOR SECURITY?

CLASS C L Model

- The aircraft was undergoing engine run-up as part of a 120-hour inspection. During the vibration check, the crew experienced a loud report. Inspection revealed a cable from the AVA Kit had separated and was ingested by the engine.

DO YOU INSPECT YOUR EQUIPMENT FOR SERVICEABILITY AND CHECK EQUIPMENT PRIOR TO ATTACHING IT TO THE AIRCRAFT?

UAS

MQ-1W

CLASS C

- The PM Contractor was operating the UAS for military training purposes when the system experienced a low oil pressure indication.

MQ-5A

CLASS C

- The UAS initiated an uncommanded descent to ground impact during launch.

MQ-5B

CLASS C

- The UAS experienced an aft engine RPM droop during flight. Post-flight inspection revealed the engine was damaged beyond repair.

RQ-7B

CLASS B

- On return flight, the engine RPM decreased, resulting in the UAS not gaining sufficient altitude to land safely. The system touched down outside of the forward operating base (FOB) with damage and was recovered.

- The UAS experienced an engine failure during landing. A controlled landing to a location beyond the FOB was conducted.

- Operator crew received indication of system ignition failure following an engine malfunction. The recovery chute was deployed and damaged system was recovered.

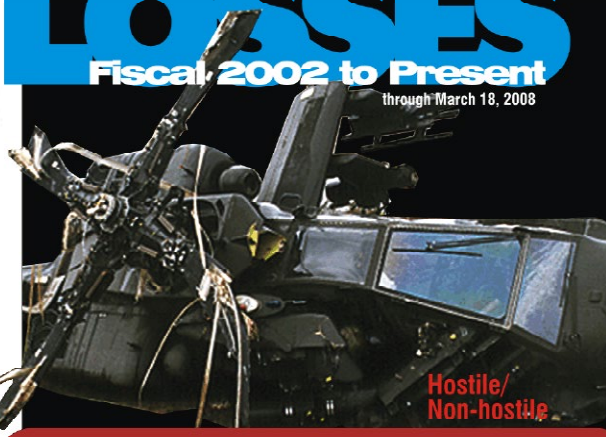
- The UAS crashed and was rendered destroyed following a series of system indication anomalies and subsequent loss of control.

CLASS C

- The UAS experienced a launch failure and subsequently

ARMY AIRCRAFT LOSSES

Fiscal 2002 to Present
through March 18, 2008



AH-64A/D	11/51
U/MH-60A/L	8/27
C/MH-47	7/16
OH-58D	11/25
TOTAL	**37/119**

ARMY GROUND LOSSES

Fiscal 2008
through March 23, 2008

AMV	9/8
ACV	3/0
PERSONNEL INJURY includes weapons handling accidents	17/15
FIRE/ EXPLOSION	3/3
PROPERTY DAMAGE	1/0
TOTAL	**33/26**

impacted the ground and rolled into the safety net.

- The UAS crashed on final approach for landing.

GROUND

ACV

CLASS B

- A Stryker was damaged when it overturned during reliability testing. The Stryker's left wheels had run off the course and entered soft dirt. When the driver attempted to steer back onto the course, the vehicle flipped.

- A Bradley Fighting Vehicle was damaged when it rolled off a bridge into a canal. The crew was thrown against the right side of the vehicle, but all escaped without injury.

- A Soldier suffered a permanent partial disability injury when the M1117 Armored Security Vehicle he was riding in was struck by a 5-ton truck.

AMV

CLASS A

- A Soldier was killed when the M923 he was driving rolled over, pinning him underneath. The driver was not wearing his seat belt. The assistant driver, who was also not wearing a seat belt, suffered minor injuries. The U.S. Army Combat Readiness/Safety Center accident review board found the driver failed to stay alert and attentive. The board also found the assistant driver, who was text messaging on his cell phone, failed to maintain continuous situational awareness.

- A Soldier in the gunner's position of a HMMWV was killed when the vehicle overturned. The driver of the HMMWV was also injured in the accident.

CLASS B

- A Soldier suffered a permanent partial disability injury when his M1114 was struck from behind by an M88A2 Hercules and overturned.

Personnel Injury

CLASS A

- A Soldier suffered a permanent total disability injury when he was shot in the back of the neck by a Soldier who was handling his weapon in an inappropriate manner.

- A Soldier suffered fatal injuries when he collided with another Soldier at about 100 feet above ground level during a HALO free-fall exercise and struck the ground. The other Soldier was uninjured.

- A Soldier suffered fatal injuries when he fell off a skateboard and struck his head on the ground.

- A Soldier was killed when the backhoe he was operating on a 45-degree slope overturned. The Soldier was attempting to dig a storm shelter on his property.

- A West Point cadet was fatally injured when he was struck by a train. The cadet had been visiting local establishments when, for unknown reasons, he attempted to cross a set of railroad tracks near the train station.

- A Soldier was found unresponsive in the shower. The cause of death was reported as electrocution.

- A Soldier suffered fatal injuries after falling from the 17th floor balcony of a beach condominium. The fall was deemed an accident.

CLASS B

- A Soldier was attempting to lift his assault pack on his back when his weapon accidentally discharged, striking him in the foot.

- A Soldier suffered a permanent partial disability injury when he stuck his hand in the fan guard of an air conditioner, severing the tip of his pinkie finger.

- Three Soldiers suffered serious burns while conducting a controlled burn with JP-8 to clear a canal line.

POV DRIVING LOSSES

Fiscal 2008

Class A accidents/Soldiers killed

CARS	24/24
SUV/JEEPS	5/6
TRUCKS	5/4
MOTORCYCLES	18/17
OTHER*	2/2

TOTAL DEATHS

FY07 43 FY08 46

CLICK IT OR TICKET CAMPAIGN

The National Highway Traffic Safety Administration's Click It or Ticket campaign will run May 19 through June 1, 2008. Click It or Ticket is the most successful seat belt enforcement campaign ever, helping to create a seat belt usage rate of 82 percent.

Other

CLASS A

- A Joint Land Attack Cruise Missile Defense Elevated Netted Sensor System and a 107-foot telescoping tower were damaged when an attempt was made to lower the tower without the proper equipment.

DRIVING

POV

CLASS A

- A Soldier was attempting to go around a turn in his privately owned vehicle (POV) when he collided head on with another vehicle. Neither the Soldier nor his two passengers were wearing their seat belts. The Soldier and his backseat passenger died at the scene.

- Two Soldiers were drag racing on a street when one lost control and struck and killed another Soldier next to the road at the race's end point.

- A Soldier was driving his POV with his wife and two other friends when he attempted to pass in a no-passing zone and collided head on with another vehicle. The Soldier and the driver of the other vehicle were pronounced dead at the scene.

- Two high school split-option National Guard Soldiers were riding home together from basic training at their drill station when the driver lost control of her vehicle, which then left the road and struck a tree. Although the 17-year-old driver and her 18-year-old passenger were wearing their seat belts, both died in the accident.

- Two Soldiers were riding together as the driver began weaving in and out of traffic at high speed. The driver struck a curb and the vehicle left the road, struck a telephone pole and a tree, became airborne and ejected the driver. The driver was pronounced dead at the scene, while the passenger was taken to a local medical center with minor injuries. Initial reports indicate that alcohol was involved and neither Soldier was wearing their seat belt.

DO YOUR SOLDIERS UNDERSTAND THAT ALCOHOL AND ASPHALT DON'T GO TOGETHER?

POM

CLASS A

- A Soldier was killed in a single-vehicle motorcycle accident when he attempted negotiate a sharp curve on his sport bike, lost control and crashed. The Soldier was properly licensed, had attended Motorcycle Safety Foundation (MSF) training and was wearing all of his required personal protective equipment (PPE).

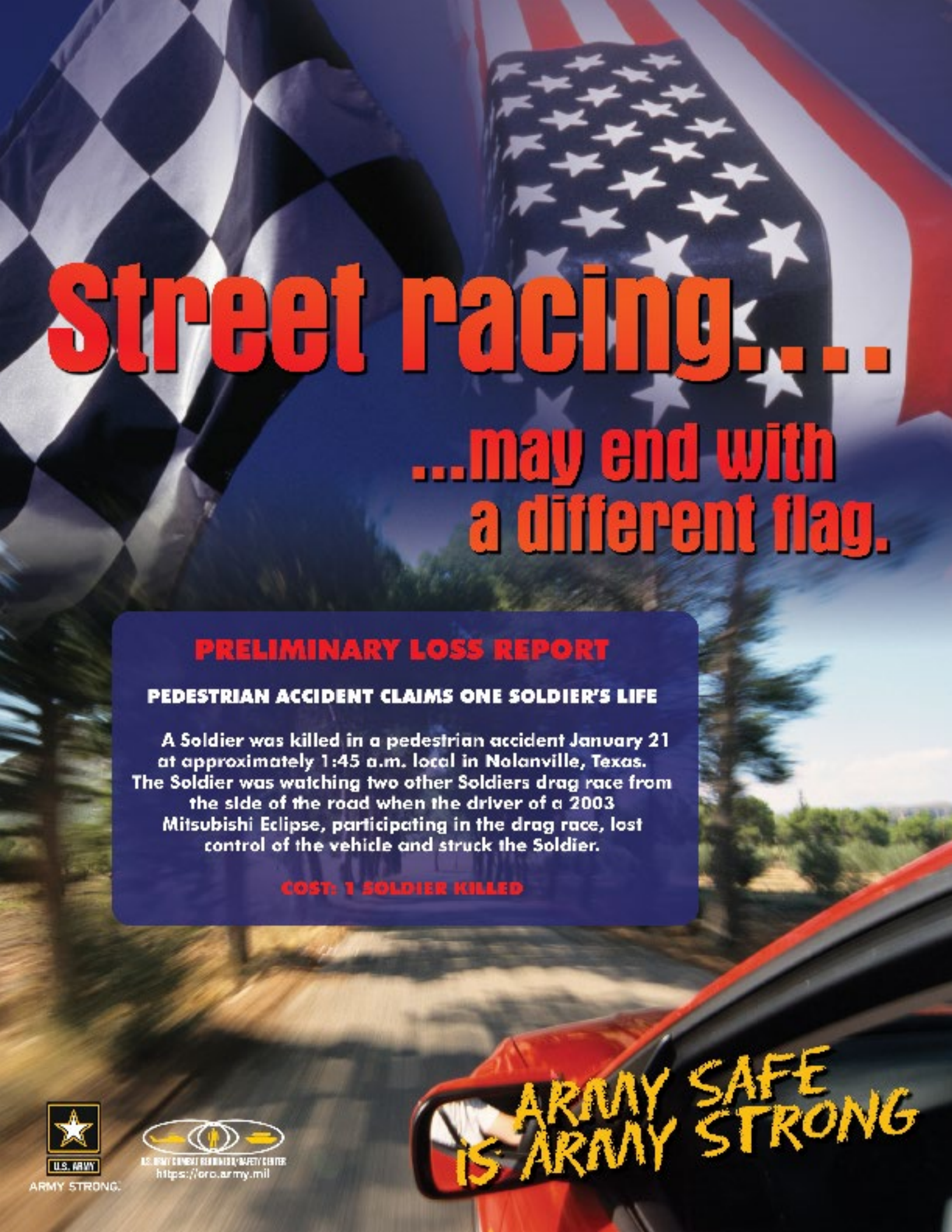
- Two Soldiers were operating their motorcycles at high speed when one reportedly lost control and struck a guardrail. The Soldier suffered fatal injuries and was pronounced dead at the scene. Both Soldiers were licensed, MSF trained and wearing their PPE.

- A Soldier was operating his sport bike just after midnight when he reportedly lost control, left the road and struck a guard rail. The Soldier, who was wearing his PPE, suffered fatal injuries and was pronounced dead at the scene.

- A National Guard Soldier was operating his cruiser as he rode home from his duty station when, for unknown reasons, he collided with the back of another vehicle. The Soldier, who had been wearing his helmet and gloves, was pronounced dead at the scene.

- A Soldier was operating his sport bike at a high rate of speed when he rear-ended a semi-trailer and was killed.

DO YOUR SOLDIERS UNDERSTAND TAKING NEEDLESS RISKS CAN BRING TRAGEDY TO THEIR FAMILIES AND LOVED ONES?


Street racing....
...may end with a different flag.
PRELIMINARY LOSS REPORT
PEDESTRIAN ACCIDENT CLAIMS ONE SOLDIER'S LIFE
A Soldier was killed in a pedestrian accident January 21 at approximately 1:45 a.m. local in Nolanville, Texas. The Soldier was watching two other Soldiers drag race from the side of the road when the driver of a 2003 Mitsubishi Eclipse, participating in the drag race, lost control of the vehicle and struck the Soldier.
COST: 1 SOLDIER KILLED
ARMY SAFE IS ARMY STRONG
U.S. ARMY
ARMY STRONG.
https://orc.army.mil

TO KILL A FRIEND: THE COST OF STREET RACING p. 8

KNOWLEDGE

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OFFICIAL SAFETY MAGAZINE OF THE U.S. ARMY

STAYIN' ALIVE p. 5

U.S. ARMY

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KNOWLEDGE
OFFICIAL SAFETY MAGAZINE OF THE U.S. ARMY

contents

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Mission statement: USACRC supports our Army at war by collecting, storing, analyzing, and disseminating actionable information to assist Leaders, Soldiers, Families, and Civilians in preserving/protecting our Army's combat resources.

We welcome your feedback. Please e-mail comments to **knowledge@crc.army.mil**.

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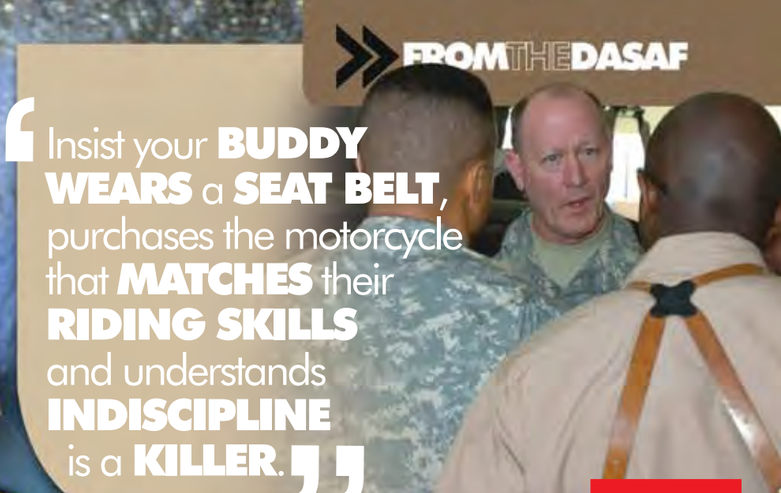


"Insist your **BUDDY WEARS** a **SEAT BELT**, purchases the motorcycle that **MATCHES** their **RIDING SKILLS** and understands **INDISCIPLINE** is a **KILLER**."

DON'T WANT NO SUMMERTIME BLUES!

Summertime is not the time to give safety a vacation.

The time between the Memorial Day and the Labor Day weekends marks the period when our Army's troopers, their Families and our Civilian teammates are traditionally exposed to the year's greatest risk from accidental mishaps and fatalities. These 101 Critical Days of Summer are when more of us are traveling, participating in water sports and enjoying the numerous outdoor activities and thus, increasing our exposure to potential off-duty tragedies.

Our Army's strides in decreasing on-duty accidents, through proactive Leader engagement and the continual use of safety tools and awareness programs, reflect tremendous efforts. Your actions, working to protect our Soldiers while on duty, must now transfer to impact our off-duty accidents during these upcoming summer months.

We believe the Army's success in decreasing on-duty accidents is the direct result of the continuous oversight and leadership our Soldiers receive. But commander and supervisor leadership cannot physically be present 24/7. Therein lies the challenge – how do we modify the lifestyles of our Soldiers to raise awareness and adjust actions, in a positive manner, to achieve our desired results of decreased injuries and deaths? We believe there are other tools and paths you might pursue to achieve positive goals – those tools are Soldiers' peers and Families.

The Army has always recognized the influence and support Families have in the lives of Soldiers. Families serve as the key foundation of our value sets which factor greatly into our decision-making process. That said, it only makes sense to devote the appropriate amount to time and energy to educate Families in safety awareness and practices, thereby empowering them so they can then educate our Army force. Tools such as the Family Engagement Kit, located on the USACRC Web site, are developed specifically for this and can stretch to the extended Family.

So enjoy your summer, but also take these best practices and recommendations to heart – you are too important not to.

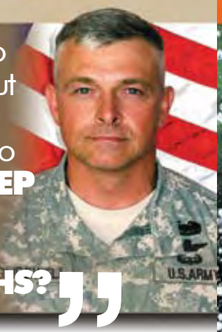
- **Check to see if your installation has a Motorcycle Mentorship Program.** These MMPs not only provide great group ride opportunities, but also allow newer riders to hook up with more experienced riders to learn skills and techniques. Our force continues to mirror society in the continuous growth of new riders each year. We welcome our new riders, now let's mentor them.
- **Remain committed to using the Travel Risk Planning System before traveling.** Inspect your vehicle and plan your travel with plenty of stops to ensure you remain attentive while driving. Fatigued driving is a common contributor to vehicle accidents.
- **Alcohol and water activities never mix.** Alcohol affects judgment, motor skills, peripheral vision, depth perception, night vision and balance – all essential skills while enjoying water activities. Enjoy the summer months in the sun but drink responsibly.
- **Never leave a fallen comrade.** A comrade can fall to different types of enemies. If you see a comrade in trouble, step in and engage. Insist your buddy wears a seat belt, purchases the motorcycle that matches their riding skills and understands indiscipline is a killer.

I challenge you to make the right decisions in your off-duty activities during these 101 Critical Days of Summer and never give safety a day off.

Army Safe is Army Strong!!

William H. Forrester
Brigadier General, USA
Commanding

WHAT ARE YOU DOING ABOUT IT?



> "How many **LOSSES** do **YOU** have to read about or how many **CLOSE-CALLS** do **YOU** have to witness before **YOU STEP UP** and do something to **PREVENT** these **NEEDLESS DEATHS?**"

The 101 Critical Days of Summer are almost upon us and I want to share some insights and accident trend analysis, for awareness, that may help make this a more enjoyable and safer season. To date, off-duty accidents represent nearly 75 percent of all Army accidents we have suffered so far this year. If our five-year accident trend remains consistent, we can expect to endure the loss of over 200 Soldiers before the end of this fiscal year! The loss of just one Soldier deprives us of a friend or peer, however, many others also endure pain because this Soldier was someone's father, mother, sister, brother, son or daughter. I promise you, not a day goes by when I and those here at the safety center are not trying to think of a way to prevent accidental losses. So my question to you - What are YOU doing about it? How many losses do you have to read about or how many close-calls do you have to witness before you step up and do something to prevent these needless deaths? There are three areas responsible for more than two-thirds of all off-duty Army accidents; privately-owned vehicles (POVs), drowning and fatigue.

POV accidents with contributing factors such as speed coupled with loss of control, account for a large percentage of all Army accidents. Did you know that something as trivial as one-quarter of an inch could possibly save your life? One-quarter of an inch roughly equates to 15 to 20 mph in the average American car; however, one-quarter of an inch can be 40 to 50 mph on a motorcycle, depending on the gear you are in. Say you just purchased a vehicle. Beware - recent studies indicate moving from a sedan to SUV or crusier to sportbike can increase your likelihood of an accident. Experience doesn't always transfer; cruisers versus sportbikes are as different as sedans versus sport utility vehicles (SUVs). You may find you can easily overdrive the capabilities of the machine, or rather, the machine possesses capabilities exceeding your experience level.

The Army experienced 15 drowning accidents last fiscal year. Unfortunately, that total is more than the two previous years combined. While several different factors played a part in these losses, one factor is present in all but two of these accidents - another person's presence. From the time we're old enough to enter the water, most of us are taught not to eat before you swim and never go into the water by yourself. While it is not clear if either of these adages could have made a difference in many of these accidents, it is clear that in some maybe they could have. The second common factor present, in more than 50 percent of these accidents was the proximity of land. Fact - standing on or in close proximity to land may lead to overconfidence or a false sense of security around water. Even the best swimmer may lose their life when thrust into a situation where currents and hypothermia are present, even with a personal floatation device.

Fatigue is present more often than alcohol in off-duty accidents. Often overlooked and even less understood, over the course of the last 10 years, fatigue played a factor in claiming an average of 75 lives a year.

As Soldiers and professionals, we often push ourselves by burning the candle at both ends, especially during those few precious opportunities when we can get away and relax. Rest cycles are often METT-T driven when operating in a deployed environment. In addition to Leaders, Soldiers are responsible for the amount of rest they get while not deployed.

These are demanding times for our Army; but a little planning and forethought will hopefully lead you and your formation through a safe and enjoyable 101 Critical Days of Summer. «

Army Safe is Army Strong!

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

Taking the Plunge

RICHARD SCOTT
U.S. Army Combat Readiness/Safety Center
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For lovers of the great outdoors, a day on the water can provide the perfect escape from the stresses of everyday life. As we head into the summer season, many Soldiers are drawn to some form of water, whether it's a swimming pool, river, pond, lake or ocean. Yet, for all the fun and relaxation water-related activities offer, they can also pose a deadly risk to those who fail to incorporate the proper safety measures.

> **"SMALL-BOAT ACCIDENTS** are the **MOST FREQUENT** cause of **DROWNING FATALITIES** nationwide."

Over the last 10 years, the Army has experienced 95 water-related accidents involving one or more Soldier fatalities; and these statistics do not include Family members or civilian friends. Because Mother Nature is constantly changing, we must be prepared to meet her whims. Unfortunately, we don't often get a second chance.

During fiscal 2007, there were 14 Army water-related accidents, resulting in 15 deaths. In seven of these cases, the Soldier had not planned to enter the water but went overboard from a fishing boat or similar watercraft.

That was the case for two Soldiers who encountered dangerous weather conditions while fishing on a lake in January 2007. The Soldiers had tied their 12-foot flat-bottomed boat to a bridge. The boat was not well equipped and only had a small trolling motor. As a storm blew in, the conditions on the lake became windy. The water temperature was below 50 F and, because it was a cold, winter day, the Soldiers were wearing heavy clothing. At some point, the Soldiers entered the water; their bodies were found three days later. Neither Soldier had worn a personal flotation device (PFD).

Small-boat accidents are the most frequent cause of drowning fatalities nationwide. Of the fiscal 2007 accidents, only one Soldier was reported to have worn a PFD. The other drownings involved scuba activities and swimming in lakes, rivers and open water.

Many times, the victim doesn't intend to enter the water but either dives or falls in. Such was the case when two Soldiers on combat patrol in Afghanistan fell into a river while wearing a full combat load. One Soldier was able to swim out of the river, but rescue attempts for the other Soldier were unsuccessful.

No matter where we are or who we're with—both at work and play—we need to be prepared to take the plunge. Before taking part in water-related activities, assess the readiness of everyone with you, especially children. In addition to being able to swim, completion of a water survival training program is highly recommended.

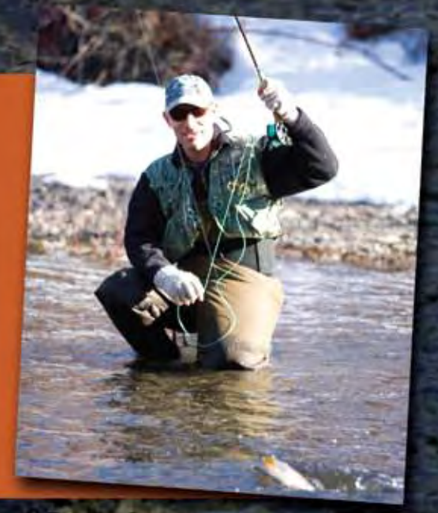
When preparing for watercraft activities, a little prior planning can also go a long way. Keep these tips in mind before heading out on the water:

- Dress for the water temperature, not the air; wearing light layers will keep you warmer and dryer.
- Wear a hat; 50 percent of an individual's body heat is lost through the head.
- Before activities, eat high-energy foods and bring along a high-energy bar.
- Bring extra clothing in a water-resistant bag in case someone gets wet.
- Ensure the watercraft is equipped with the appropriate number and type of PFDs and they are worn correctly.
- Most importantly, let someone know where you are going and when you plan to return.

Soldiers are exposed to enough risks while on duty. So why be careless and bring unnecessary risk into off-duty activities that are supposed to be fun? By taking the time to properly prepare for water-related activities, you can help ensure the only thing to worry about is having a good time.«

DID YOU KNOW?

- **Wearing several layers of clothing will insulate and keep you warm in cold weather.**
- **Clothing layers trap air between them, offering great insulation. Outer layers are easy to remove if temperatures warm up during the day.**
- **When fishing in waders, always wear a wader belt to ensure better in-stream safety. It serves to keep water out of the waist and boot area in case you happen to step into water deeper than the wader.**
- **Properly inflated float tubes will keep you higher out of the water, causing less drag on the float and making it faster and easier to paddle around. Ensure you follow the manufacturer's recommended guidelines for using float tubes.**
- **A personal flotation device, when worn under clothing, provides extra warmth and emergency flotation if you go for an unexpected plunge.**



FYI

- In 2005, the U.S. Coast Guard received reports for 4,969 boating incidents; 697 participants were reported killed and 3,451 were injured.
- The percentage of drownings attributed to boating mishaps declined from 82 percent in 1990 to 70 percent (491 out of 697) in 2005. The remaining boating fatalities were due to trauma, hypothermia, carbon monoxide poisoning or other causes.
- It is estimated 426 lives could have been saved in 2005 if all boaters had worn personal flotation devices.
- Alcohol was a contributing factor in about one-quarter of all reported boating deaths.
- Open motor boats were involved in 45 percent of all reported incidents and personal watercraft (PWC) were involved in another 26 percent. (Open motor boats are made of open construction and specifically built for operating with a motor, including boats canopied or fitted with temporary partial shelters.)
- In 2005, the number of reported non-fatal injuries (1,007) involving PWC such as Jet Skis® and WaveRunners® increased for the first time since 1996. PWC-related fatalities (65) also increased in 2005.

Source: U.S. Coast Guard, Department of Homeland Security
http://www.uscgboating.org/statistics/Boating_Statistics_2005.pdf

TO KILL A FRIEND

COMPILED BY THE KNOWLEDGE STAFF
U.S. Army Combat Readiness/Safety Center
Fort Rucker, Ala.

Racing is as American as mom and apple pie, which is why every year millions of people watch high-powered cars battle it out in National Hot Rod Association races. While there is always the risk of an accident during these races, the crowd is normally not in danger. However, the same cannot be said for street racing. It was just after midnight on a Sunday morning when four Soldiers got into a conversation much like the one below. They could not have imagined what it would lead to. (Editor's note: The Soldiers' real names have been changed to protect their identies. The comments below attributed to "Bill" were created solely for the purpose of this article.)

"OK, Anna, it doesn't matter that my car has a four-cylinder engine and yours is a six-cylinder—I'm a better driver and I'll win the race," Bill said. He went on to taunt her, "If you're scared, just say so! Better yet, just let Tod race your car. It doesn't matter to me. I'm a better driver than any of you punks!"

Anna believed her car was faster, but she didn't want to be behind the wheel proving it. When she gave her keys to Tod, Bill said, "OK, let's do this. Tod, you follow me about a mile down the road to the start. Anna and Jesse, wait here at the intersection. The next time you see me, I'll be crossing the finish line after spanking Tod's butt!"

Can you guess what happened? If you guessed the race did not go as planned, you'd be right. However, it's important not to cut to the chase too quickly, so here's the rest of the story.

The four Soldiers met a month earlier through a local car club and became friends. On this particular Saturday evening, they decided to hang out, play video games and watch movies until Anna signed out on leave. She planned to hit the road for a 1,000-mile drive to her parents' home (leaving at midnight was a risky choice, but that's a topic for another article). As soon as she signed out, the four Soldiers drove to a secluded area to shoot off some fireworks. She drove her car, which had a 3.0-liter V-6 engine, while Bill drove his vehicle, which was equipped with a 2.4-liter four-cylinder engine.

After shooting off fireworks, Bill challenged Anna to a race, claiming he was a better driver and could win even though his car had the smaller engine. Bill had a history as a high-risk Soldier, having caused an accident a couple of years earlier. He had also collected several speeding tickets, including one that cost him his driver's license. Additionally, his unit identified him as its No. 1 high-risk Soldier—not only because of his driving, but also because of his conduct on and off duty. In fact, the unit intended to discharge him from the Army.

Anna had recently returned from Iraq and was, by all accounts, an outstanding Soldier. She was, in fact, in the process of submitting a packet to attend the West Point Prep School. However, she was afraid to race her car that night and, instead, allowed Tod to race for her. Tod was 17 years old and only had a learner's permit. His unit discovered he'd bought a car and, three days before the accident, his platoon leader ordered him not to drive. Tod's inexperience made him dangerous behind the wheel.

It's time to fast-forward to the race.

Bill and Tod dropped off Anna and another Soldier, Jesse, at an intersection that would serve as the end of the race. They then drove back up the road, did a U-turn and lined up beside each other.

When Bill blew his horn the third time, both drivers hammered their gas pedals. Anna's car was the faster of the two. Tod was doing nearly 125 mph when he lost control in a curve and began sliding sideways down the shoulder toward Anna and Jesse. Anna saw the car coming toward her, turned and ran away from the street. Jesse tried to run along the shoulder, but was struck by the car and hurled 50 feet into a ditch on the far side of the intersection.

The car didn't roll, but slid to a stop instead. At first, Tod, Anna and Bill didn't realize Jesse had been hit. After a few minutes, Bill realized Jesse was missing and searched until he found him. Tod called 911 and police and emergency services arrived on the scene within minutes. However, Jesse was declared dead at 1:36 a.m. by a justice of the peace. For the sake of bragging rights in a street race, one Soldier was dead and two others potentially faced prison time for felony drag racing. This was not part of their plans for that night. But on the street—where there are no controls to keep racers or spectators safe—anything can happen.

> "Leaders **NEED** to **ENGAGE** their Soldiers and Soldiers need to **TAKE CARE OF EACH OTHER** to **STOP** such tragic and **NEEDLESS LOSSES**."

What can we learn from this tragedy? First, bravado or trash talk might be OK on the track, but when it leads to Soldiers street racing, it can be a setup for disaster. Many Soldiers own high-performance vehicles. In fact, Jesse had a reputation for doing burnouts, speeding and weaving through traffic in his vehicle. Leaders need to identify Soldiers with high-performance vehicles and encourage them to find a legal and safe outlet for their "need for speed." For example, the Sports Car Club of America sponsors races where Soldiers can test their skills without risking their lives. Beyond that, Leaders also need to find out about local car clubs. While many of these clubs provide a positive environment where Soldiers can show and legally race their cars, others are knee-deep in street racing. Local law enforcement can help leaders identify which clubs to avoid.

As stated earlier, Bill was a problem child and on his way out of the Army. Unfortunately, Soldiers like Bill can often influence younger, less-experienced Soldiers and lead them into dangerous situations. Leaders must take effective action to prevent that from happening.

Street racing is a dangerous activity that is on the rise nationwide. It's important to learn the hard lesson from Bill, Tod, Anna and Jesse's experience. Leaders need to engage their Soldiers and Soldiers need to take care of each other to stop such tragic and needless losses. «

SEAT BELTS SAVE LIVES... IF YOU WEAR THEM

MICHAEL WOOD
U.S. Army Combat Readiness/Safety Center
Fort Rucker, Ala.

Since the beginning of Operation Iraqi Freedom (OIF) and Operation Enduring Freedom (OEF), the Army has lost many young men and women to enemy actions. When Soldiers engage the enemy, there is an expectation that lives will be lost. But to lose Soldiers in Army Motor Vehicle (AMV) accidents because they did not wear a seat belt or gunner's restraint system defies understanding and is unacceptable.

When reviewing OIF and OEF AMV accidents, there is a constant theme – fatalities and injuries as a result of occupants not wearing seat belts. Seat belts and gunner's restraint systems, when used properly, will reduce the loss of life and help reduce the severity of injuries.

Last year, the Army experienced 22 AMV accidents that resulted in the loss of 35 Soldiers. Rollover accidents accounted for 20 of those accidents and the loss of 33 Soldiers. A major percentage (80 percent) of these fatal rollover accidents occurred during OIF and OEF, where the culture is to not wear seat belts. Many Soldiers in theater believe wearing a seat belt or any form of restraint system will adversely affect their ability to egress a vehicle in a firefight or improvised explosive device (IED) encounter. Leaders must change this mind-set by enforcing Army standards and educating their Soldiers about the benefits of wearing a seat belt.

Seat belt use increases a Soldier's chances of surviving a rollover accident. In a rollover, unrestrained occupants can be ejected from the vehicle or thrown around inside. Soldiers ejected during a rollover can strike objects outside the vehicle, be pinned beneath the overturning vehicle or be struck by another vehicle; any of these incidents can cause serious bodily injury or death.

It doesn't matter what kind of vehicle incident you're involved in, whether it's an IED encounter, being struck by a local national vehicle or losing control of a vehicle and overturning. Without the use of restraint systems, occupants are at greater risk for injuries. The unbelted driver will be unable to maintain control of the vehicle, and unbelted occupants can lose situational awareness during the incident and be unable to make the correct life-saving decisions.

Wearing seat belts is not an option, it's an Army requirement. Seat belts save lives and help reduce the severity of injuries resulting from motor vehicle accidents. It's the responsibility of each Soldier and Leader to enforce this policy. Seat belts are the most valuable safety devices in vehicles today. Buckle up for safety; it's the right thing to do. «

FYI

The Army Materiel Systems Analysis Activity (AMSAA) conducted an analysis of HMMWV accident fatalities from 2003 to the first quarter of 2006. The AMSAA's findings include:

- **HMMWV accidents in Iraq resulted in 88 fatalities. HMMWV rollover accidents accounted for 65 of these fatalities.**
- **Of the occupants who were wearing their seat belts during a rollover accident in a HMMWV, 94 percent survived.**

WHY SHOULD I WEAR A SEAT BELT?

- **Seat belts are designed to prevent occupants from striking the vehicle interior, equipment and other occupants.**
- **Seat belts are designed to prevent occupants from being ejected from the vehicle.**
- **Seat belts restrain occupants in their seats, enabling them to maintain situational awareness during an accident.**
- **Seat belt use is Army policy (Army Regulation 385-10, *Army Safety Program*, paragraph 11-4).**
- **According to the National Highway Traffic Safety Administration, in 2007, the seat belt use rate in the U.S. reached an all-time high. Seat belts save about 15,000 lives each year.**

SAVED BY THE BELT

BY THE NARROWEST OF MARGINS

REBECCA KNIGHTLY
Anniston Army Depot
Anniston, Ala.

If you think seat belts are optional—think again. On average, between 36,000 and 40,000 Americans die on the road each year. While it isn't possible to prevent every accident, more lives could be saved by wearing seat belts. A few years ago, I was in a horrible accident where paramedics said I would've been thrown through the car window and killed had I not been wearing my seat belt. And what is so ironic is that I'd been notorious for not buckling up. Thank God I did that day.

> "**SURVIVING** such a horrible **ACCIDENT** was a **HARD WAY** to **LEARN** the **IMPORTANCE** of **USING SEAT BELTS**."

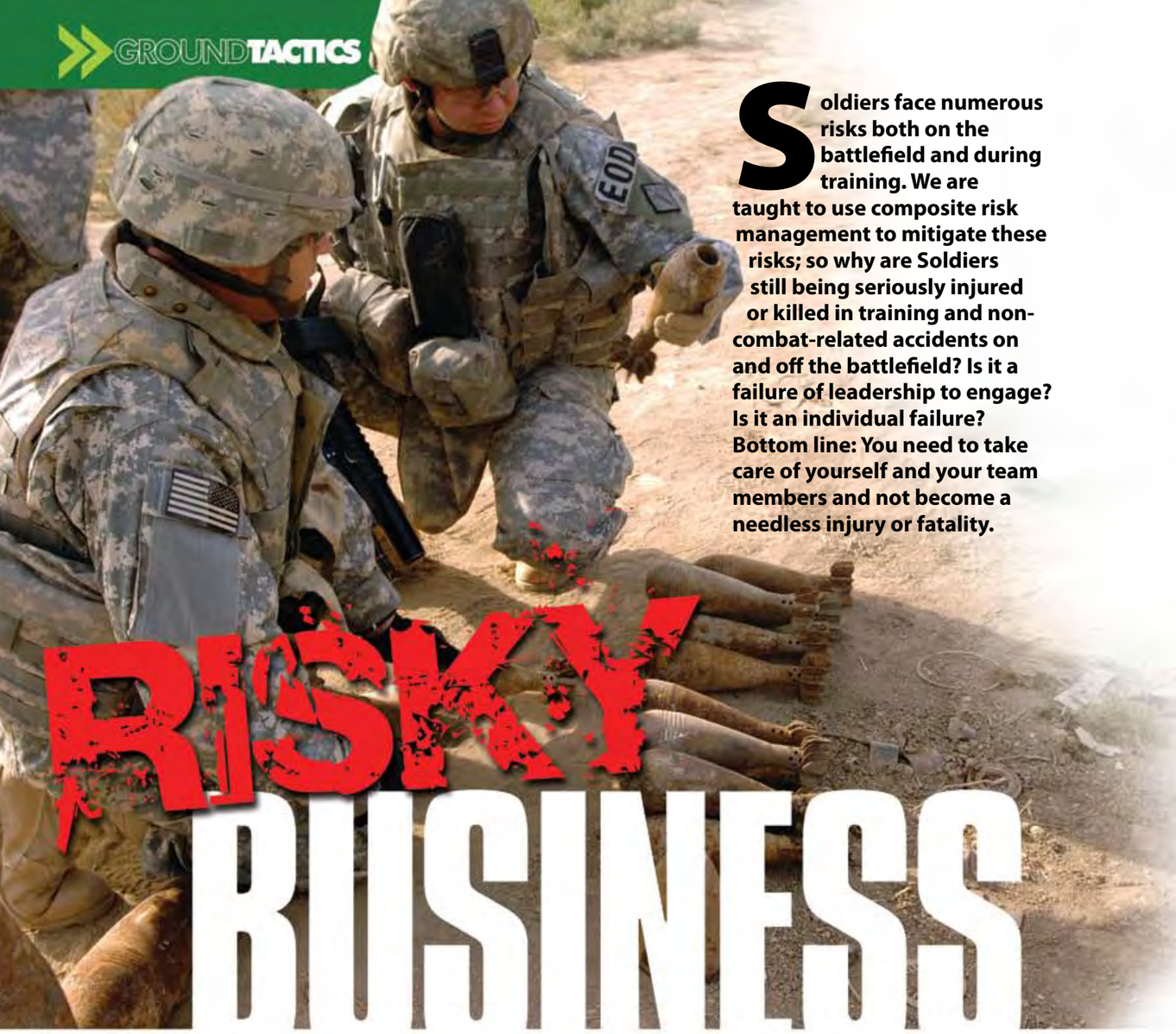
It was a Wednesday afternoon and my two older sisters came to pick me up after ball practice. The house was only about 10 minutes down the road, so my oldest sister decided to let my 16-year-old sister drive us home. It was her first time behind the wheel, so I began joking around, saying, "Hey, I think we should put our seat belts on. She doesn't know how to drive!"

About two minutes into the trip home, the car went off the road. My sister was concentrating more on the gearshift than driving and we were beginning to drift toward the right shoulder. I grabbed her shoulders to get her attention and screamed, "Mailbox!" She overcorrected to the left, spun the car sideways on the rain-slicked road and went into oncoming traffic. There, a red pickup struck the front passenger-side door of our Toyota Corolla. As we went off the road and into a ditch, we slammed into a boulder. The boulder crashed through the right-rear passenger-side door where I was sitting. The impact wrapped my right leg behind my head and caused a compound fracture of my femur. In addition, I suffered a massive head injury and immediately went into a coma. When I woke up in the hospital nine days later, doctors told me I had almost died on the way to the hospital. They were certain that if I survived, I would be permanently brain damaged. During the following 11 months, I received physical therapy and progressed from using a wheelchair to walking on crutches and, later, to using a walker. Today, I am fully recovered and as good as new.

Both of my sisters also survived, thanks to their seat belts. My older sister, who had given birth two weeks before the accident, suffered a ruptured spleen and other internal injuries. My other sister suffered three broken ribs. We were all fortunate to be alive.

Looking back, I am grateful I buckled up that day—even if I just did it out of kidding my sister. My comments about her driving abilities proved more prophetic than I could've imagined. Surviving such a horrible accident was a hard way to learn the importance of using seat belts. Afterward, I understood why my parents always insisted we buckle up.

When it comes to accidents, most people think, "It'll never happen to me." However, the truth is, it can happen to you—so you'd better be prepared. If I hadn't been wearing my seat belt that day, I would've wound up in a coffin instead of a coma. Before I turn on the ignition, I make sure everyone is buckled up. Before you hit the road, you should too! «



RISKY BUSINESS

Soldiers face numerous risks both on the battlefield and during training. We are taught to use composite risk management to mitigate these risks; so why are Soldiers still being seriously injured or killed in training and non-combat-related accidents on and off the battlefield? Is it a failure of leadership to engage? Is it an individual failure? Bottom line: You need to take care of yourself and your team members and not become a needless injury or fatality.

Since October 2007, there have been at least three fatalities and numerous other serious injuries due to ammunition- and explosives-related accidents. These type accidents can happen to Soldiers while training stateside or deployed overseas in combat. In a recent accident on a post in the United States, a Soldier was killed when a live round became mixed with dummy ammunition being used in a "dry-fire" demonstration. Investigation into the accident revealed this was not an isolated case, and there were other events where live, blank and/or dummy ammunition had been mixed.

At a number of locations, similar examples of poor ammunition control have been discovered, including storage of munitions in non-licensed facilities, mixing non-compatible munitions, improper storage of non-standard munitions and explosives, lack of accountability for munitions and failure to identify and enforce authorized storage limits. Each of these examples indicates a serious breakdown in the ammunition and explosives safety program.

As Vice Chief of Staff, Army, Gen. Richard A. Cody stated in a message to all Army activities, "Unless leadership and individuals alike take immediate steps to review and assess their ammunition and explosives procedures, training programs, storage licenses and accountability standards, similar future events are apt to occur. Positive control of ammunition and explosives is mission essential."

RONALD THORNHILL
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In an incident at a forward operating base in Iraq, two Soldiers were cleaning the front yard of their living area when they dug up what was described as a 10-inch-long yellow pipe. The item had a thick covering of dirt, which one of the Soldiers attempted to remove by striking it against a wall, causing it to detonate. One of the Soldiers was killed and the other seriously injured. From debris at the scene, explosive ordnance disposal confirmed the item was a BLU-97A/B or BLU-97B/B submunition—an unexploded ordnance (UXO). This area had been attacked by U.S. forces earlier in the war and there were reports of numerous other submunition finds in the vicinity within the past several months.

When Soldiers encounter UXO, they should always follow the three Rs of explosive safety:

- Recognize the item is a munition.
- Retreat from the munition; do not touch or disturb it, but move carefully away, walking out the same path the area was entered.
- Report the munition and its location.

In another incident, during a unit ammunition turn-in in Iraq, a Soldier attempted to remove duct tape from around the fuze of a grenade-type munition. While removing the tape, the Soldier accidentally pulled the pin and the charge exploded, severing the Soldier's arm and causing severe shrapnel injuries to his leg and face. Two other Soldiers were also injured.

As with any type ammunition, grenades should always be handled with extreme caution. Soldiers should never attempt to remove tape from any grenade-type ammunition item. When handling grenades, remember the following:

- Do NOT tape the safety lever or safety pin.
- Do NOT bend, tamper, modify or otherwise alter the safety pins or safety levers.
- Grenade safety devices are designed as part of the grenade to keep you safe.

In yet another recent explosives-related incident, a Soldier was killed when a rocket propelled grenade he had collected from a weapons cache detonated in his backpack. At the time of the explosion, the Soldier was waiting with other Soldiers for a flight via a CH-47. Three of those Soldiers were also injured, one seriously. Soldiers must understand recovered enemy ammunition is not a souvenir or war trophy; it's dangerous and could cost them their lives.

Could all the tragedies above been prevented? Of course; it's just a matter of Leader engagement, proper training, recognizing hazards, assessing the risks and mitigating those risks. Above all, Soldiers must exercise situational awareness and self-preservation. Remember, if you did not drop it, do not pick it up! «

LEAVE IT ALONE!

- **Never pick up an object if you're not sure what it is.**
- **Ensure personnel are aware of area hazards and history.**
- **Recognize the hazards posed by seemingly innocent-appearing objects.**
- **Report suspect items.**

DID YOU KNOW?

Statistically speaking, ammunition and explosives accidents increase in the springtime.

BIKING BOOZING BLEEDING

NAME WITHHELD BY REQUEST

It was June 28, 1997—the night of the Mike Tyson versus Evander Holyfield fight. Everyone remembers that as the night Tyson bit off Holyfield's ear. However, I remember it for a different reason. I was 21 years old, on top of the world and the proud new owner of a 1996 Honda CBR 600 F3. Man, was it fast, but I already desired a faster bike. Normally, I wore the proper personal protective equipment, including a helmet, gloves, a heavy leather jacket and leather boots. However, this night, I wore only my helmet, a long-sleeved shirt, boots and shorts.

I was attending a friend's party on base about two miles from my barracks. Naturally, there was a keg and, of course, I was drinking. I know—you can already see the recipe for disaster starting to take shape. I had a couple more drinks and headed out with a bunch of people who were leaving the party. One Soldier was doing the "right thing" by offering rides to anyone who needed a lift home. My motorcycle-riding buddy and I actually got in his truck and started to buckle up. (This is the moment I wish I could go back and recapture.)

At the last minute, I became concerned that the party host's kid might play with my bike and accidentally pull it over on himself. Because of that, I made the decision to ride my bike the short distance back to my barracks. No problem, right? My riding buddy supported my decision and decided to follow me home on his bike.

We both cranked up our bikes and hit the road. As soon as my bike topped 10,000 rpm, the adrenaline and alcohol in my bloodstream mixed and any semblance of good judgment went out the window. I was now a slave to my adrenaline addiction.

I raced off, leaving my buddy in the dust as he tried to keep up. I made an "oops" and accidentally flew past my turn. I turned around and accelerated to nearly 100 mph before slowing to about 70 mph and attempting to turn onto the road that led to my barracks. However, I was fresh out of luck and talent. I turned too early and went onto the grass. My bike quickly slipped out from under me, slamming my right shoulder onto the ground. I remember hearing the sound of plastic scraping and breaking.

Once I stopped sliding, I quickly stood up to make sure I was still in one piece. I located my bike and attempted to pick it up. However, I couldn't lift it because the handlebars were broken in half. When I looked behind me, I saw I'd slid nearly 200 feet! Then I saw something else that still horrifies me today. I saw the twisted remnants of a stop sign that my bike had sheared off at the bottom. Had I been on the bike when it slid through that stop sign, I would have been cut in half just above the pelvis. To this day, I don't know how I managed to avoid being more seriously injured. As it was, I'd burned a hole in the toe of each of my boots and had some gouges in my right shin. I was lucky that night because things could've ended up a lot uglier. Since then, I have made it my mission to tell other riders about this—the stupidest thing I have ever done. If it helps even one rider decide not to mix alcohol, adrenaline and speed—then it was worth it. «

HONE YOUR SPORTBIKE SKILLS

EARNEST EAKINS
U.S. Army Combat Readiness/Safety Center
Fort Rucker, Ala.

The "Biking—Boozing—Bleeding" article is a perfect example of risk acceptance. The rider accepted the risk associated with drinking and riding, even though he was fully aware of the possible consequences. Later on, when he had the opportunity to reconsider the cost of his decision, he wished he'd chosen not to ride. Tragically, many riders don't survive their risky decisions to reconsider them later. Thankfully, that was not the case in the author's story.

The Army recognizes that many fatal motorcycle accidents are caused by riders choosing to accept risks beyond their skills or ability to handle. As a result, the U.S. Army Combat Readiness/Safety Center has partnered with the Motorcycle Safety Foundation (MSF) to help create a new course dedicated to sportbike riders. The *SportBike School*, due to be fielded during this year's 101 Critical Days of Summer Safety Campaign, will allow riders to more accurately assess risks while honing their skills to be safer on the road. As in previous MSF courses, the school includes both classroom and range segments. In the classroom, riders are given a risk perception quiz where they are asked if they think they are overly risky. Once riders answer that question, they take a risk acceptance inventory allowing them to compare their risk perceptions with those of others. Riders are then shown where they appear on a graph measuring perceived risk levels. Working from that graph, instructors show riders how increasing their skills—even while maintaining the same risk acceptance levels—can reduce accidents.

To reflect the handling characteristics of sportbikes, the school's range exercises are more difficult and done at higher speeds than previous MSF courses. During the range exercises, riders are placed in situations where they must stop or maneuver quickly. For example, during the stopping demonstration, riders get to see how even modest increases in speed can dramatically affect stopping distances. The goal is to give riders a "reality check" to help them avoid accidents and live to enjoy their sport.

For more information on the course, interested riders should contact their installation's Army Traffic Safety Training Program manager. «

THE INVISIBLE ENEMY

CHIEF WARRANT OFFICER 3 MARCELO ASSUMPCAO
U.S. Army Combat Readiness/Safety Center
Fort Rucker, Ala.

Every year, the Army loses Soldiers during the summer months to an invisible opponent—heat. Fortunately, these needless losses and other heat-related injuries can be prevented by the application of composite risk management (CRM).

The nature of our business requires Soldiers to constantly train and operate in severe weather conditions with extreme temperatures; however, heat injuries can occur even when temperatures aren't extreme.

The cumulative effects of strenuous activity over a period of time can result in a Soldier becoming a heat casualty during low-risk conditions. Leaders must remain engaged in order to provide the best protection for our Soldiers, and the best protection is prevention.

There are several control measures that will aid in heat-injury prevention, including monitoring wet bulb temperatures, paying closer attention when temperatures rise or when mission-oriented protective posture suits are worn, adjusting work and rest schedules and ensuring Soldiers are acclimated, conducting briefings on heat injury symptoms, taking into account earlier exposure to environmental heat and possible dehydration and using the buddy system.

> "Leaders **MUST REMAIN ENGAGED** in order to provide the **BEST PROTECTION** for our Soldiers, and the best protection is **PREVENTION**."

Another control measure several units have implemented is the use of a Soldier tracking system, which is capable of providing real-time tracking of Soldiers. The Soldiers' movements are monitored and displayed by a system that uses global positioning system (GPS) position reports provided by the Soldiers' player unit radios and transmitted to a transportable relay radio. The position reports are then routed through computers to workstations that display the Soldiers' positions on an aerial overlay of the land navigation area. The system is contained and does not rely on a Web-based interface.

In addition to prevention, it is critical Leaders and Soldiers are able to identify and initiate the appropriate treatment measures for the different types of heat injuries. The most severe heat-induced illnesses are heat exhaustion and heat stroke. If action is not taken to treat heat exhaustion, the illness could progress to heat stroke and possibly death. To help avoid heat-related injuries, Leaders and Soldiers should:

- Drink plenty of fluids. In hot environments, it's possible for the body to lose one liter of fluids per hour. Thirst is not a good indicator of fluid loss. Don't wait until you're thirsty to drink fluids.
- Be aware of their environment. If you work in the heat or around heat sources, take whatever steps are possible to control the heat externally. It's also recommended that ice sheets are readily available during high-risk activities to reduce the severity of a heat injury.
- Take frequent breaks. As the temperature increases, more frequent breaks are needed to stay cool.
- Wear proper clothing. Loose, lightweight fabrics encourage heat release.
- Acclimatize. It takes at least seven to 10 days to get used to working in a hot environment.
- Stay in shape. A healthy heart and good muscle tone work more efficiently and generate less heat.
- Eat light during the workday. Hot, heavy meals add heat to the body and divert blood flow to aid with digestion. Normal dietary intake typically replaces all salt lost during the day, so there is no need to take salt supplements.
- Be aware of special heat stress risks. Caffeine, alcohol, diabetes or medications for high blood pressure and allergies can increase the risk of heat stress.

CRM should be a continuous process applied across the full spectrum of Army training and operations. Through the engagement of our Leaders, we can help ensure Army Safe is Army Strong!

PAY ATTENTION TO DETAIL

PERRY HUMBLE
U.S. Army Combat Readiness/Safety Center
Fort Rucker, Ala.

Two of my buddies and I took a week-long motorcycle trip last fall to the Great Smoky Mountains. We chose October so we could enjoy the changing leaves and escape the oppressive heat of summer. Although we were all in our 50s, we'd started riding back in our teens. A couple of us had taken Motorcycle Safety Foundation training and we'd all been riding regularly.

We planned our route predominantly on country roads to avoid the high speeds normally found on interstates. While planning the trip this way showed a high risk on my TRiPS report, I figured it would be safer than riding at higher speeds in congested interstate traffic. This reasoning was proven correct on the last day of the trip, but more on that later.

We had our bikes inspected and serviced. We developed a checklist, including tools, money, maps, travel routes, emergency phone numbers, first-aid kit, rain gear and leathers. Just like preparing for an aviation mission, we covered all the obvious risks and planned for the unexpected. Our plans included doing a T-CLOCS inspection—checking the tires, controls, lights, oil, chassis and stands—each day before beginning our ride. To increase our visibility to traffic, we put reflective vests over the bags on the backs of our bikes. I also put a reflective belt on my handlebar bag. We rode in a staggered-right formation unless conditions dictated otherwise. We agreed on hand signals and short phrases to use should there be an emergency or a need to stop. We planned plenty of fuel and rest breaks. In aviation, you learn early on to never miss an opportunity to take on fuel or drop off water. We briefed the trip on three different occasions and were satisfied we were ready to go on the appointed day and time. We also provided our Families with copies of our daily routes and destinations.

The weather was warm and muggy on the morning we left for our adventure. About 20 minutes after our first fuel stop, the lead rider hit a rattlesnake with his rear tire, sending it flying through the air (in my direction, of course). Everything went into slow motion. The serpent landed on the road in front of me. As it hit the ground, it coiled with its tail sticking up and its head in the strike position—that's how I knew it was a rattler. I was about to say "rattlesnake!" when I rolled past it. I was glad I got by before it got even.

The rest of that day was uneventful. The following day, we encountered rain during the afternoon. However, we were prepared, donning our rain gear and reducing our speed accordingly. The rest of the trip unfolded as planned, as we had the blessing of seeing some beautiful scenery during our ride.

However, we weren't home safe yet. As we headed out on the final day of our trip, we had two close calls with vehicle (cage) drivers on the interstate. The first was when a pickup driver either failed to notice we had right-of-way or refused to yield it during a merge and cut off the lead bike. The rider saw the pickup out of the corner of his eye, just as I called out to warn him. Fortunately, my friend avoided what could have been a catastrophic collision for both of us. That reinforced the fact that riding a motorcycle is like flying a helicopter—you must constantly have your head on a swivel, searching for the dangers around you.

We regrouped, stopped for lunch and discussed the near miss. Afterward, we got back onto the interstate. After riding a few miles, we hit heavy traffic. Most of the drivers were going well above the speed limit (no surprises here)—which is where we ran into our second problem. We were doing the speed limit; however, one particular driver apparently decided we were occupying the space he wanted and weren't moving fast enough to suit him. According to our trail rider, the car cut in so close behind me (I was the second rider in our group), it looked like he intended to hit both me and the lead rider. (Could this have been an example of road rage?) But, again, through hand signals, teamwork, God's help and paying attention to detail, we managed to escape an accident.

So what's the point in this story, you might ask? We paid attention to detail during the planning, execution and post-ride phases of our trip, identifying every possible risk we could imagine. Because we did that, we weren't caught by surprise and forced to improvise when things went wrong.

There's an old adage that says you should operate your vehicle as if everyone else on the road is out to get you. When you're on a motorcycle, that's not paranoia—that's preparation. Because other motorists are often distracted, we must make it our job to avoid their mistakes. We must constantly be on the alert, paying attention to details. For us riders, those details can be the margin between life and death. «

> "Our plans included doing a **T-CLOCS INSPECTION**—checking the **TIRES**, **CONTROLS**, **LIGHTS**, **OIL**, **CHASSIS** and **STANDS**—**EACH DAY BEFORE** beginning our **RIDE**."

Pssst … safety pros. Want to know a tool I used to help reduce accidents 75, 25 and 55 percent in my last three safety offices? I'll give you a hint; you're seeing it with your own eyes right now. It's the media.

MEDIA AND SAFETY: A GREAT MATCH

CHARLES RYAN
19th Sustainment Command (Expeditionary)
Camp Henry, Korea

There are numerous outlets to spread our safety message – print, radio, television and the Internet.

I've been welcomed with open arms here in Korea by the various media outlets. It's a great working relationship as, overtly, I give them timely and sound safety products, but, covertly, I help them meet their monthly news material quotas. Helping each other out is the foundation of a good working relationship. Being located outside the continental United States (OCONUS) with American Forces Network (AFN) nearby is a plus. I see stateside media venues like post newspapers and TV productions such as "In Step with Fort Riley" as one example of a great resource to share safety information to your respective audience.

With television, I've created a "Safety Guy" persona, complete with a reflective outfit topped with an orange hard hat that is known to viewers of AFN-Korea. I average a 29-second Public Service Announcement (PSA) per quarter and try to deliver it with a little humor. I'm often told my best "Safety Guy" PSA is the one where I offer water to a Soldier running a race and he bats the cup out of my hand, splashing me in the face.

Through print, I've written columns in the Korea-wide periodical (*Morning Calm*) and the 2nd Infantry Division's newspaper. Soon, I'll post a "Safety Sez" column in my next unit's digital newsletter at the 19th Sustainment Command (Expeditionary). Whether I use print or the Internet, I know there are Soldiers that will read my column. I keep it short, timely for that month's common risk and written to the target audience – my junior Leaders and Soldiers. I'd "guesstimate" the 30 minutes it took to write a hydration safety column reduces the chance my unit will suffer a hydration injury by 30 percent. Sounds like a good time investment to me.

But it's probably my efforts with AFN-K radio that best delivers my safety tips. I've recorded more than 25 radio PSAs over the past few years – some funny ones with one- and two-star commanders. During football season, I've hosted the "Football Guru Show," which features weekly and grand prizes for the listeners who predicted the most outcomes of NFL games correctly. Every game, I spoke about safety during the show, squeezing in a safety tip. For example, "The Patriots are on FIRE now, just like your kitchen could be if you leave cooking food unattended." Each summer, I also hold a "Safety Phrase that Pays" contest, where a PSA saturates the airwaves each week with a different safety phrase. When the DJ asks for a caller, the person that calls in with the phrase wins a gift coupon from AAFES. Safety, when linked with prizes, is downright palatable to Soldiers, civilians and dependents.

One by-product of media and safety was demonstrated by 8th U.S. Army Korea winning the Army Headquarters Safety Award in 2005 and 2007. Another is we are above the medium with the Army Readiness Assessment Program (ARAP) question of "Does the unit show an interest in safety?" Now, I can't actually prove my media blitz had anything to do with the reduction in our accident numbers; however, and most importantly, I can't prove it didn't! ≪

> "There are **NUMEROUS OUTLETS** to spread our safety message – **PRINT**, **RADIO**, **TELEVISION** and the **INTERNET**."

Overwater mission risk management is a complex and important planning consideration. Commanders should research options, assess risks and document the application of controls in unit standing operating procedures (SOPs). Just like all other programs, after implementation, you should periodically review the SOP and training programs and make necessary modifications.

RISK MANAGEMENT FOR OVERWATER MISSIONS

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

Army aviation's global operational area often necessitates travel over large bodies of water. During the previous five years (fiscal 2002 to 2007), Army aviation has experienced nine Class A and one Class B accidents involving rotary-wing aircraft crashing into water. The Army issues overwater survival equipment to aviators whose missions may take them over wide expanses of open water. Overwater aviation life support equipment (ALSE) includes an inflatable life preserver unit, exposure suit, life raft (SRU-37/P) and the Survival Egress Air (SEA) Mark II.

In the U.S. Army Forces Command (FORSCOM) Supplement 1 to Army Regulation (AR) 95-1, *Flight Regulations*, all helicopter crewmembers conducting overwater operations beyond the gliding distance to land require training in the use of the SEA system and require the wearing of an approved flotation device. To prepare for a water survival situation, ensure you have appropriate training and the required survival equipment. This is best accomplished by knowing what survival equipment is available through the Army supply system and having suitable equipment available commensurate with your unit's operational environment and mission. The unit's ALSE officer, technician and flight surgeon can best advise leaders regarding the equipment needed to resource the unit mission.

Part of your unit training for sea survival should include how and when to use the survival radio. If your unit has multiple models of survival radios, each type of radio should be addressed in unit training. Additionally, threats from and effects of exposure and how to best mitigate these through the use of sunscreen, shelter and clothing should be included in the SOP and unit training. Consideration should be given to including psychological issues related to water survival, as well as a post-traumatic stress disorder management plan, in your unit's SOP.

In the event you have a raft survival situation, you should be aware of planning and psychological issues to decrease your risk level and increase the odds of survival. Psychological issues can include panic effects such as freezing, weeping or screaming irrationally for help. Training in open-water survival techniques and knowing what to expect can reduce the odds of panic. Also, knowledge of the operational characteristics and confidence in the quality of ALSE can ease Soldiers' minds during a stressful sea survival situation.

FYI

The U.S. Army Materiel Command project manager for Air Warrior manages the ALSE program for Army aviation and can be contacted at https://peosoldier.army.mil/multimedia.asp).

A feeling of hopelessness can be dangerous to the survival of downed aviators and their crews. This is true in any survival situation, but can be especially true during a water survival situation. Hopelessness can feed on itself and, once started, can rapidly become more difficult to overcome. It is important to maintain hope, as well as a good sense of humor.

Fuel, oil and other chemical contaminants are a real possibility if an aircraft impacts the water. Swallowing fuel, oil and saltwater often results in coughing and vomiting. Often, the eyes will be sore from saltwater and petroleum contamination. Over time, these injuries will usually clear up. Upon rescue of the affected crewmembers, cleaning the skin with mild soap and treating the eyes with Bacitracin ointment (NSN 6505-00-582-4190) will help. Warm milk with honey or sweet tea can help soothe an upset stomach if medical treatment is unavailable.

Life raft ailments can derive from saltwater exposure, lack of drinking water, exposure to the elements and motion sickness. Cracking skin occurs after the skin is exposed to saltwater spray. To mitigate this threat, cover your skin as much as possible and protect exposed skin with sunscreen. Prolonged exposure to saltwater spray can lead to saltwater boils. Do not squeeze or prick

the boils or make any attempt to remove excess liquid in them. Boils should be covered with a dressing. Cracking and parching of the lips can occur when exposed to the sun, wind, cold and/or salt spray. The best way to prevent this is through the use of lip balm.

The lack of drinking water can result in a relatively minor, but annoying, ailment known as dry mouth. This can easily be remedied by rinsing the mouth with drinking water, chewing gum or sucking on buttons. A more serious problem associated with the lack of drinking water is urination problems. Urine can become dark and possibly thick due to lack of water. To stimulate passing urine, it sometimes helps to dangle your hand in the water. For consideration and planning purposes, Technical Bulletin MED 577 states for a temperate environment, 1.5 gallons per person per day should be planned. While this amount is probably impractical to carry in the ALSE vest, it does illustrate some of the planning challenges in developing an overwater survival SOP.

Motion sickness or, specifically, sea sickness can occur as a result of the continual movement of the liquids in the inner ear. This movement confuses the sensory balance, resulting in loss of balance and gastrointestinal disturbance. To counteract this effect, a strategy of drinking as much fresh water as possible and eating small amounts at regular intervals can help. The use of motion sickness tablets is usually of no value if not taken well in advance of entering the water.

Upon rescue of the downed aircrew members, a warm bath, dry clothing, protection from the sun, fresh drinking water and food will assist greatly in their recovery. If the crewmembers were adrift for many days and experienced shortages of food and/or water during this period, they will more than likely be weak and dazed. They have probably experienced some degree of environmental exposure. Treat them for hypothermia or heat stress/stroke as deemed appropriate. Offer them warm drinks, but warn them not to drink too quickly (sip rather than gulp), which may induce vomiting. Soup or bread can be offered sparingly. Any food offered should be easily digestible. It is not uncommon for the survivor to experience swelling of the legs. The swelling will subside after a few days on land. Obviously, anyone experiencing a survival situation should be evaluated and treated as deemed necessary by the unit's flight surgeon.

In FORSCOM Supplement 1 to AR 95-1, underwater egress training is also mandated for units that have an overwater mission as part of their contingency plans or humanitarian mission. Think about New Orleans and Hurricane Katrina. Before Hurricane Katrina, who would have thought flying into downtown New Orleans would have been an overwater mission? If your unit has the potential to be called to a flood-prone area to provide humanitarian assistance, overwater survival needs to be considered in your SOPs and training. For training in overwater survival, Lear Siegler Services, Inc., provides Helicopter Overwater Survival Training (HOST) at Fort Rucker. The initial course is two days and the recertification course is one day. Additional information on HOST can be obtained by contacting Karen Roberts at robertsk@lsirucker.com. «

DID YOU KNOW?

- **Deep ocean currents generally do not affect boats or rafts on the surface, but are involved with the overall ocean movement.**
- **Surface currents are constant for the most part and vary only with the seasons. Surface currents are described by the set (direction it flows) and the drift (velocity it flows).**
- **Tidal currents are of concern, especially when approaching coastal waters. Tidal currents are a result of the rise and fall of the tide. Tidal current tables should be studied for the operational area. There are four maximum currents for each tidal day (24 hours and 50 minutes).**
- **Wind-driven currents are continuous strong winds that can affect the surface currents slightly. The direction of wind-driven currents generally is slightly to the right of the wind direction for the northern hemisphere and slightly to the left for the southern hemisphere.**

DUSTOFF!

OVERWATER PERSONNEL RECOVERY

CHIEF WARRANT OFFICER 4 STAN STACY and
CHIEF WARRANT OFFICER 2 BRIAN R. JOHNSON
3-2 General Support Aviation Battalion
Eighth U.S. Army

Off the west coast of Korea in an area labeled Air Combat Maneuvering Instrumentation Point-Alpha, a flight of two UH-60As from Charlie Company, 3-2 General Support Aviation Battalion (GSAB), conducts some of the most rigorous training in Army aviation. They are training for the overwater personnel recovery (OWPR) mission.

Charlie Company routinely conducts this mission in support of 4-2 Attack, part of the 2nd Combat Aviation Brigade, which frequently operates overwater along the Korean coastline. This synopsis briefly outlines some of the training requirements, procedures and control measures associated with the OWPR mission.

Because of the inherent risk in overwater operations, the mission is always conducted by two aircraft unless approved by the brigade commander. The aircraft must also have out-of-ground-effect hover power and single-engine flight capabilities. Each aircraft is configured as follows:

Aircraft Equipment

- Calibrated/operational radar altimeters
- Operational attitude indicators (2)
- Operational vertical speed indicators (2)
- Operational global positioning system (1)
- Voice-activated warning system

Additional Mission Equipment

- 30- or 50-foot caving ladder
- External hoist
- Heads-up display for each pilot/night vision goggles for all crewmembers
- Blankets/litters (2)
- Survival kit/life raft (1)
- Chemlights (12)
- Cargo straps (4)

One of the aircraft in the mission must be fully qualified. This aircraft serves as the first response to a downed crew in the water. The second aircraft can consist of an instructor pilot or standardization pilot training an unqualified pilot. A fully qualified crewmember must demonstrate knowledge of the following topics:

Individual Training

- Water survival training (dunker/Helicopter Emergency Egress Deployment System (HEEDS)) techniques
- Personal flotation device preflight/wear/and deployment
- Anti-exposure suit wear and capabilities (IAW AR 95-1, mandatory when water temp is below 60 F and at the discretion of the commander between 61 to 69 F)
- Survival kit operations
- Signaling device usage
- Life raft and caving ladder deployment
- Hoist operations
- Aircrew training program/standing operating procedures requirements
- Search and rescue planning and operations
- Personnel recovery (PR) mission organization and communications

On average, training takes three days and a total of 12 flight hours, which can be reduced based on proficiency. The first day of training is daytime only. The second and third days of training are done under day and NVG conditions. Each crewmember is equipped with a personal flotation device, an anti-exposure suit, five red chemlights and a HEEDS bottle.

Weather planning minimums are a 1,200-foot ceiling and three miles visibility. There must be a visible horizon in at least two quadrants. Water temperatures, sea state and distance from shore play a significant factor in determining the risk level associated with a mission. They are categorized as follows:

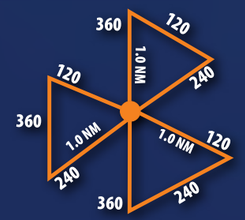
Risk	Water Temperature	Sea State	Distance from Shore
Medium	>50 F	Green (0-3 feet, winds calm to 16 knots)	<20 miles
High	< 50 F	Yellow (4-8 feet, winds 17 to 21 knots)	>20 miles
Extreme High		Red (>8 feet, winds 22 to 64 knots)	

Before conducting overwater training, crews conduct a "feet-wet" check. This consists of checking the auxiliary tanks for proper transfer, verifying and announcing "Bingo" fuel numbers and ensuring each crewmember has turned on their HEEDS bottle. The crew also restates the mission, checks the navigation system and radar altimeters and determines if they need to adjust aircraft altitude or airspeed.

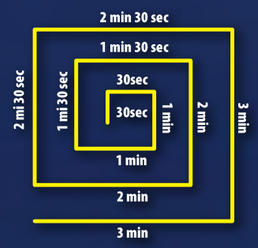
In the event of a downed aircraft, the crew receives an "echo report," which is formatted as follows:

Line	Information
Line 1	Downed aircraft location (usually in lat/long)
Line 2	Number and condition of survivors
Line 3	Method of marking pickup site
Line 4	Special equipment required
Line 5	Security of pickup site
Line 6	Wind speed and direction
Line 7	Sea state
Line 8	Hazards present
Line 8	Position/action of overwater aircraft

Once the echo report is called in, the reporting aircraft orbits at 1,000 feet to help the PR aircraft find the site. Once the PR birds arrive onsite, the other aircraft head to a safe landing area. If they are unable to find the downed crew, the PR aircraft will conduct one of two search patterns. The first one is a concentrated search pattern, which is a series of one nautical mile legs based off the reported location of the downed aircraft. The second is a rectangular box search method. With this pattern, the initial point is also the reported location of the downed aircraft. The search aircraft flies a leg and then turns 90 degrees. After each turn, the ensuing leg is longer than the previous.



Concentrated Search Pattern



Rectangular Search Pattern

> **"WATER TEMPERATURES, SEA STATE and DISTANCE FROM SHORE play a SIGNIFICANT FACTOR in determining the RISK level ASSOCIATED with a mission."**

When the downed aviators are located during night operations, the PR aircraft will continue to make traffic patterns overhead. The crew will deploy chemlights on both sides of the aircraft to create references so they can begin hoist and caving ladder operations. This method is known as "deploying a runway."

If the downed aviator is injured but conscious, they should deploy four chemlights (if able) and lay back in the water with their arms out. If the downed aviator is not injured, they deploy four chemlights, wave a fifth chemlight over their head and remain calm while awaiting rescue.

The primary method of recovering the Soldier is the Jungle Penetrator. The Jungle Penetrator will touch the water to remove the static electricity. If the Soldier is unconscious, the medic will come down and connect him to the Jungle Penetrator. If the Soldier is conscious, the Jungle Penetrator will be deployed with the legs extended. The downed crewmember sits on the legs, detaches the straps, places them around his body and resecures them to the Jungle Penetrator. After the Soldier gives the flight medic a hand signal, he is hoisted out of the water. The hoist has a 600-pound weight limitation and, according to local standing operating procedure, a 20-knot wind limitation (with a 15-knot gust spread). The normal hover height during OWPR is 100 feet and the maximum bank angle is 30 degrees. While a crewmember is on the hoist, the maximum wind limitation is 20 knots and the maximum rate of descent is 1,000 feet per minute.

The alternate method of recovery is the caving ladder. Just like the Jungle Penetrator, the caving ladder must contact the water to remove static electricity. When using a 50-foot caving ladder, the aircraft hovers at 30 feet to ensure the ladder remains in the water. The downed aviator will take the D-ring from their vest and attach it to a rung on the ladder. The crew will pull the downed aviator into the aircraft or retrieve them when they are over dry land. The ladder's wind limitations vary with the ability to keep the ladder in the water. The maximum airspeed with a crewmember attached is 40 knots. Without a crewmember attached, the maximum speed is equivalent to a brisk walk.

Any crewmembers recovered during overwater operations, regardless their apparent condition, will be flown directly to 121st Combat Support Hospital in Seoul for medical evaluation and definitive healthcare.

The OWPR mission provides many unique challenges. Through careful training, planning and execution of OWPR operations, C Co., 3-2 GSAB, helps mitigate the operational risk of conducting maritime counter-special operations forces. Their efforts afford AH-64 crews from 4-2 ATK greater flexibility as they execute their mission and help provide peace of mind should the unthinkable happen. In today's Army, C Co., 3-2 GSAB is the only aviation company that conducts OWPR along with its mission of providing responsive, 24-hour MEDEVAC coverage on a daily basis. Their professionalism, dedication and competence help maintain stability on the Korean peninsula and contribute to a proud "DUSTOFF" legacy.

"Yep, this is another one of those Rucker IP stories."

There I was, a standardization pilot instructing the Instructor Pilot (IP) Course. My student was a combat-seasoned pilot, a chief warrant officer 2 with about 1,500 hours. He had returned from Iraq a couple of months before and, by all accounts, was doing well.

> "When the **TRANSIENTS** were finished, we had registered **120 PERCENT MAST TORQUE** for **TWO SECONDS** and **116 PERCENT ENGINE TORQUE** for **THREE SECONDS**."

It Could've Been Worse

CHIEF WARRANT OFFICER 4 GARY SCHAEFER
A Company, 6th Battalion, 52nd Aviation Regiment
APO AP 96202

We were flying the traffic patterns at Hunt Stagefield and all his maneuvers had been acceptable, with a nice control touch to boot. Nice, I thought, this sure beats flying Flight School XXI students. I finally get to relax and not go home with a knot in my back from the constant IP-ready position.

We finished a low-level autorotation to the ground and I went through a review of the maneuver and provided a critique of how he could improve. With the throttle at idle from the previous autorotation, I told him, "Let's try it again." Now this was simple for me; increase throttle to 100 percent, finish your before-takeoff checks and call for takeoff. This is what I thought, but not what I said. After all, hadn't we just done the same thing about 15 times in the last hour and a half?

As I looked over to the next lane to regain situational awareness of the other aircraft, I felt the aircraft "twist" and noticed the engine noise increasing rapidly. I quickly looked back in the cockpit and noticed the engine torque, mast torque and rotor increasing quickly. I grabbed the throttle and quickly reduced it to idle as the engine torque and mast torque transitioned through 100 percent. Even though the throttle was at idle, the torques continued to increase. Cockpit warnings were going off and we were just along for the ride. When the transients were finished, we had registered 120 percent mast torque for two seconds and 116 percent engine torque for three seconds.

What had just happened?

The experienced IP trainee had a momentary lapse of judgment and thought we were at 100 percent. Instead of smoothly increasing throttle, he gave it a good "rap" to make sure it was fully open. Since the aircraft wasn't at 100 percent, his "rap" had taken the aircraft from idle to full open in less than a second.

Cost? A Huey ride back, one visual inspection and one lucky crew with only a Class E logged. My experienced IP trainee had a momentary lapse of situational awareness and I had failed to maintain my ready position and situational awareness inside the aircraft. Result? You guessed it … IP late with corrective action. It could've been worse! «

LOST

AVIATION

MH-47

CLASS C G Model

The aircraft experienced separation of the ramp extension panel (tongue) while in the closed position during cruise flight.

OH-58

CLASS C D(R) Model

The crew experienced an engine power turbine speed (NP) reading of 125 percent for six seconds during a full authority digital electronic control (FADEC) manual throttle approach maneuver.

UH-60

CLASS C A Model

The flight crew experienced whiteout conditions during a visual meteorological conditions (VMC) approach. Aircraft inspection revealed damage to all main rotor blades consistent with ALQ-144 contact.

DID YOU CONDUCT A LANDING ZONE (LZ) RECON? IF POSSIBLE, ALWAYS DO A LOW RECON PRIOR TO LANDING AND PLAN FOR AN ALTERNATE LZ.

The aircraft made ground contact during a standardization training autorotation maneuver. Postflight inspection revealed stabilator damage.

CLASS E

While conducting sling-load training, the external load was released from the cargo hook in flight. The crew was executing a VMC approach and, as it began its descent below 300 feet above ground level, the hook armed switch was moved from safe to armed, releasing the load without further action from the crew. The cycle normal release button failed to the open position. The aircraft landed and shut down without further incident. The wiring to the normal release button was repaired and the aircraft was returned to service.

CLASS C L Model

The aircraft experienced failure of the tail-wheel strut during takeoff, resulting in damage to the tail boom.

CLASS D

While initiating a VMC approach to an improved landing area, the pilot on the controls performed a 10- to 15-degree decelerative attitude. The nose door opened, contacting and cracking the center windshield panel. The pilot on the controls placed the aircraft out of trim to accomplish a VMC approach to the landing pad without further incident. Suspected materiel failure of the left-side door latch resulted in the door opening in flight.

UAS

RQ-7B

CLASS B

The UAS experienced an uncommanded descent upon handoff to the LR/S controller. The recovery chute was deployed and emergency recovery procedures were implemented. The system was recovered from the crash location.

The UAS lost power following a series of landing attempts and crash-landed off the forward operating base. The system was recovered.

The UAS experienced a propulsion failure during descent for landing following altitude testing. The recovery chute did not fully deploy and the system crashed into an open field.

CLASS C

The UAS missed the arresting gear upon touchdown and veered off the runway, becoming partially submerged in an adjacent ditch.

The UAS experienced slack and subsequent binding of the launcher cable during engine runup and the launch carriage stopped short during the launch sequence, disrupting the launch and unseating the system.

MH-60

CLASS E K Model

The crew heard a high-pitch whine from the No. 2 engine during the conduct of a fast rope approach. With engine indications normal, the crew returned to base and terminated the mission. During postflight inspection, the crew found indication of a foreign body (bird) that had been ingested into the No. 2 engine.

CLASS C L Model

The aircraft's forward-looking infrared (FLIR) system sustained damage during dust landing training. Upon touchdown, the aircraft settled into the dust and the FLIR contacted a submerged stone.

GROUND

ACV

CLASS A

A Soldier suffered a permanent total disability and three other Soldiers were injured when their M992A2 Field Artillery Ammunition Support Vehicle

ARMY AIRCRAFT LOSSES

Fiscal 2002 to Present

through April 8, 2008

Hostile/ Non-hostile

AH-64A/D	11/51
U/MH-60A/L	8/28
C/MH-47	7/16
OH-58D	11/28
TOTAL	37/123

ARMY GROUND LOSSES

Fiscal 2008

through April 9, 2008

Class A/Fatalities

AMV	11/9
ACV	3/0
PERSONNEL INJURY includes weapons handling accidents	21/18
FIRE/ EXPLOSION	3/3
PROPERTY DAMAGE	1/0
TOTAL	39/30

(FAASV) overturned. The FAASV was hauling an inoperable FAASV when the tow bar failed and the hauled vehicle struck the lead vehicle, causing it to overturn.

DO SOLDIERS PUT THE VEHICLE'S TRANSMISSION IN THE RIGHT GEAR BEFORE DESCENDING A HILL?

AMV

CLASS A

A Soldier died when the non-tactical vehicle (NTV) he was riding in collided with a tractor-trailer. The Soldier driving the NTV was attempting to avoid another vehicle that had entered his lane, causing him to cross the center line. Both Soldiers were wearing seat belts.

Personnel Injury

CLASS A

A Soldier was killed in a pedestrian accident. The Soldier was leaving a medical facility when he was struck by a vehicle on the highway about a mile away when he ran into traffic.

A Soldier was killed when he was struck by two rounds from another Soldier's weapon while conducting a day combat mission.

A Soldier suffered a permanent total disability when he dived into a body of water and struck an obstacle.

A Soldier was killed when he was pinned between two LMTVs during equipment clean-up at the wash rack following a major field exercise. The Soldier was between two parked LMTVs when the brake of the forward LMTV disengaged, causing it to roll back and pin him. Chalk blocks were not used.

RECENT DEADLY HAZARDS AT THE WASH RACK INCLUDE ELECTROCUTION AND SOLDIERS GETTING PINNED BETWEEN VEHICLES. WHAT SORT OF CONTROLS DOES YOUR UNIT HAVE FOR OPERATIONS AT THE WASH RACK?

A Solider severed his right index finger at the second knuckle when it was caught in the track of the turret on an M1151 HMMWV.

A Soldier suffered a permanent partial disability injury when his wedding ring caught while descending a 12-foot obstacle wall.

A Soldier lost her finger when it was caught while attempting to connect rebar on a barrier to a crane hook.

DRIVING

POV

CLASS A

A Soldier was hit head-on by a civilian driver evading police. The Soldier was evacuated to a local medical center, where she died from her injuries.

A Soldier was home on leave when he was killed in a head-on collision with a vehicle that crossed into his lane. The Soldier was pronounced dead at the scene.

A Soldier attempted to drive through a railroad crossing after the warning signals had gone off and the gates were down. A train hit the passenger-side of the vehicle, killing the Soldier and his girlfriend.

A Soldier was riding with his girlfriend when she lost control of her vehicle, exited a wet roadway, struck a tree, sideswiped a pole and overturned. The driver, who was unbelted and ejected during the accident, was taken to a local hospital and listed in stable condition. The Soldier was pronounced dead at the scene.

POV DRIVING LOSSES

Fiscal 2008

through April 9, 2008

Class A accidents/Soldiers killed	
CARS	28/28
SUV/JEEPS	5/6
TRUCKS	6/5
MOTORCYCLES	21/20
OTHER*	2/2

*Includes: vans and ATVs

61 TOTAL DEATHS

Fiscal 2007: 54 3 year average: 58

WEAR YOUR SEAT BELT

A Soldier was driving his pickup when he left the roadway, overcorrected, lost control, overturned and was partially ejected. The Soldier, who was not wearing his seat belt, was pronounced dead at a local medical facility.

A Soldier driving a vehicle with another Soldier riding as a passenger lost control at high speed and struck an underpass. The driver was pronounced dead at the scene, while his passenger was hospitalized with serious injuries.

DO YOUR SOLDIERS UNDERSTAND THAT SPEEDING REDUCES THEIR REACTION TIME WHILE INCREASING THE LIKELIHOOD OF A CRASH?

A Soldier was driving at high speed when he crossed a median and collided with a vehicle driven by a civilian. The Soldier was pronounced dead at the scene, while the civilian was hospitalized in stable condition.

A Soldier died in a vehicle crash after he lost control at high speed, left the roadway and struck a tree.

A Soldier stopped at an intersection and then pulled out without yielding right-of-way to through traffic. A vehicle struck the driver-side door of the Soldier's car. The Soldier was taken to a local medical center, where he was pronounced dead.

A Soldier was driving his pickup when he left the roadway, overcorrected, lost control, overturned and was partially ejected. The Soldier, who was not wearing his seat belt, was pronounced dead at a local medical facility.

POM

CLASS A

A Soldier was operating his sportbike along with several other riders when he lost control, left the roadway, hit a culvert and struck a fence post. He was air-evacuated to a local medical center, where he was pronounced dead. The Soldier had completed Motorcycle Safety Foundation (MSF) training the previous month and was wearing the required personal protective equipment (PPE).

A Soldier was killed while operating a sportbike at excessive speed when he failed to negotiate a left-hand turn and crashed. The Soldier had attended MSF training and was wearing all the required PPE.

LEADERS, DO YOU IDENTIFY HIGH-RISK SOLDIERS AND COUNSEL THEM BEFORE THEY ARE INVOLVED IN A CRASH?

RIDE FAST DIE FAST

PRELIMINARY LOSS REPORT
(POM CRASH KILLS ONE SOLDIER)

A Soldier was killed when he crashed his newly purchased motorcycle while operating it above the posted speed limit. The Soldier had entered a curve when he lost control, struck a guardrail and was ejected. He was pronounced dead at the scene. The Soldier had a driver's license, but only had a motorcycle learner's permit endorsement. He had taken an Army-approved Motorcycle Safety Foundation course. The Soldier did not have on all the required personal protective equipment, but was wearing a fastened full-face helmet, which came off during the crash.

Engaged Leaders Make a Difference

- Do Army Leaders know what their Soldiers are buying?
- What kind of checks and balances are in place to protect them?
- How do Soldiers prevent someone from becoming a **fallen comrade**?
- **What tools** can I as a Leader give them to help?
- How do I as a Leader get through to a Soldier?

U.S. ARMY
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https://crc.army.mil

ARMY SAFE IS ARMY STRONG

NOW YOU'RE COOKIN': KEEP OUTDOOR GRILLING SAFE AND FUN p. 14

KNOWLEDGE

VOL 2, JUNE 2008

OFFICIAL SAFETY MAGAZINE OF THE U.S. ARMY

ROLL ME OVER p. 5

BING-BANG-BOOM! p. 10

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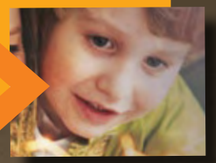
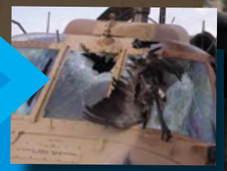
KNOWLEDGE
OFFICIAL SAFETY MAGAZINE OF THE U.S. ARMY

contents





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Mission statement: USACRC supports our Army by collecting, storing, analyzing, and disseminating actionable information to assist Leaders, Soldiers, Families, and Civilians in preserving/protecting our Army's combat resources.

We welcome your feedback. Please e-mail comments to **knowledge@crc.army.mil**.

"Our **FIRST STEP** might be to **EMPOWER** the other **INFLUENCERS** in Soldiers' lives who are **PRESENT** during **OFF-DUTY TIMES**."

BREAKING THE CYCLE

There is an interesting phenomenon occurring in our Army, but none of us should be surprised. In fact, we were taught very early in our careers that, with the correct conditions and the application of just the right methods, we can predict these outcomes. To what am I referring?

Engaged leadership, at all echelons, saving Soldiers' lives!!

Probably somewhat cliché at this point, but the powerful results of the successful application of this principle are seen in our statistical losses (see graph below). What does all this mean?

Accidental losses that occur when Soldiers are in an off-duty status are three times greater than when Soldiers are on duty. Would it not seem logical that during duty time is when our Soldiers encounter greater risk? During duty, do we not ask our Soldiers to jump out of airplanes, drive super-sized equipment in the world's most inhospitable places, fly helicopters in the dead of the night at altitudes that put machines and cargo on collision courses with objects that won't give, and carry and shoot weapons that kill at ranges greater than we can see?

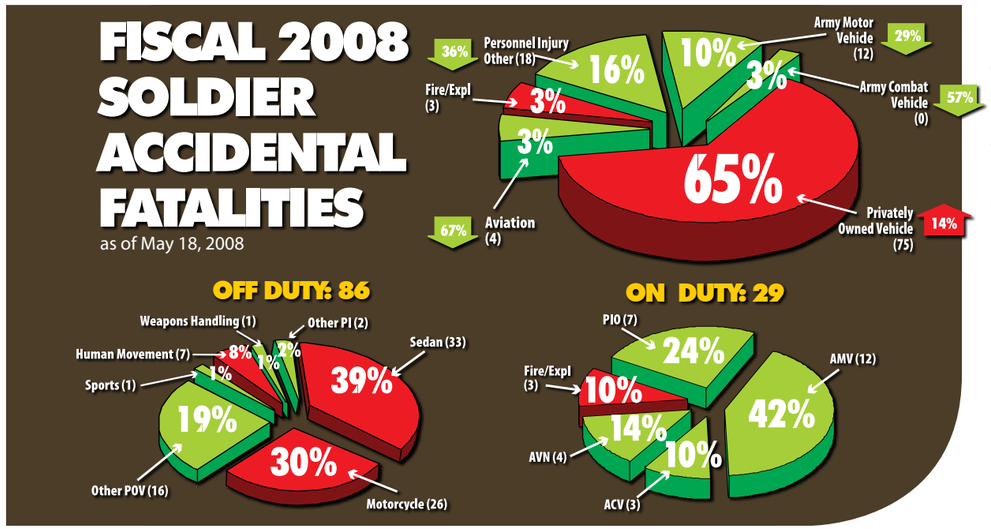
So ask yourself, where is the risk? Where and when are our Soldiers in the most danger of accidents that result in injury and death? The answers, according to statistics gathered over the last three years, point to times when our Soldiers are away from the oversight of Leaders. Our most formidable time to encounter events where death is an outcome is off duty.

Our dilemma is how do we break that cycle and return our Soldiers safely to duty after down time or off-duty activities. Now, if this were easy, we'd have already solved the problem. It is indeed complicated, and the many dimensions of our Soldiers' lives make a single solution set improbable.

Since we own our Team, our first step might be to empower the other influencers in Soldiers' lives who are present during off-duty times. We believe Family members are highly influential forces in the lives of Soldiers, with the potential to become even more powerful when we, as Leaders, facilitate an understanding of our concerns. Do we tell Families that they can have a positive impact and provide them with an understanding of risk? Do we set up our Families for success by providing situational awareness on the processes to reduce risk? Do we tell Family members they are Teammates and can contribute to the success of our Team? The answer is obviously yes.

We also believe peers and Battle Buddies are combat multipliers. Soldiers will hang with Battle Buddies – but we also want our Soldiers to hang with Battle Buddies who are positive influences, not witnesses and accessories to a crime. It makes little sense to team SPC Match with PFC Gas. How can we positively influence the Battle Buddy teaming process?

Army Team – we are doing well in decreasing the accidental devastation to our formations. But we must, and can, do more. Visit the U.S. Army Combat Readiness/Safety Center Web site for additional knowledge and tools to make each and every one of our organizations "Army Safe and Army Strong."«



William H. Forrester
Brigadier General, USA
Commanding

> "**SHARING** accident information for others **TO LEARN FROM** will not reduce Army accidents overall, but **WILL EDUCATE** and **STRENGTHEN** the **SAFETY CULTURE** we are attempting to foster."

MAINTAINING SITUATIONAL AWARENESS IN SAFETY PROGRAMS

Since taking this position, rarely a month goes by when I don't receive feedback on what I've written. That's a good thing and I appreciate your input and ideas. Command sergeants major exist to ensure information, concerns and ideas of all Soldiers are shared with those appointed over us and those we supervise.

Two-way communication and the exchange of ideas between us will facilitate a safer environment for our Army. Hopefully, you're exchanging safety best practices within formations, installations and units the same way you share mission information. Another way to support safety within your organization is to discuss accidents occurring in similar units, whether on or off your installation. Often, the difference between a Class A accident ($1 million or loss of life) and a Class D accident ($2,000 or more but less than $20,000) is inches and seconds. For one reason or another, units are often reluctant to talk about or report accidents. This means other units are not able to benefit from the lessons learned. Awareness and understanding of what caused a Class D for one rotation or unit has the potential to prevent a future Class A.

The road to success in safety is well traveled; however, it is often rough and generally includes a detour through the school of hard knocks. Reporting and publicizing accidents, however difficult it may be, will reduce future accidents and the hard knocks you and others suffer while traveling this road. Sharing accident information for others to learn from will not reduce Army accidents overall, but will educate and strengthen the safety culture we are attempting to foster. Report your accidents and ensure they make it into the Risk Management Information System (RMIS). Doing so allows others to properly plan, train and execute future missions with knowledge of the risks associated with an activity. Army Materiel Command (AMC) and the leadership of our Combat Training Centers (CTC) will tell you it is not uncommon to see units suffer the same types of incidents, rotation after rotation. Whether on a deployment or CTC rotation, sharing information and lessons learned will enable others to take precautions and not make the same mistakes.

There are several methods in place to provide and promote situational awareness of accidents in our Army. Three such tools available to Leaders are Preliminary Loss Reports (PLRs), "Got Risk?" and *Knowledge* magazine. PLRs are usually produced within 48 hours of an accident and contain the who, what, when and where of an accident, as well as recommended discussions for your formation. To receive PLRs via e-mail, visit the USACRC homepage to subscribe. "Got Risk?" is a brief synopsis of PLRs that occurred during a one-week time frame. Generally sent to battalion commanders, "Got Risk?" also affords squad Leaders the opportunity to discuss the incidents with their troops. Generally, each one contains an incident that young Leaders can relate to on a personal level. Often, both PLRs and "Got Risk?" are strategically placed in bathrooms for troops' and visitors' reading pleasure. Lastly, *Knowledge* magazine was developed in response to the continuing safety cultural transformation occurring Armywide. With a distribution of 68,000 subscribers, *Knowledge* supports our Army and the way we fight.

These tools, as with all USACRC products, enable units to become more predictive and proactive through a growing understanding and identification of accident trends. Take the time to visit the USACRC Web site at https://crc.army.mil and share information with others. The life you save may be an old friend or even your own.

The enemy, "Risk", can be defeated. Don't keep accidents a secret, beat risk by maintaining open, two-way communication and sharing ideas, both up and down the chain of command.

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

DRIVE to survive

COL. WILL G. MERRILL III
U.S. Army Central Command

Whether at home or deployed in support of the Global War on Terrorism, Leaders face a common challenge: vehicle rollover accidents.

The increased popularity of sport utility vehicles (SUVs), pickup trucks and vans at home, as well as the Army's use of high-center-of-gravity vehicles and rented SUVs in the area of responsibility (AOR), has increased our vulnerability to rollovers. Last year, the Army lost 12 Soldiers in rollover accidents, while another 45 Soldiers were injured. Fifteen of the accidents happened at home, but 30 occurred in the AOR. The fact that our junior Soldiers are frequently tasked as drivers, yet possess the least experience, places them and their passengers at a significantly higher risk. Any

> **"WEARING** a seat belt will almost always **IMPROVE** your chances of **SURVIVING A ROLLOVER** and will **DECREASE** the severity of any **INJURIES** you may receive. **BUCKLE UP.** Your life may depend on it."

training we provide will help Soldiers perform better on and off duty.

Over the past decade, more and more Americans have abandoned the "family sedan" for SUVs, pickups and vans. What some drivers might not realize, though, is these types of vehicles have different handling characteristics than a sedan. Some of these characteristics are influenced by the higher center of gravity, which often contributes to rollover crashes. The rollover crash is not a new phenomenon; vehicles have been rolling over as long as people have been driving. The increase in rollovers is due to the migration from sedans to the more popular SUVs, vans and pickup trucks.

According to the National Highway Traffic Safety Administration (NHTSA), rollover accidents are relatively rare, occurring an average of once in every 40 reported crashes. However, when they do occur, they are much more likely than most other types of crashes to result in serious injury or death. In fact, one of every three passenger vehicle fatalities occurs in a rollover crash. In Kuwait alone, we had 62 rollover accidents last year, involving Soldiers, Sailors, Airmen, Marines, civilians and contractors. Sadly, all these fatal accidents shared a common factor: the persons killed were not wearing seat belts.

Recent Department of Transportation studies indicate the vast majority of rollovers occur during ordinary driving when a driver suddenly swerves to avoid an obstacle such as a stopped car or animal in the road, or when a driver accidentally drifts off the pavement and onto the shoulder. In fatal rollovers, excessive speed and alcohol are often contributing factors. Nearly three of every four fatal rollovers occur on rural roads with posted speed limits of 55 mph or higher. In about 40 percent of these accidents, excessive speed (either above the posted limit or too fast for road conditions or the driver's ability) is cited as a contributing factor. Also, about half of all fatal rollovers involve alcohol — though not necessarily in excess of the legal limit. More than 80 percent of these accidents are single-vehicle crashes.

Since our fleet of vehicles in the AOR has very few sedans and more Army Motor Vehicles, SUVs, white assets (contractor vehicles) and high-center-of-gravity vehicles, our risk of rollover crashes is greater than back home. During fiscal 2007, 30 percent of U.S. Army Central Command's total serious motor vehicle accidents (which result in damages greater than $20,000 or injury requiring hospitalization for more than one day) involved a rollover. Of those, 24 were fatal accidents and 11 resulted in permanent partial disabilities and/or property damage.

There are several preventive measures you can take to reduce your risk of being involved in a rollover accident, such as keeping your vehicle in good condition and driving carefully. Remember, four of every five rollovers involve no other vehicle; so, as a driver, you alone are in control. You can also substantially reduce your risk of injury by wearing a seat belt. About three-quarters of the people killed in rollovers across the U.S. were not wearing their seat belts, and almost two-thirds of those were thrown out of their vehicles during the rollover. Buckling up keeps you inside the vehicle and protected by the passenger compartment's "safety cage."

Vehicle safety standards have made the passenger compartment the safest place to be during an accident. Passengers thrown from the vehicle during a rollover are not protected by anything. Wearing a seat belt will almost always improve your chances of surviving a rollover and will decrease the severity of any injuries you may receive. Buckle up. Your life may depend on it. «

REFRESHER COURSE

Everyone believes they're a good driver, but that's not always the case. Refresh your memory with the reminders below and share them with fellow Soldiers. These tips apply to driving any vehicle, whether on or off duty.

- **Don't drive too fast.** The posted speed limit is an upper limit, not a lower limit. The faster you drive, the less time you have to react to any emergency that suddenly arises on the road ahead of you. This means you'll probably end up steering more sharply and/or braking harder, both of which compromise your ability to safely control your vehicle.
- **Steering.** Many rollovers occur when drivers overcorrect their steering in response to unexpected situations, such as encountering a stopped vehicle in their lane or accidentally driving off the pavement. Sudden steering maneuvers at high speeds or on soft surfaces can lead to rollovers. If your vehicle leaves the paved road surface, slow down gradually. Don't stomp on the brakes. Then, when it's safe to do so, ease the vehicle back onto the roadway. Don't suddenly jerk the steering wheel to get the vehicle back on the pavement.
- **Be extra careful on rural roads.** Rollovers are more likely to occur on rural roads and highways, particularly undivided, two-way roads or divided roads with no barriers. When a vehicle leaves the pavement, it can be tripped by roadside objects or soft surfaces or roll down a slope. Nearly 75 percent of all rollover crashes occur in rural areas, so be extra careful when driving on rural roads.
- **Tires.** Improperly inflated and/or worn tires can be especially dangerous because they inhibit your ability to maintain vehicle control. Monitor your tire pressure regularly using a tire pressure gauge, not your eyeball. Temperature changes cause your tire pressure to decrease significantly, but you can't always tell that by just looking at the tires.
- **Vehicle loads.** Consult your vehicle's owner's manual to determine the maximum safe load for your vehicle, as well as proper load distribution. Passengers and baggage in vans and SUVs will raise the vehicle's center of gravity, increasing the vehicle's likelihood of rolling over.

DYNAMIC ROLLOVER
The Basics

CHIEF WARRANT OFFICER 3 SHAWN D. MALARA
C Company, 4-4 ATK, 4th Combat Aviation Brigade
Fort Hood, Texas

Most helicopter pilots have a complete and total understanding of all aspects of Chapters 5 and 9 of their aircraft operator's manual (Dash 10), or at least they would like to believe that's true. I hope some of those little nuggets of knowledge are filed away somewhere. Right now, if a pilot were to hear "pylon whirl" or "spike knock," it's likely a zombie-like trance would overtake him and a robotic response would follow. Another programmed response would be from the term "dynamic rollover." The definition is easy to repeat, but do pilots really know what it means or how quickly it can happen?

Field Manual (FM) 3-04.203, *Fundamentals of Flight*, addresses dynamic rollover; aircrew training manuals include a note in the maneuver description that the aviator must understand dynamic rollover before conducting slope operations; and Dash 10s include a slope-landing limit intended to minimize the chances of dynamic rollover.

Each helicopter is unique in its design and configuration. It's important to understand the specific characteristics of each helicopter. All types of rotor systems — rigid, semi-rigid or fully articulated — are affected to some extent. Tail rotor thrust and wind on the fuselage contribute to a rolling motion. The limits published in each technical manual should always be observed and taken into account. Exceeding published limits is likely to contribute to dynamic rollover.

Dynamic Rollover Sequence

Three pieces are required to complete the dynamic rollover sequence: pivot point, rolling motion and exceeding the critical angle. Without each of these pieces, dynamic rollover won't happen. It's important to understand each of these aspects to help avoid getting into this potentially dangerous and deadly situation. The events can unfold very quickly in a seemingly safe situation. Within seconds, aircraft control can be lost. Even the most experienced pilots can temporarily lose situational awareness and get into a dynamic rollover situation. No one is immune!

- Pivot point is the point at which the aircraft is in contact with the ground or some other object to provide an "anchor" point. Soft ground, landing gear frozen to the ground and even failure to remove tie downs can all provide the anchor point. Although aircraft with skids are different than aircraft with wheels, the dynamics are the same. Care should be taken to ensure the landing area is clear of hazards that might provide a pivot point and produce a rolling motion; e.g., stumps, forgotten tent pegs, displaced tie-down ropes, partially buried metal material, etc. Be sure to take into account any surface changes that could have occurred before takeoff, such as aircraft sinking in mud.
- Rolling motion is the continued movement of the aircraft in a lateral direction after contact with the ground or other object. Rolling motion is easier to control with collective as opposed to lateral cyclic inputs. Abrupt collective inputs should not be applied to get airborne. A large reduction in collective could result in a rolling motion in the opposite direction. As a roll rate increases, the recovery angle is further reduced with right skid (wheel) low condition, yaw inputs, crosswind, main rotor thrust almost equal to helicopter weight and center of gravity (CG) offset. Pedal inputs to reduce a yawing tendency should be smoothly coordinated with collective inputs to help maintain a stable aircraft direction and position over the landing point.
- Exceeding the critical angle occurs when the helicopter rolls past its static angle. Each helicopter has a static rollover angle, based on its CG and the pivot point, and it is usually described where the helicopter CG is positioned over the pivot point. When a rolling motion is introduced, a dynamic rollover angle comes into being and is known as the critical angle. It's dynamic because the greater the rolling motion, the earlier the critical angle may be exceeded. The critical angle can be exceeded even if the helicopter is on a zero-degree slope. A helicopter on a slope causes the critical angle to be changed and reduced. In general, if the bank angle starts to increase to about five to eight degrees and full corrective cyclic doesn't reduce the angle, the collective should be reduced to diminish the unstable rolling condition.

Although the basic aspects of dynamic rollover don't change, each situation is unique. An understanding of the three elements involved with dynamic rollover is the key to avoiding a potentially dangerous situation. Pilots should continue to learn from their own experiences, as well as the experiences of fellow pilots. Aircraft simulators provide a way for pilots to adjust aircraft dynamics and specific profiles to allow for realistic training in dynamic rollover recovery techniques. Understanding dynamic rollover and having a healthy respect for the aircraft and its limits are the keys to safely preserving our nation's critical warfighting resources — our aircrew members and their aircraft.

BING BANG BOOM!

COMPILED BY THE KNOWLEDGE STAFF
U.S. Army Combat Readiness/Safety Center
Fort Rucker, Ala.

Editor's Note: The names of the individuals in this story have been changed to protect the privacy of those involved.

Sgt. Jerry Hatcher completed his fourth day of training and, after being released at 4 p.m., went to his off-post quarters and prepared to go out to a local pub to meet two other members of his unit. About 8 p.m., he drove his standard-cab pickup — a factory-built, high-performance model with race styling — from his house to the pub for a party and live concert. A couple hours later, the other Soldiers joined Hatcher at the pub. Throughout the evening, Hatcher drank beer and other alcoholic drinks.

> "Ensure **EVERYONE** in your vehicle **BUCKLES UP**. Seat belts, air bags and your vehicle's crush zones **CAN'T PROTECT YOU** if you're **THROWN OUT** a **WINDOW**."

It was only two miles from the pub to Hatcher's house. After driving about three-quarters of a mile, he turned into the entrance of his subdivision. In an attempt to show off his truck's performance, he accelerated to more than 60 mph in a 25-mph zone. As he attempted to round a left-hand curve, he lost control and his truck went off the right side of the road. Sliding sideways, Hatcher's pickup hit three mailboxes and then another pickup parked in a driveway. That impact spun Hatcher's pickup 180 degrees clockwise and caused it to roll one and a half times before landing on its roof. As the pickup rolled, Johnson flew out the passenger-side window and landed about 50 feet away in the road. Although alive, he had suffered severe head injuries, including brain swelling. Hatcher called 911 to summon police and emergency medical services (EMS) to the accident scene. Once EMS personnel arrived, they arranged for Johnson to be evacuated by helicopter to a hospital. There, he was placed in a medically induced coma.

It was a half hour past midnight when Hatcher met a local female, Angela Branning, and her roommate, Sgt. Daryl Johnson. When the pub prepared to close at 1:30 a.m., Hatcher invited Johnson and Branning to ride with him to his home and continue the party. Despite the fact Hatcher was under the influence, Johnson and Branning got in. Branning sat in the middle while Johnson sat in the right passenger seat. Hatcher and Branning fastened their seat belts; however, Johnson — who had a habit of not buckling up — chose not to wear his seat belt.

Why Did This Accident Happen?

Hatcher mixed alcohol with excessive speed and reckless driving in an attempt to impress his passengers. When police checked Hatcher's breath alcohol content about an hour after the accident, it was .17 percent — more than twice the legal limit.

inside. By comparison, Hatcher and Branning wore their seat belts and were treated and released at the accident site.

As the driver, Hatcher was responsible for ensuring all his passengers buckled up. However, he failed to do that and, as a result, left a "fallen comrade" lying in the street.

Why Was Johnson Seriously Injured?

Johnson had a habit of not wearing his seat belt, which was evidenced by several traffic citations on his driving record. Being unrestrained caused him to be ejected outside the pickup's occupant compartment, where he would have been protected by the vehicle's airbags and crumple zones. Post-crash photographs of the truck show the passenger side of the cab was largely intact, providing adequate safe space for Johnson had he remained

Lessons Learned

- Blending alcohol, gasoline and asphalt is a recipe for disaster. Soldiers should never assume they can safely operate a vehicle after they have been drinking.
- Be careful who you accept rides from. If you start your trip with someone who has been drinking, you may end it with a paramedic.
- Ensure everyone in your vehicle buckles up. Seat belts, air bags and your vehicle's crush zones can't protect you if you're thrown out a window.

. . . And the Home of the Safe

JAMES HAMMONDS
U.S. Army Technical Center for Explosives Safety
McAlester, Okla.

For many Americans, fireworks are a summer tradition. Fourth of July celebrations seem incomplete without the "rockets' red glare" and "bombs bursting in air." Unfortunately, some of these celebrations will end with another, less enjoyable tradition: a trip to the emergency room. By taking the proper precautions before handling fireworks, you can help ensure your personal tribute to Independence Day is a blast.

It may surprise some to learn the only difference between military explosives and fireworks is the amount of explosives filler. In the explosives community, we handle ammunition and explosives using the cardinal principle: Expose the fewest people to the smallest amount of explosives for the shortest time possible. It's also a great rule for handling fireworks.

Before even thinking about lighting your first fuse, make sure fireworks are legal to possess and use in your city and state. The National Council on Fireworks Safety's Web site is a good source of information on state fireworks laws. You should also always ask your local fire or police department if fireworks are legal in your area. Although fireworks may be legal in your state, there may be reasons, such as a burn ban due to dry weather, why their use is prohibited in some areas.

Once you've established that you can legally shoot fireworks in your city, make sure you buy legal fireworks. Fireworks are classified as a hazardous material and will always have a label with the manufacturer's name and directions for use. Illegal fireworks such as M-80s, M-100s and blockbusters usually aren't labeled and don't have directions. Even though banned since 1966, illegal fireworks are responsible for one-third of all Fourth of July injuries. If you know of anyone selling illegal fireworks, contact your local police department.

Unfortunately, even legal fireworks that are considered a "safe" choice for younger children, such as sparklers, can be dangerous. Sparklers can reach 1,800 F — hot enough to melt gold! — and account for more than half the fireworks injuries to children under the age of 14. If children aren't mature enough to understand the rules regarding fireworks, they shouldn't handle them. Also, if your pets are afraid of noise or easily get excited and stressed, consider keeping them indoors or in pet crates until the fireworks celebration is over.

FYI

For more information about fireworks safety, statistics and state laws, visit the National Council on Fireworks Safety Web site at www.fireworksafety.com.

If someone gets hurt using fireworks, immediately go to your family doctor or a hospital. If the injury involves the eyes, do not rub or touch them. You should also never attempt to flush the eyes because some fireworks material can be activated by water. Eye injuries from fireworks are a no-wait medical decision. If someone is burned on their skin, remove their clothing and run cool water over the injury.

Fireworks are meant to be enjoyed and help celebrate an important event in the lives of all Americans. If used properly, they can be safe for everyone. Teach your children the right way to handle fireworks and they'll pass it on to their children. The last place anyone wants to celebrate America's independence is a hospital waiting room.

FYI

To help you safely celebrate the Fourth of July, the Consumer Product Safety Commission and the National Council on Fireworks Safety offer the following tips:

- Always read and follow label directions.
- Have an adult present.
- Buy from reliable sellers.
- Only use fireworks outdoors.
- Always have water handy (a garden hose and a bucket).
- Never experiment or make your own fireworks.
- Light only one firework at a time.
- Never relight a "dud" firework. Wait 15 to 20 minutes, soak it in a bucket of water and then dispose of it in your trash can.
- Never give fireworks to small children.
- Store fireworks in a cool, dry place.
- Never throw or point fireworks at other people.
- Never carry fireworks in your pocket.
- Never shoot fireworks in metal or glass containers.
- The shooter should always wear eye protection and never have any part of the body over the firework.
- Stay away from illegal explosives.

Source: National Council on Fireworks Safety

NO BURNT OFFERINGS:

HELP FOR THE BACKYARD CHEF

FRANK MCCLANAHAN
U.S. Army Combat Readiness/Safety Center
Fort Rucker, Ala.

Whether you like to cook with propane or charcoal, the end result is the same — delicious outdoor fare that has family and friends lined up with their paper plates and plastic utensils in hand. In fact, outdoor cooking has become so popular that, according to The Weather Channel's Web site, more than half of Americans say they cook outdoors year-round because they enjoy the flavor of flame-broiled cooking so much.

Outdoor grilling can be a fun and relatively safe activity, but there is an element of risk for serious injury and property damage for the uninitiated, unprepared or careless. The following guidelines are provided to help you minimize your risk and ensure your grilling experiences are always fun, safe and successful.

Grilling with Propane

At the Consumer Product Safety Commission's (CPSC) urging, an industry standard providing several safety features in gas grills, hoses and connections was adopted in 1995. These features limit the flow of gas if a hose ruptures, shut off the grill if it overheats and prevent the flow of gas if the connection between the tank and grill is not leak-proof. If your grill was manufactured before 1995 and isn't equipped with these safety features, you might consider purchasing a new one this year. If your old standby is still working fine and you want to try to get a few more years out of it, be especially attentive to these safety tips:

- Set up your grill in an open area away from buildings, combustible materials and locations where children are likely to congregate and play.
- Inspect the gas hoses for cracking, brittleness, holes and leaks and make sure there are no sharp bends in the hoses or tubing that can interfere with the flow of fuel. Periodically, check the inside of the gas tubes for a buildup of spider webs, which create blockages that can result in gas backflowing into the control valves, where it can ignite. (An orange flame indicates an obstruction; flames should burn blue in color.)
- Keep propane cylinders in their upright position and never store spare filled cylinders near the grill or in your home.
- Inspect gas hoses to ensure they are as far away as possible from hot surfaces and hot dripping grease.
- Never use gasoline as a fuel source.
- Do not store a filled cylinder in a hot car or trunk, as heat can increase gas pressure and possibly open the relief valve, allowing gas to escape.

According to the CPSC, each year, there are about 600 fires or explosions that occur from using gas grills, resulting in injuries to about 30 people. In order to reduce these incidents, the National Fire Protection Association published a standard which requires overflow prevention devices on propane cylinders to help prevent propane leaks that can result in fires and explosions. The new propane gas tanks can be identified by valve handles with three lobes, giving them a triangle-shaped appearance. Older tanks have valve handles with five lobes. The requirement for the new cylinders was effective April 1, 2002.

Grilling with Charcoal

For charcoal grilling, only use starter fluids specified for those type grills. Follow the directions on the container and never apply additional fluid once the fire has been ignited, which could result in flames traveling up the fluid stream and igniting the container. If the fire is too slow, rekindle it with dry kindling and add more charcoal as needed. Be sure to keep starter fluid away from the grill after it has been ignited and never, under any circumstance, use gasoline as a starter fluid.

Select quality charcoal for quick lighting and a long burn life. Be sure to store charcoal in a cool, dry area and keep bags of instant-lighting charcoal tightly closed. Always remember, grills remain hot long after you are through barbecuing, so, once finished, place the lid on the grill, close the vents and allow the coals to burn out completely. When they have cooled, soak the coals thoroughly with water and dispose of them in a non-combustible container. To reduce the danger of carbon monoxide poisoning, never burn charcoal inside your home, vehicle, tent or camper. Charcoal should never be used indoors. And as with propane grilling, always make sure you keep your children away from the fire.

The Insurance Information Institute recommends that when grilling, be sure to wear a heavy apron and flame-retardant oven mitts that fit high up over the forearm. Also, in the event of a burn, run cool water over the injury for 10 to 15 minutes. Never put butter or salve on burns because they will seal in the heat and cause further blistering. For serious burns, seek medical attention immediately.

Food Safety

Of course, a successful cookout goes further than just good grilling protocol. Don't forget to adhere to food safety guidelines to prevent illnesses associated with harmful bacterial contamination. Below are some helpful tips to prevent you from serving any food-borne illnesses to your guests:

- Give your grill a good cleaning by scouring the grate with a wire brush. Spray the metal cooking grid with oven cleaner and rinse thoroughly. Before each use, apply a non-stick cooking spray to prevent food from sticking. Never apply cooking spray onto a hot grill, as the propellant may be flammable.
- Protect against cross-contamination by keeping raw meats, poultry and vegetables separate.
- Wash hands thoroughly and frequently with hot, soapy water during food preparation.
- Keep work surfaces clean and wash or change out utensils to prevent contaminating cooked meat with a utensil used to handle raw meat.
- After meat has been grilled, be sure not to place it back on a plate or platter that held raw meat.

As we approach the summer season, more and more backyard chefs will roll out their trusty grills to show off their culinary expertise. By following a few safety guidelines, you can ensure your attempt at barbeque perfection doesn't go up in flames.

FYI

For more information on grilling safety, visit the following Web sites at www.weather.com/activities/homeandgarden/home/grilling and www.iii.org/individuals/homei/tips/grilling/.

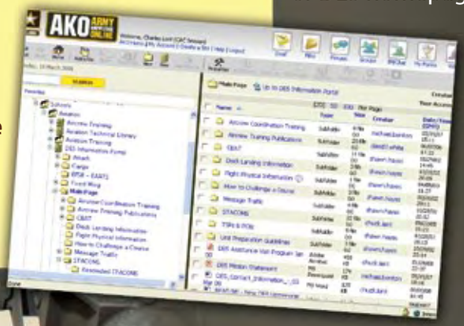
Important STACOM Information

CHIEF WARRANT OFFICER 5 CHARLES W. LENT
Directorate of Evaluation and Standardization
U.S. Army Aviation Warfighting Center
Fort Rucker, Ala.

The Directorate of Evaluation and Standardization (DES) publishes standardization communications (STACOMs) to provide guidance to the field and which may precede formal staffing and distribution of Department of the Army official policy. In an effort to ensure the field has the most current information, a review of all active STACOMS was recently conducted. On a recurring basis, DES will review a listing of active STACOMS and publish it on the Army Knowledge Online (AKO) portal and in *Knowledge* magazine. To the left is a list of active STACOMS.

All previously published STACOMS not listed are rescinded and located in the rescinded STACOM folder on the AKO portal for historical purposes. Active STACOMS are available on the AKO portal DES main page: DES homepage on AKO (NIPR) at https://www.us.army.mil/suite/page/337793, or DES homepage on AKO-S (SIPR) at http://www.us.army.smil.mil/suite/page/9746. For more information, contact Chief Warrant Officer 5 Chuck Lent at (334) 255-9098 or e-mail chuck.lent@conus.army.mil. ≪

STACOM #	Date Published	Title
06-05	June 2006	Clarification of Combat Maneuvering Flight Training Requirements
06-07	July 2006	Door Gunner Integration and Utilization
07-01	Jan. 10, 2007	Clarification of STACOM 06-06: CH-47 Qualification and ATP
07-02	Jan. 10, 2007	FADEC Training
07-03	Jan. 22, 2007	Pilot in Command Requirements
07-05	June 6, 2007	LUH UH-72 Qualification
07-07	Nov. 30, 2007	Currency Requirements for the External Operator
07-08	Nov. 30, 2007	PI Flight Requirements for 05 Commanders and Above
08-01	Jan. 11, 2008	UAS Shadow Currency
08-02	Jan. 11, 2008	UH-60 FI/SI Qualification
08-03	February 2008	CH-47 Performance Planning



A MESSAGE FROM DEFENSE SECRETARY ROBERT GATES

Tragically, last year during the 101 days between Memorial Day and Labor Day, 77 servicemen and women died in private motor vehicle accidents. While Memorial Day marks the beginning of summer, it also means increased traffic on our nation's roads.

Know that the choices you make at sporting events, barbeques and other summer activities can impair your judgment and reaction times – all of which are necessary for safe driving.

Don't put your life, or the lives of others, in danger by making poor decisions. Most vehicle accidents are the result of alcohol, fatigue and excessive speed. Your safety, and the safety of those around you, is in your hands.

Enjoy the summer and all it has to offer, but be smart and safe. ≪

WHO'S THE BOSS?

The U.S. Army Combat Readiness/Safety Center and Family and Morale, Welfare and Recreation Command have joined forces to produce the BOSS Safety Factor presentation. The initiative is designed to build awareness of hazards that can befall single Soldiers during off-duty activities.

The Army lost 76 single Soldiers to off-duty accidents in fiscal 2007. Hundreds more were injured or suffered negative results due to engaging in careless or high-risk behavior. Safety Factor identifies these behaviors and emphasizes making better decisions to help prevent off-duty accidents. Soldiers get to see the possible outcome of their actions without learning by painful, first-hand experience.

The one-hour block of training will be shown at BOSS Council meetings and events. Safety Factor's slogan, "It only takes one second to become a statistic," drives home to Soldiers a very important reality – simple tasks and everyday activities can cause injury or death if proper precautions are not taken. ≪

Bird strikes, deer and moose! Oh, my!

CHRISTOPHER TRUMBLE
U.S. Army Combat Readiness/Safety Center
Fort Rucker, Ala.

Wildlife is one of God's greatest gifts. Just like many readers of *Knowledge* magazine, I, too, enjoy outdoor activities like hiking, camping, hunting and fishing. Getting the opportunity to see wildlife in the wild rather than a zoo adds to the outdoor experience. However, certain wildlife can, at times, become safety hazards – especially on the runway.

This is especially true when talking about the threat of wildlife to aviation personnel and platforms. Even if we don't have injuries or fatalities associated with wildlife, it can hinder mission readiness and become a serious source of financial loss when aircraft are taken out of service for repairs. This article looks at wildlife hazards and offers control measures to avoid, reduce or eliminate these risks.

The Federal Aviation Administration (FAA) issues airport operating certificates for airports serving certain aircraft under Title 14, Code of Federal Regulations (CFR), Part 139, Section 139.337. The FAA directs, by regulation, that all airfields in the U.S. that have a wildlife hazard problem conduct a wildlife hazard assessment (WHA) and create a wildlife hazard management plan (WHMP). The WHMP, of course, is to manage and control wildlife that pose a potential risk to public safety, caused by aircraft collisions with wildlife. The FAA relies heavily on the assistance of the U.S. Department of Agriculture Animal and Plant Health Inspection Services and Wildlife Services (WS) to review and contribute to such plans.

The Animal Damage Control Act of March 2, 1931 (7 USC 426-426c, as amended), authorizes the secretary of agriculture to manage wildlife that becomes hazardous to agricultural interests, other wildlife or human health and safety. Bird strikes and animals on runways are examples of hazards to human health and safety. Additionally, the secretary of agriculture is authorized to cooperate with states, individuals, public and private agencies, organizations and institutions in the control of noxious animals, including wildlife hazards to aviation. The WS is recognized throughout the world as an expert in dealing with wildlife damage management issues because of its experience, training and personnel.

A memorandum of understanding (MOU) between the Department of Defense (DOD) and the WS (No. 12-34-71-000307-MU) establishes a cooperative relationship between the organizations for resolving wildlife hazards to aviation. Army Regulation (AR) 95-2, *Airspace, Airfields/Heliports, Flight Activities, Air Traffic Control and Navigational Aids*, paragraph 13-3, specifically mentions the use of a WHMP to control wildlife hazards at Army airfields. Additionally, Army Field Manual (FM) 3-04.300, *Flight Operations Procedures*, paragraph 2-58, lists a requirement for airfield commanders to maintain an airfield operations manual. The WHMP is listed as a component of the airfield operations manual.

The FAA requires a WHA be conducted when any of the following occurs (14 CFR 139.337(b)):

- An aircraft experiences multiple wildlife strikes.
- An aircraft experiences substantial damage from striking wildlife. (Substantial damage means damage or structural failure incurred by an aircraft that adversely affects the structural strength, performance or flight characteristics of the aircraft and would normally require major repair or replacement of the affected component.)
- An aircraft experiences an engine ingestion of wildlife.
- Wildlife of a size, or in numbers, capable of causing events described above is observed to have access to any flight pattern or aircraft movement area.

According to 14 CFR 139.337(c), at a minimum, the WHMP shall contain the following:

- An analysis of the events or circumstances that prompted the assessment.
- Identification of the wildlife species observed and their numbers, locations, local movements and daily and seasonal occurrences.
- Identification and location of features on and near the airport that attract wildlife.
- A description of wildlife hazards to air operations.
- Recommended actions for reducing identified wildlife hazards to air operations.

> "BIRD STRIKES and ANIMALS on RUNWAYS are examples of HAZARDS to human HEALTH and SAFETY."

The U.S. Army Combat Readiness/Safety Center's (USACRC) Air Task Force (ATF) conducted research into recent Army aviation accidents using the USACRC's Risk Management Information System (RMIS), and data showed an increased trend of loss due to bird strikes at some airfields. Further investigation found that only four Army airfields have contacted the WS for assistance in assessing wildlife hazards and developing WHMPs.

In an effort to ensure installations are aware of these wildlife hazard programs, the ATF coordinated an initiative with the assistance of the following:

- Office of the Director of Army Safety
- U.S. Army Forces Command
- U.S. Army Training and Doctrine Command
- U.S. Army Materiel Command
- U.S. Army Special Operations Command
- U.S. Army Space and Missile Defense Command/U.S. Army Forces Strategic Command
- U.S. Army Europe Aviation Safety Office
- U.S. Army Aviation Branch Safety Office
- Eighth U.S. Army, Korea

It was determined AR 95-2 fully covers airfield operations in regard to a wildlife hazard and the DOD MOU with the WS is current. Your installation should leverage the assistance of the WS if you are experiencing wildlife hazards to aviation operations at airfields inside or outside the continental United States.

Using WHAs and developing WHMPs can be mutually beneficial to wildlife by protecting it from injury and to the Army by improving aviation safety and preventing loss. For additional information, the DOD MOU with the WS, along with an example of a WHA, WHMP and other documents, are available on the USACRC ATF Web page at https://crcapps2.crc.army.mil/atf/index.asp under the "Resources" tab.

Handling Shoulder Drop-offs

BOB VAN ELSBERG
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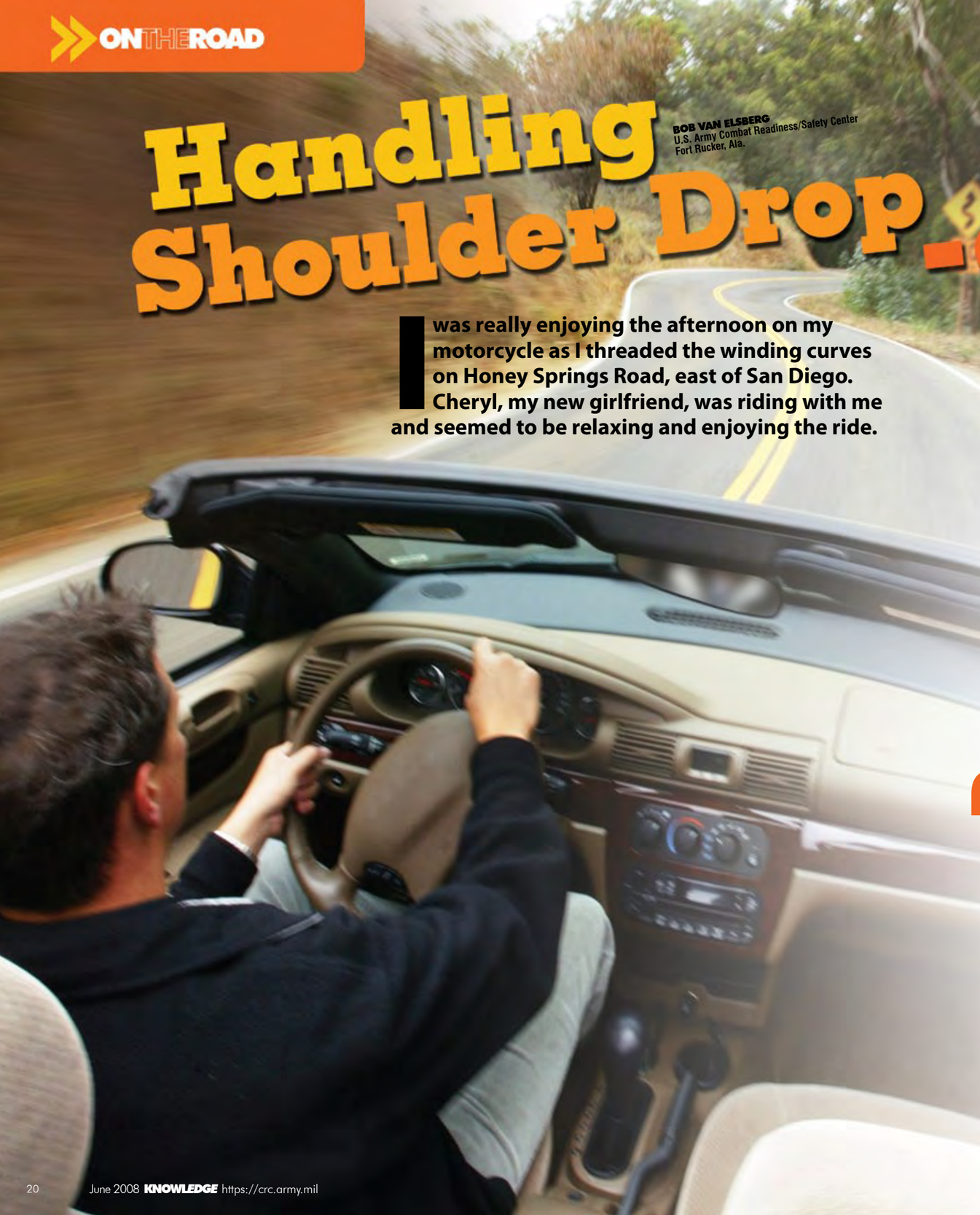
Fort Rucker, Ala.



I was really enjoying the afternoon on my motorcycle as I threaded the winding curves on Honey Springs Road, east of San Diego. Cheryl, my new girlfriend, was riding with me and seemed to be relaxing and enjoying the ride.

I crested a low rise with what appeared to be a fairly easy right-hand curve. However, the road was crowned (higher in the center and lower on the sides) instead of banked, which would have helped me stay in my lane during the turn. Unable to see into the turn, I was going too fast and began to drift across the oncoming lane toward the left-hand shoulder. I heard and felt the "thump-thump" as my front and back tires ran off the drop-off and onto the left shoulder. I suddenly found myself "threading the needle" — trying to avoid going into a ditch just to my left while also trying not to angle back toward the road on my right. The road was at least 3 inches higher than the shoulder.

> "I suddenly **FOUND MYSELF** "threading the needle" — **TRYING** to **AVOID** going into **A DITCH** …"

If I'd tried to climb that drop-off without slowing down, chances were I'd dump the bike, injuring both Cheryl and myself. That's not the way I wanted the ride to end.

Fortunately, I got the bike stopped safely. And while I did not repeat that mistake on a motorcycle, there have been times when, perhaps because of inattention, I have allowed my car's passenger-side tires to drift off the road. When that has involved a shoulder drop-off of more than a couple inches, getting back onto the road sometimes has been a hairy experience. Nowhere is that more common than in construction areas where a newly paved road may have a drop-off of 4 or more inches. That can be a real attention-getter, regardless the type of vehicle you may be driving.

If you find yourself in this situation, the following tips may help you avoid becoming an accident statistic:

- Let the vehicle slow down gradually. Brake gently — if at all — so you maintain control of your vehicle.
- Look at the traffic situation. If you see oncoming traffic or traffic in your lane approaching from behind, let those vehicles pass before attempting to get back onto the road. Scan the road ahead for a spot where the pavement edge and shoulder height are as close to the same height as possible. The less the difference in height, the easier and safer it will be to maneuver back onto the road surface.
- Before trying to drive back onto the road, move your vehicle 12 to 18 inches to the right on the shoulder. This will allow you to return to the road surface at a more gradual angle and get a running start before climbing over the pavement edge.
- Steer gently to the left — about one-eighth to one-quarter turn — so your tires climb the edge at an angle. Avoid panicking and trying to quickly steer back onto the roadway.
- As soon as your right-front tire climbs back onto the road, steer gently about one-eighth to one-quarter turn to the right to center your vehicle in your lane. Only after all four wheels are safely on the road should you attempt to accelerate to the speed limit.

Warning: If the drop-off is straight down and 4 inches or more in depth, or if you don't properly straddle the pavement's edge, your right-rear tire can rub against the drop-off's edge as you try to get back onto the road. Should this happen, it can send you swerving to the left and into oncoming traffic no matter how hard you steer to the right. «

(Editor's Note: Some of the information for this story was provided courtesy of Safetyline *magazine).*

AND THE AWARD GOES TO...

EARNEST RANDLE
Army Safety Office
Washington, D.C.

On behalf of the Secretary of the Army and Chief of Staff, Army, Brig. Gen. Bill Forrester, director of Army safety and commanding general of the U.S. Army Combat Readiness/Safety Center, recently announced the Army Safety Award recipients for 2007.

These awards showcase the accident prevention efforts of units and individuals in preventing Soldier, civilian and Family member losses in our formations, as well as in the workplace and within our military communities.

The Secretary of the Army and Chief of Staff, Army, Safety Awards consist of nine awards in three categories. The Army Headquarters Safety Award recognizes Army commands (ACOM), Army Service Component Commands (ASCC) and Direct Reporting Units (DRU) that have demonstrated significant improvements, sustained excellence and leadership in their accident prevention programs. The Army Exceptional Organization Safety Award is awarded to the battalion through division and garrison organization with the most effective overall safety program. The Individual Award of Excellence is presented to individuals who make the most significant contribution to accident prevention in each of four categories: officer, noncommissioned officer/enlisted, Department of the Army civilian and contractor.

CSA Army Headquarters Safety Award

The Army Materiel Command (AMC), based at Fort Belvoir, Va., is the recipient of the Army Headquarters Safety Award for fiscal 2007. AMC demonstrated significant improvements in its overall safety program, excellence and leadership with accident reduction programs, resulting in an 11-percent decline in its lost workday rates between fiscal 2006 and 2007 and a 29-percent accident reduction from the 2002 baseline.

AMC Headquarters' establishment of a Workers Compensation Advisory Group, which provides guidance and review of installation commanders' progress in reducing civilian occupational injuries/illnesses and workers' compensation costs, was instrumental in reducing fiscal 2007 costs by more than $673,000. AMC established the Safety Rapid Review Team, which is a multi-disciplinary team of safety, industrial hygiene and occupational health professionals that provides direct assistance and specific recommendations to AMC commanders to enhance risk management implementation and improve their overall safety and occupational health posture. The team visited 22 installations/activities in fiscal 2007.

CSA Exceptional Organization Safety Award

The 82nd Airborne Division (primarily based out of Fort Bragg, N.C.); 16th Cavalry Brigade (U.S. Army Armor School, Fort Knox, Ky.); 83rd Ordnance Battalion (Headquarters, I Corps (Forward) and U.S. Army Japan); and Area Support Group-Qatar (Camp As Sayliyah, Qatar) earned the Army Exceptional Organization Safety Award.

The 82nd Airborne Division implemented an aggressive accident prevention plan which included defensive driver course (DDC) attendance for Soldiers under the age of 26 and driver improvement training for Soldiers with moving violations. Motorcycle DDC attendance before operating a motorcycle and development of a Motorcycle Mentorship Program contributed to the division attaining more than 400 days (Aug. 27, 2006 through Oct. 6, 2007) without a privately owned vehicle (POV) or privately owned motorcycle (POM) fatality.

The division developed the Individual Trooper Risk Assessment counseling form to assist the first-line supervisor in identifying high-risk troopers. The initiative is part of the monthly counseling process and is mandatory for all E-5s and below to aid in the risk mitigation process. The 82nd Airborne Division provides and requires all new Leaders to receive additional composite risk management (CRM) training during their integration phase. Other efforts, such as aggressive information campaigns, safety briefings, incentives and safety stand-down days, were noted as positively contributing to the significant accident reduction in fiscal 2007.

The 16th Cavalry Regiment demonstrated the highest level of safety awareness while simultaneously executing tracked vehicle maneuver and tank live-fire gunnery training. Despite almost doubling its operations tempo, the 16th Cavalry Regiment decreased its accident rate by almost 70 percent in fiscal 2007 and successfully completed the year without a fatality. Additional mitigation measures used by the command that significantly contributed to accident reductions

in fiscal 2007 included safety stand-down days, a unit safety incentive awards program for both individuals and units, completion of the Composite Risk Management Basic Course by all unit Soldiers and the incorporation of CRM into every aspect of training and mission tasks.

The 83rd Ordnance Battalion achieved the highest level of safety awareness while executing its ammunition supply, maintenance and demilitarization mission. Over the past seven years, the battalion conducted 29 port operations, received 13,500 short tons and shipped more than 10,500 short tons of munitions without a Class A, B or C accident. The battalion disposed of 350 short tons of munitions over the past seven years using the burn pad technique without a single mishap, which is directly attributable to following standing operating procedures (SOPs) and application of CRM. Several additional efforts, including 100 percent command completion of the Commander's Safety Course, increased seat belt usage, toolbox meetings, safety messages, increased safety training and information sharing, were noted as positively contributing to significant accident reductions in fiscal 2007.

Area Support Group-Qatar demonstrated organizational safety excellence by achieving the Department of the Army's goal of a 20-percent reduction in recordable accidents in fiscal 2007 over fiscal 2006 totals. Area Support Group-Qatar achieved zero deficiencies during the Third Army and Army Central (ARCENT) Command safety inspection in April 2007. Other efforts, such as safety council meetings, safety surveys and the incorporation of CRM into every aspect of operations, were noted as positively contributing to significant accident reductions in fiscal 2007.

CSA Individual Award of Excellence in Safety

Chief Warrant Officer 5 John Green (1st Battalion, 111th Aviation Regiment); Sgt. 1st Class Joseph M. Kaufman (Support Battalion, 196th Infantry Brigade); Mr. Douglas Day (Radford Ammunition Plant); and Mr. Robert East (Area Support Group-Qatar) were recipients of the Individual Award of Excellence in Safety.

> "Other **EFFORTS**, such as **SAFETY COUNCIL MEETINGS**, safety **SURVEYS** and the **INCORPORATION OF CRM** into every aspect of **OPERATIONS**, were **NOTED** as **POSITIVELY** contributing to **SIGNIFICANT ACCIDENT REDUCTIONS** in fiscal 2007."

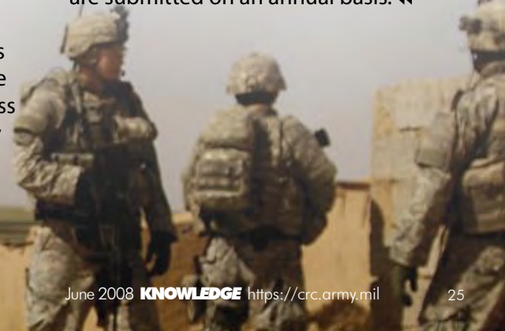
Green demonstrated a proactive approach and engaging leadership, which allowed the Aviation Task Force–Kuwait to fly more than 4,000 sorties for nearly 11,000 flight hours, delivering 4,000 passengers and more than 2 million pounds of cargo without a Class A, B or C accident. He spent countless hours coaching and teaching Sailors on risk mitigation – specifically CRM – thereby ensuring a common safety language among team members of the joint aviation task force. Green's employment of additional mitigation efforts, such as completion of the Composite Risk Management Basic Course by command Soldiers, seminars on POV and POM safety, emphasis on ground safety and revision of the battalion's SOPs on Army Motor Vehicle operations, were noted as positively contributing to significant accident reductions in fiscal 2007.

Kaufman played a key role in overhauling the battalion's safety program, integrating the primary initiative: engaged Leaders, an effective safety training program and personal accountability. He recognized a need, recommended action and received the battalion commander's concurrence for establishment of a battalion safety council, to include identifying individuals to serve as council members. Kaufman's involvement in educating personnel assigned to the Support Battalion, 196th Infantry Brigade, in POM operations resulted in the battalion experiencing zero Class A, B or C POM accidents over the past five years. He was also instrumental in promoting safety by reviewing and updating existing safety policies and procedures, conducting facility walk-through inspections, conducting weekly safety briefings and advocating the implementation of CRM into all unit activities. Kaufman's continuous diligence was noted as positively contributing to significant accident reductions in fiscal 2007.

Day implemented changes to his organization's safety program that have brought it to the highest level of commendation. He instituted a foreign object debris (FOD) control and reporting process that resulted in a 50-percent reduction in FOD incidents for fiscal 2007. Day proactively used CRM to mitigate mishaps and near misses and increased personal protective equipment training and awareness that directly contributed to injury reductions. Day's attention in other areas of the safety program, including training, supervising demolitions, enforcing seat belt usage, onsite evaluations and accident investigations were noted as contributing significantly to accident reductions in fiscal 2007.

East's efforts contributed to the command achieving the Department of the Army's goal of a 20-percent reduction in recordable accidents. Area Support Group-Qatar ended fiscal 2007 with 13 recordable accidents, compared to 16 recordable accidents in fiscal 2006. East achieved zero deficiencies on the Third Army and ARCENT command safety inspection, which resulted in three commendable and seven sustain ratings. East's use of additional accident reduction measures, including onsite evaluations, accident investigations, information sharing and safety meetings, were noted as positively contributing to significant accident reductions in fiscal 2007.

Congratulations to all the fiscal 2007 winners. Nominations for the fiscal 2008 Army Headquarters Safety Award, Army Exceptional Organization Safety Award and Army Individual Award of Excellence in Safety may be sent from Army Headquarters (ACOM, ASCC, DRU) to the Office of the Director of Army Safety (DASAF), 223 23rd Street, Alexandria, VA 22202, or electronically to ASO@hqda.army.mil. Army Headquarters should select and forward one nomination for each category no later than November of each year. Nominations are submitted on an annual basis.



USACRC Honored for Safety Excellence

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

The U.S. Army Combat Readiness/Safety Center (USACRC) was recently recognized for its commitment and excellence to safety with the Army Aviation Association of America's (AAAA) Robert M. Leich Award.

The award was presented to Brig. Gen. Bill Forrester, commanding general of the USACRC and director of Army safety, and Command Sgt. Maj. Tod Glidewell April 14, 2008, at AAAA's annual convention in National Harbor, Md.

Forrester accepted the award on behalf of the entire Army in recognition of the sustained superior safety performance achieved in 2007. The Army concluded fiscal 2007 with a 20-percent reduction in Army aviation accidents from 2006. The reduction is credited to increased safety awareness and implementation of safety tools and programs Armywide.

Challenged by the Chief of Staff of the Army to lead our force in a safety transformation, the USACRC supports Army Leaders in assessing loss trends and uses cutting-edge technology to develop innovative tools and training programs focused on reducing accidents Armywide.

In 2007, the USACRC deployed 16 accident investigation teams worldwide, working more than 1,500 man-days. The efforts of these teams and the resulting input to the USACRC's Digital Collection, Analysis and Integration Lab provided the U.S. Army Aviation Warfighting Center's Aircraft Shoot Down Assessment Team critical analysis needed for the development of new tactics, techniques and procedures to avoid further combat losses of aircraft and crews.

Embracing the need for culture change, the Army implemented safety programs developed by the USACRC such as the Army Readiness Assessment Program (ARAP), designed specifically to target an organization's safety climate and culture. ARAP provides battalion commanders and Leaders of equivalent-sized organizations an uncensored view of what is happening "below the waterline" in their units. During fiscal 2007, 165 aviation units Armywide participated in ARAP, accounting for 59,539 military and civilian personnel.

More than 128 Army officers from the active and reserve components, including 15 allied officers, supported continuing education in the safety field by attending training courses at the USACRC. Additionally, the Armywide application of the Family Engagement Kit, developed by the USACRC, successfully bolstered the "battle buddy" concept between Families and Soldiers, empowering Family members to engage in best practices.

The USACRC was previously honored with the Robert M. Leich Award in 1985.

Transforming Army Culture

USACRC hosts Senior Safety Symposium

TAYLOR BARBAREE
U.S. Army Combat Readiness/Safety Center
Fort Rucker, Ala.

Editor's note: The comments from Senior Safety Symposium participants are their opinions and observations and do not necessarily reflect Army policy or the U.S. Army Combat Readiness/Safety Center's position.

In an effort to actively reduce Soldier losses, as well as understand ongoing trends relating to safety culture, the U.S. Army Combat Readiness/Safety Center recently hosted a three-day Senior Safety Symposium.

The biannual event focused on the overall accident losses the Army has experienced this fiscal year, accident trends, human factor involvement, safety culture transformation in the force and best safety practices. The theme of this year's symposium was "Transforming Army Culture through Engagement."

Keynote speaker Gen. Charles C. Campbell, commanding general, U.S. Army Forces Command (FORSCOM), spoke about the challenges facing FORSCOM.

"There is a massive amount of change in the Army today," Campbell said. "We are transforming at a rapid pace. … We are deploying three combat brigade teams in Iraq over the next three months. There is continuous substitution. Skill sets are different; therefore, the challenges presented to you as safety specialists are more challenging. One way to meet these challenges is to be 'drivers of change' and be interactive in the adaptation of these agents."

Campbell believes boots on the ground provide capabilities that no technology could ever replace, and engagement at every level is a necessity.

"All Soldiers make choices, and there are always consequences with those choices," Campbell said. "Soldiers have an exaggerated sense of immortality, which is why they purchase motorcycles and drive them at high rates of

A LEADERSHIP CHALLENGE

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

One Army safety director would like to see Soldiers receive additional driver's training before heading to theater.

Col. Will G. Merrill III, U.S. Army Central Command safety director, said if he could change one thing in the Army, he would add a week to all entry-level training programs to include driver's training and testing. He also believes that the addition of unit driver trainers/instructors ("instructor pilots," of sorts) to conduct check rides might improve driver performance through feedback similar to what is done in aviation units.

Although Merrill recognizes driver training won't solve all the Army's problems, he said it will help Soldiers cope with one of the most unexpected dangers they'll experience in theater.

"Some of the drivers on the roads in the Middle East have little or no formal driver training, and their roads are significantly different than those at home," Merrill said. "When the traffic is unpredictable, even experienced Soldiers can have difficulty operating a vehicle safely. Soldiers tend to assimilate into their environment. They end up driving too fast for their abilities and unknowingly reduce their ability to safely react and maneuver when hazards appear. Then, there is also a segment of our force that lives dangerously because they're drawing hazardous duty pay. That is a leadership challenge."

Merrill said another area of concern is ground guiding the multitude of vehicles at the staging yards during convoy preparations.

"The most common mistake we've seen when Soldiers attempt to ground guide a vehicle is they drift out of sight of the driver," Merrill said. "Fortunately, good supervision has prevented serious losses, but we have had one Soldier killed and two others injured while trying to do the right thing the wrong way. Leaders need to emphasize that the driver should immediately stop if he loses sight of his guide."

The most critical key to Soldier survival, however, remains proper supervision from Leaders, Merrill added. However, during decentralized operations, such as those situations units encounter upon deployment, key Leaders are spread thin. Merrill said those Leaders need to tap into the power of their junior Leaders, right down to the newest private in the unit.

Merrill would also like to see the use of battle buddies become a requirement. He said Soldiers listen to their buddies, and that can help Leaders supervise more efficiently if it's done properly. However, it needs to start at home station.

"We see a lot of unusual things here that Soldiers are not accustomed to and may not handle well if their Leaders are not actively engaged in supervising and enforcing the standards," Merrill said. "It doesn't matter how well trained that 25-year-old sergeant is. When he gets out there, it's going to challenge all of his abilities to keep his Soldiers doing the right thing the right way."

speed, which indicates to me that they are not wise about being safe. Somehow, we have to ensure they are making wise decisions with their choices."

Brig. Gen. Bill Forrester, director of Army safety and commanding general of the USACRC, added that safety officials play an important role in ensuring loss of Soldiers remains at a minimum.

"We have been given some tough goals to achieve this fiscal year in preventing losses among our ranks," Forrester said. "One way we are going to be able to achieve these goals is through your work and dedication as safety specialists. Please remain vigilant with our initiatives to better integrate our safety plan as part of our safety culture."

The symposium also covered topics such as deployment safety and hazards and risks with Col. Will G. Merrill III, U.S. Army Central Command safety director; deployment lessons learned with Col. Robert Noback, dean of the U.S. Army School of Aviation Medicine; and an overview of safety program accomplishments and goals by Tad Davis, deputy assistant secretary of the Army for Environment, Safety and Occupational Health.«

> "**BOOTS ON THE GROUND** provide **CAPABILITIES** that **NO TECHNOLOGY** could ever **REPLACE**, and **ENGAGEMENT** at every level is a **NECESSITY.**"

BRIGADE COMBAT TEAMS LESSONS LEARNED

BOB VAN ELSBERG
U.S. Army Combat Readiness/Safety Center
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The safety lessons learned from deployments in Iraq can be tools to help save Soldiers' lives. William Del Solar, a safety officer with the 10th Mountain Division, spoke about what he called "Safety Preparation of the Battlefield" — the need for deploying units to get a handle on the accident problems they may face from those who've already deployed.

"I want to know the hazards," Del Solar said. "Tell me what's happened in the past, what kind of accidents you've had. That's what I want to know."

He explained that sharing information is important during Relief in Place and Transfer of Authority operations. Soldiers arriving in theater may encounter new or unfamiliar equipment. He cited, as an example, 5-ton trucks modified with the "Hunter Box," an armor kit that limits the vehicle's cargo capacity to 650 pounds. He said some Soldiers coming into the theater might not be familiar with these modified vehicles and unknowingly overload them. In one such instance, an accident occurred that killed several passengers. Del Solar emphasized the importance of ensuring incoming Soldiers know the limitations of the equipment they are taking over.

Del Solar also discussed the problems of operating in a country where construction or electrical work done by local contractors may not meet safety standards and can pose a threat to Soldiers. He pointed out that some of the locally available electrical components are of inferior quality and are prone to fail and catch fire. This problem, coupled with jury-rigged repairs, has sometimes led to electrical fires — one of Del Solar's biggest problems in theater.

One of the problems safety personnel sometimes encounter in theater is a "we're-at-war" attitude used as an excuse for taking safety shortcuts. Keeping that attitude from leading to losses in Soldiers, equipment or facilities was one of the challenges faced by Dave Mushtare, 10th Mountain Division safety director.

When dealing with committees and action councils regarding infrastructure, construction and future planning, Mushtare advised them that Department of Defense standards held them responsible for providing a safe and secure environment. When faced with the argument that those standards didn't apply outside the United States, he'd remind them it was their professional and moral obligation to apply those standards wherever they were.

Mushtare explained the sense of mission urgency can sometimes get Soldiers killed in accidents. The "Warrior Ethos" — the responsibility Soldiers feel for their buddies — and the adrenaline that kicks in during combat can be a temptation to bypass safety. Keeping that in check is the responsibility of Leaders, Mushtare said. He said they must ensure pilots don't fly beyond their skills or their aircraft's capabilities. He added the same was true for vehicle drivers so they don't drive beyond their skills or outdrive their improvised explosive device detection systems. He emphasized the importance of pre-mission planning — including proper crew selection, performing preventive maintenance and pre-combat checks and ensuring mission briefs include the risk management controls — to preventing accidents.

Mushtare added that risk management must also be flexible enough to respond to the realities of combat.

"We must remember that on the battlefield, the enemy always has a vote in the outcome," he said. "There will be times when a split-second decision must be made. This is where the amount and quality of the training Soldiers have received will be a key factor."

Mushtare gave as an example a situation where Soldiers taking fire might need to take cover in a dark cave. Normally, time permitting, the cave should be checked with a source of light, such as a flashlight, before entering. However, when Soldiers are under enemy fire and the cave is their only refuge from injury and death, they would need to hustle inside and react accordingly to any threats. While combat will dictate taking higher risks at times, Mushtare warned it's important to avoid a mind-set where everything is seen as a life-or-death decision. Wherever possible, he said, Leaders must take the time to plan for less risky options.«

DEPLOYMENT MEDICAL CONCERNS

PAULA ALLMAN
U.S. Army Combat Readiness/Safety Center
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Deploying — it's part of everyday life in the Army. However, there are numerous medical and environmental factors that can degrade mission performance. Col. Robert Noback, dean of the U.S. Army School of Aviation Medicine, spoke at the Senior Safety Symposium about the medical community's major responsibilities when gathering information for a predeployment medical survey. He explained the major objective is to consider the risks present in the environment and recommend countermeasures to reduce those risks to preserve the health and performance of the unit.

"Iraq is the big show in town, followed by Afghanistan," Noback said. "There are many other places, such as the Philippines, that are forgotten about. The Horn of Africa is another 'forgotten war.'"

Going into these unfamiliar areas, Noback added, can present unusual and hard-to-predict hazards. This, along with the unfamiliarity that can come from working in a joint operations environment, may lead to incomplete safety cultures. For example, in Djibouti, animals Soldiers may only have seen in zoos may show up on running trails. While Soldiers are not likely to get attacked by a lion, they also shouldn't try to pet the hyenas.

In another instance, a Soldier developed a rash and went to medics to have it checked out. He was given hydrocortisone and steroidal creams, but neither helped. Later, others in the unit developed the same rash and were sidelined. No one knew what the problem was until a local physician quickly identified that the rash was connected to a local insect. The insect, while uncommon in the U.S., was prevalent in the area where the Soldiers were deployed. Knowing what caused the problem, doctors could finally treat the rash properly and pass that information to others deploying to their location.

"When one person has an accident or makes a mistake, a whole unit can suffer," Noback said. He recognized that Soldiers and other service members are trying to do the right things. One of the most important things they can do, he said, is know what the previous unit went through so they can learn as much as possible from their lessons.

Infection risks such as malaria, tuberculosis, diarrheal illness and leishmaniasis, to name a few, can be found in the area of responsibility. Historically, most casualties are from disease and non-battle injuries. Most can be prevented with vaccination, good personal hygiene, proper use of insect repellents and consumption of water and food from approved sources.

Noback explained that joint operations can also create several problems for units that don't habitually work or train together. Different services may have different standards, equipment, cultural values and tactics, techniques and procedures. When working in a joint unit, service members may have to take on roles or responsibilities that are new or unexpected. It's important that differences are quickly resolved and rivalries reduced to the "just-kidding-around" stage. In today's environments, the experience level may not always match the rank or service; you might find an Airman or Sailor filling an Army billet. In the end, it's the guy with the right experience who needs to be listened to.

Fatigue is another unavoidable issue Soldiers face while deployed. However, Noback said, its effects can be minimized if Soldiers get enough sleep in a proper environment, preferably a dark, cool, quiet area.

Composite risk management has also proved to be a valuable tool for combating the multitude of issues service members face. Noback said Leaders getting engaged at all levels will help keep operational risks in check.«

—Editor's note: Col. Noback recently returned from serving as the command surgeon, Special Operations Command Central.

LOST

AVIATION

CH-47

CLASS C D Model

The left-side emergency escape hatch separated from the aircraft while in flight. Inspection revealed damage to the forward high-frequency antenna.

CLASS D

During the landing phase of a confined area operation, the aircraft rotor system came in contact with a small pine tree, which resulted in damage to all three rotor blades. The aircraft was landed, shut down and the blades were inspected by a maintenance test pilot. The aircraft was cleared for a one-time flight to the Army Aviation Support Facility. Late report.

MH-60

CLASS C K Model

Post-flight inspection revealed tip cap damage consistent with a tree strike to three main rotor blades.

IS YOUR LANDING AREA AS LARGE AS YOUR AIRCRAFT REQUIRES?

UH-60

CLASS C A Model

Post-flight inspection revealed damage consistent with a wire strike to the high-frequency antenna and underside of the fuselage. The crew negotiated wires, but did not experience any anomaly to indicate a strike.

WAS THE HAZARDS MAP UTILIZED AND WERE HAZARDS UPDATED ON FLIGHT MAPS AND ALONG THE ROUTE OF FLIGHT?

CLASS E

While conducting a paradrop mission, a CGU-1B cargo strap was removed from the cargo door area, allowing jumpers to exit the aircraft. As the paradrop team exited the aircraft, a Soldier knocked the ratchet end of the strap out of the aircraft. The strap contacted the surface of the door and flapped against it several times before the crew chief could secure the strap and pull it inside the aircraft. The aircrew completed the mission and returned to the airfield. Minor damage was found to the cargo door upon post-flight inspection. Late report.

CLASS A L Model

The aircraft main landing gear sunk into soft ground during touchdown to an unimproved surface, allowing the aircraft nose section to contact a rocky surface. Post-flight inspection revealed possible damage to the airframe.

CLASS C

The aircraft suffered damage to the main rotor blade (leading edge) as a result of a bird strike during flight.

UAS

MQ-5A

CLASS A

The controller lost visual contact during landing approach in reduced visibility/ceiling conditions. The UAS landed short of the runway in rough terrain.

GROUND

Personnel Injury

CLASS A

A Soldier suffered fatal injuries when he fell while visiting a park. The Soldier was taking pictures on a boulder ledge when he lost his balance and fell 25 feet. He was evacuated to a local medical center for treatment but later died from his injuries.

A Soldier was found dead on a set of railroad tracks after being struck by a train.

CLASS C

A Soldier fractured his back when he rode his snowboard off a 4-foot drop-off on the side of a mountain, lost control and crashed.

A Soldier fractured his back when the ladder he was working from slid off the house and fell to the ground. The Soldier landed on his back on top of the ladder.

DRIVING

POV

CLASS A

A Soldier was driving his pickup truck with another Soldier riding as a passenger when he lost control, struck a parked vehicle and overturned. The passenger, who was not wearing his seat belt, was ejected and suffered serious head injuries. (See the story "Bing-Bang-Boom" in this issue of *Knowledge*).

A Soldier was driving his pickup truck after dark when he reportedly swerved to miss a deer and went off the road and struck a large tree. The Soldier was fatally injured.

A Soldier was driving his sedan and passing another vehicle on the right when he lost control and his vehicle

ARMY AIRCRAFT LOSSES

Fiscal 2002 to Present

through May 13, 2008

AH-64A/D	11/51
U/MH-60A/L	8/28
C/MH-47	7/16
OH-58D	11/28
TOTAL	**37/123**

ARMY GROUND LOSSES

Fiscal 2008

through May 14, 2008

AMV	15/12
ACV	4/2
PERSONNEL INJURY includes weapons handling accidents	21/18
FIRE/ EXPLOSION	3/3
PROPERTY DAMAGE	1/0
TOTAL	**44/35**

PLANNING SUMMER TRiPS?

As we enter the summer months, many Soldiers are finalizing their travel plans for some much-deserved leave. Before hitting the open road, however, Leaders must ensure their Soldiers complete a Travel Risk Planning System (TRiPS) assessment.

TRiPS is an online automated risk assessment tool specifically designed for personnel using their privately owned vehicles (POV) or motorcycles during pass, leave, TDY or PCS. For fiscal 2007, Army personnel using TRiPS were 4.2 times less likely to have been involved in a fatal POV accident. With more than 3 million Army assessments completed since the inception of the tool, this is a positive impact on safety. Because it has been so effective in reducing Army fatalities, it was also adopted by all military Services.

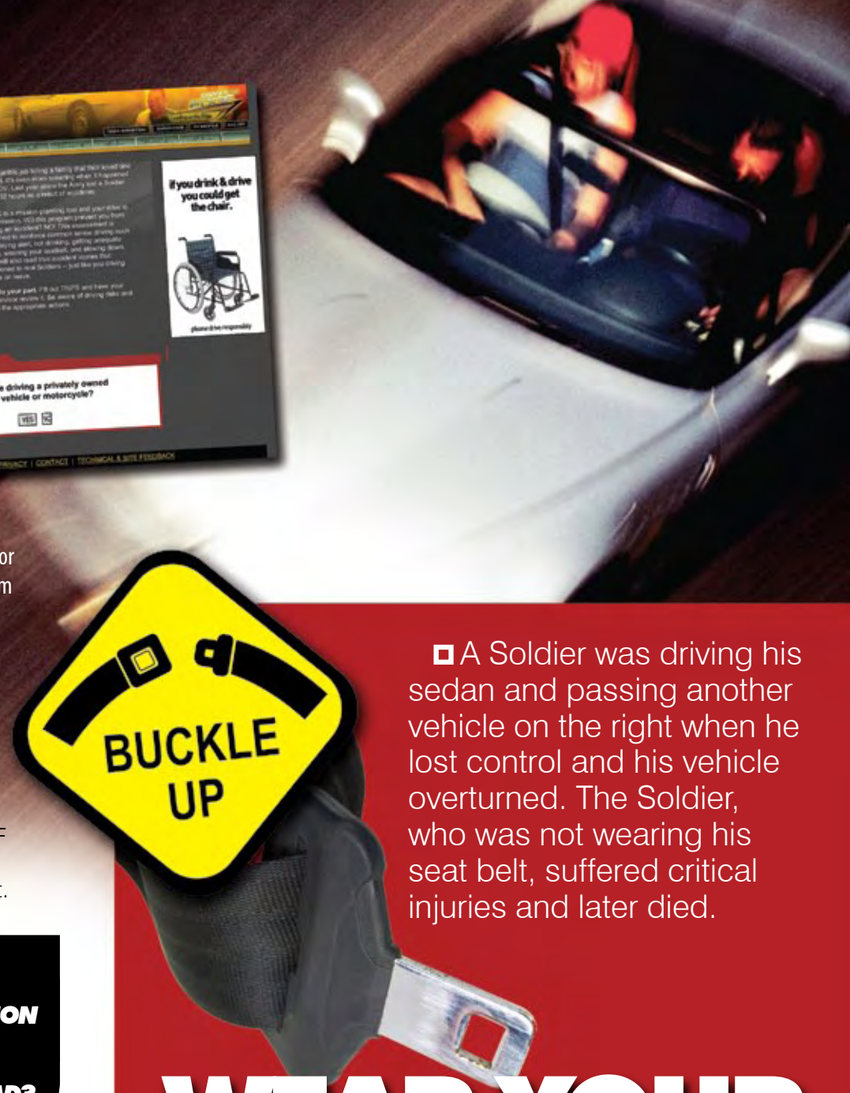
The key to the program's success is the way it involves Leaders with their Soldiers' travel plans. In addition to providing Leaders with details not reflected on a Soldier's leave form, it provides recommended actions to reduce hazards and also calculates the trip's overall risk. Armed with vital facts, Leaders may then elect to approve or disapprove the online assessment.

So, how does TRiPS work? Users provide risk-related information, including the type of vehicle they are using, departure time, travel distance, driver's age, driving courses attended and seat belt use. Other information collected includes vehicle safety inspections, driver rest before travel, driver medication or alcohol use, checking weather forecasts, whether the driving will be during day or night, the type of road traveling on and planned rest stops.

Based upon the chosen parameters, TRiPS provides real accident summaries reflecting similar travel information, an initial risk level for the trip and recommendations with selectable mitigation measures to further reduce hazards. Those recommendations may include following medication directions and informing the chain of command of over-the-counter medications taken, checking the weather before traveling and taking precautions for driving at night or on two-lane roads. In addition, to prevent driver fatigue, the assessment may suggest periodic rest stops or sharing driving responsibilities.

Users receive a final risk calculation based on the mitigation measures taken, and then the tool provides them with driving directions and a map. TRiPS enables users to electronically submit their assessments to their supervisors and also fill out a partially completed leave form.

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



A Soldier was driving his sedan and passing another vehicle on the right when he lost control and his vehicle overturned. The Soldier, who was not wearing his seat belt, suffered critical injuries and later died.

DO YOUR SOLDIERS UNDERSTAND THAT PASSING ON THE RIGHT IS DANGEROUS AND, IN MANY CASES, ILLEGAL?

WEAR YOUR SEAT BELT

POM

CLASS A

A Soldier died two days after purchasing a new sportbike when he was riding at high speed, lost control and veered into the path of an oncoming sport utility vehicle. The Soldier wore a helmet but was unlicensed and had not attended Motorcycle Safety Foundation (MSF) training. The Soldier's chain of command was aware of him considering the purchase, had asked him to delay buying and even enrolled him in the installation riders' training course.

A Soldier was operating his cruiser-type motorcycle when involved in a single-vehicle accident. The Soldier injured his spine and was diagnosed with total paralysis.

A Soldier was operating his sportbike when he struck a curb, crashed into an adjacent creek and was killed. The Soldier was licensed, had MSF training and was wearing his personal protective equipment.

DO YOUR RIDERS UNDERSTAND THAT PROPER LANE POSITION WILL GIVE THEM A BUFFER AGAINST HAZARDS IN THE ROAD?

A Soldier was operating a borrowed motorcycle in a residential area when he struck the rear of a parked vehicle and was thrown from the bike. The Soldier, who was not wearing a helmet, suffered fatal head injuries.

Editor's note: Information published in the accident briefs section is based on preliminary loss reports submitted by units and is subject to change. For more information on selected accident briefs, e-mail knowledge@crc.army.mil.

POV DRIVING LOSSES Fiscal 2008

through May 14, 2008	Class A accidents/Soldiers killed
CARS	31/31
SUV/JEEPS	6/7
TRUCKS	8/6
MOTORCYCLES	26/25
OTHER*	2/2

*Includes: vans and ATVs

71 TOTAL DEATHS

Fiscal 2007: 63 3 year average: 70

CORRECTION

In the February issue of *Knowledge*, the Soldier featured in the centerfold poster is wearing unauthorized eyewear. Soldiers are not authorized to wear colored tints, other than smoke-colored lenses, because they block the transmission of specific colors, which may increase operational risk. The *Knowledge* staff regrets the error. For more information on the authorized protective eyewear list, visit https://peosoldier.army.mil/pmseq/eyewear.asp.

SPEED KILLS
LEADERS TOO

ESTIMATED SPEED - 140 MPH

An NCO was operating his sportbike at a high rate of speed when he lost control, went off the road and crashed into a tree. The NCO, who was wearing all his personal protective equipment, was evacuated to a local medical center, where he was pronounced dead.

Engaged Leaders Make a Difference

- Did you know that more than two-thirds of single-vehicle accidents result from excessive speed?

ARMY SAFE IS ARMY STRONG

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

Boating Under the Influence is ILLEGAL NATIONWIDE

101 CRITICAL DAYS OF SUMMER
26 May – 1 Sept 2008

"It is unlawful in every state to operate a boat while under the influence of alcohol or drugs. In addition to State Boating Under the Influence (BUI) laws, there is also a Federal law, enforced by the Coast Guard, prohibiting BUI. This law applies to all boats, including foreign vessels, in U.S. waters and U.S. vessels on the high seas."

~U.S. Coast Guard

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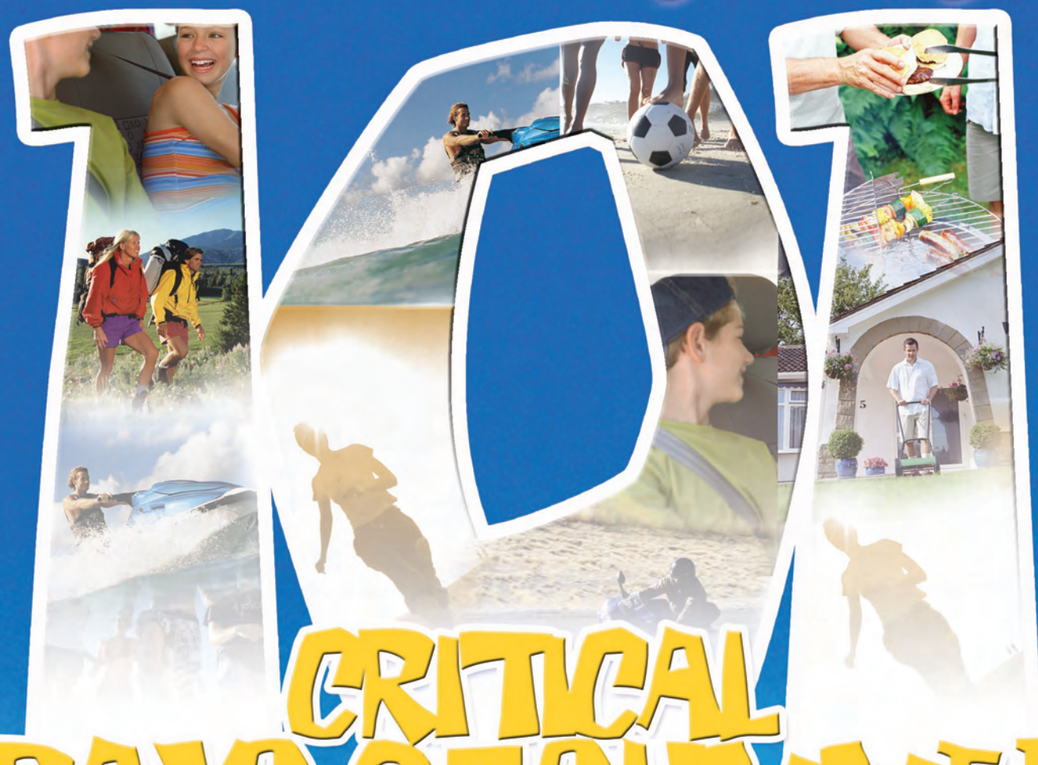
ARMY SAFE IS ARMY STRONG

Never Give Safety a Day Off



101 CRITICAL DAYS OF SUMMER

26 May - 1 Sept 2008

Each week, the U.S. Army Combat Readiness/Safety Center will publish articles, posters and videos containing information to help Soldiers use composite risk management in making sound judgments while on and off duty. The following topics will be covered during the campaign:

- MOTORCYCLE SAFETY AWARENESS
- CLICK-IT-OR-TICKET
- DRIVING UNDER THE INFLUENCE/FATIGUE
- WATERCRAFT SAFETY
- YARD WORK SAFETY
- FIREWORKS SAFETY TIPS
- GRILLING AND FOOD PREPARATION
- VACATION SAFETY
- HEAT INJURY PREVENTION
- INSECTS ATTACK
- DRIVING SAFETY
- SUN EXPOSURE
- HIKING TIPS
- CAMPING SAFETY
- ADVERSE WEATHER

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ARMY SAFE IS ARMY STRONG

NOW YOU'RE COOKIN': KEEP OUTDOOR GRILLING SAFE AND FUN p. 14

KNOWLEDGE

VOL 2, JUNE 2008

OFFICIAL SAFETY MAGAZINE OF THE U.S. ARMY

ROLL ME OVER p. 5

BING-BANG-BOOM! p. 10

U.S. ARMY

ARMY STRONG.

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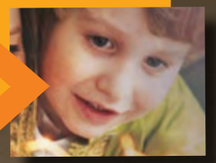
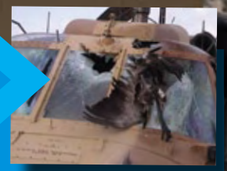
KNOWLEDGE
OFFICIAL SAFETY MAGAZINE OF THE U.S. ARMY

contents





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Brig. Gen. William H. Forrester Commander/Director of Army Safety
Col. Glenn W. Harp Deputy Commander
Command Sgt. Maj. Tod L. Glidewell Command Sergeant Major
Bill Zaharis Executive Director, Future Operations

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Taryn Gillespie Graphic Design
Leslie Tisdale Graphic Design
Kami Lisenby Graphic Design

Mission statement: USACRC supports our Army by collecting, storing, analyzing, and disseminating actionable information to assist Leaders, Soldiers, Families, and Civilians in preserving/protecting our Army's combat resources.

We welcome your feedback. Please e-mail comments to **knowledge@crc.army.mil**.

"Our **FIRST STEP** might be to **EMPOWER** the other **INFLUENCERS** in Soldiers' lives who are **PRESENT** during **OFF-DUTY TIMES**."

BREAKING THE CYCLE

There is an interesting phenomenon occurring in our Army, but none of us should be surprised. In fact, we were taught very early in our careers that, with the correct conditions and the application of just the right methods, we can predict these outcomes. To what am I referring?

Engaged leadership, at all echelons, saving Soldiers' lives!!

Probably somewhat cliché at this point, but the powerful results of the successful application of this principle are seen in our statistical losses (see graph below). What does all this mean?

Accidental losses that occur when Soldiers are in an off-duty status are three times greater than when Soldiers are on duty. Would it not seem logical that during duty time is when our Soldiers encounter greater risk? During duty, do we not ask our Soldiers to jump out of airplanes, drive super-sized equipment in the world's most inhospitable places, fly helicopters in the dead of the night at altitudes that put machines and cargo on collision courses with objects that won't give, and carry and shoot weapons that kill at ranges greater than we can see?

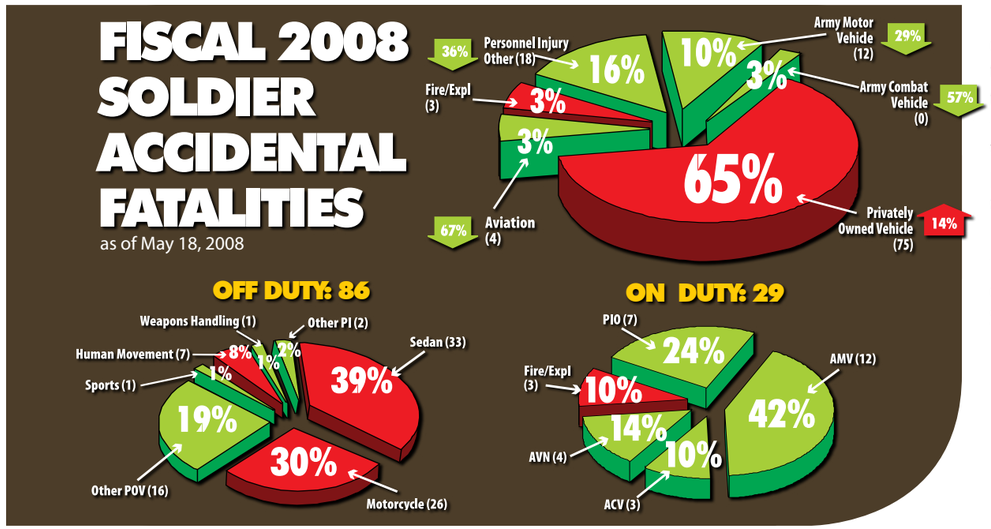
So ask yourself, where is the risk? Where and when are our Soldiers in the most danger of accidents that result in injury and death? The answers, according to statistics gathered over the last three years, point to times when our Soldiers are away from the oversight of Leaders. Our most formidable time to encounter events where death is an outcome is off duty.

Our dilemma is how do we break that cycle and return our Soldiers safely to duty after down time or off-duty activities. Now, if this were easy, we'd have already solved the problem. It is indeed complicated, and the many dimensions of our Soldiers' lives make a single solution set improbable.

Since we own our Team, our first step might be to empower the other influencers in Soldiers' lives who are present during off-duty times. We believe Family members are highly influential forces in the lives of Soldiers, with the potential to become even more powerful when we, as Leaders, facilitate an understanding of our concerns. Do we tell Families that they can have a positive impact and provide them with an understanding of risk? Do we set up our Families for success by providing situational awareness on the processes to reduce risk? Do we tell Family members they are Teammates and can contribute to the success of our Team? The answer is obviously yes.

We also believe peers and Battle Buddies are combat multipliers. Soldiers will hang with Battle Buddies – but we also want our Soldiers to hang with Battle Buddies who are positive influences, not witnesses and accessories to a crime. It makes little sense to team SPC Match with PFC Gas. How can we positively influence the Battle Buddy teaming process?

Army Team – we are doing well in decreasing the accidental devastation to our formations. But we must, and can, do more. Visit the U.S. Army Combat Readiness/Safety Center Web site for additional knowledge and tools to make each and every one of our organizations "Army Safe and Army Strong."«



William H. Forrester
Brigadier General, USA
Commanding

> "**SHARING** accident information for others **TO LEARN FROM** will not reduce Army accidents overall, but **WILL EDUCATE** and **STRENGTHEN** the **SAFETY CULTURE** we are attempting to foster."

MAINTAINING SITUATIONAL AWARENESS IN SAFETY PROGRAMS

Since taking this position, rarely a month goes by when I don't receive feedback on what I've written. That's a good thing and I appreciate your input and ideas. Command sergeants major exist to ensure information, concerns and ideas of all Soldiers are shared with those appointed over us and those we supervise.

Two-way communication and the exchange of ideas between us will facilitate a safer environment for our Army. Hopefully, you're exchanging safety best practices within formations, installations and units the same way you share mission information. Another way to support safety within your organization is to discuss accidents occurring in similar units, whether on or off your installation. Often, the difference between a Class A accident ($1 million or loss of life) and a Class D accident ($2,000 or more but less than $20,000) is inches and seconds. For one reason or another, units are often reluctant to talk about or report accidents. This means other units are not able to benefit from the lessons learned. Awareness and understanding of what caused a Class D for one rotation or unit has the potential to prevent a future Class A.

The road to success in safety is well traveled; however, it is often rough and generally includes a detour through the school of hard knocks. Reporting and publicizing accidents, however difficult it may be, will reduce future accidents and the hard knocks you and others suffer while traveling this road. Sharing accident information for others to learn from will not reduce Army accidents overall, but will educate and strengthen the safety culture we are attempting to foster. Report your accidents and ensure they make it into the Risk Management Information System (RMIS). Doing so allows others to properly plan, train and execute future missions with knowledge of the risks associated with an activity. Army Materiel Command (AMC) and the leadership of our Combat Training Centers (CTC) will tell you it is not uncommon to see units suffer the same types of incidents, rotation after rotation. Whether on a deployment or CTC rotation, sharing information and lessons learned will enable others to take precautions and not make the same mistakes.

There are several methods in place to provide and promote situational awareness of accidents in our Army. Three such tools available to Leaders are Preliminary Loss Reports (PLRs), "Got Risk?" and *Knowledge* magazine. PLRs are usually produced within 48 hours of an accident and contain the who, what, when and where of an accident, as well as recommended discussions for your formation. To receive PLRs via e-mail, visit the USACRC homepage to subscribe. "Got Risk?" is a brief synopsis of PLRs that occurred during a one-week time frame. Generally sent to battalion commanders, "Got Risk?" also affords squad Leaders the opportunity to discuss the incidents with their troops. Generally, each one contains an incident that young Leaders can relate to on a personal level. Often, both PLRs and "Got Risk?" are strategically placed in bathrooms for troops' and visitors' reading pleasure. Lastly, *Knowledge* magazine was developed in response to the continuing safety cultural transformation occurring Armywide. With a distribution of 68,000 subscribers, *Knowledge* supports our Army and the way we fight.

These tools, as with all USACRC products, enable units to become more predictive and proactive through a growing understanding and identification of accident trends. Take the time to visit the USACRC Web site at https://crc.army.mil and share information with others. The life you save may be an old friend or even your own.

The enemy, "Risk", can be defeated. Don't keep accidents a secret, beat risk by maintaining open, two-way communication and sharing ideas, both up and down the chain of command.

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

DRIVE to survive

COL. WILL G. MERRILL III
U.S. Army Central Command

Whether at home or deployed in support of the Global War on Terrorism, Leaders face a common challenge: vehicle rollover accidents.

The increased popularity of sport utility vehicles (SUVs), pickup trucks and vans at home, as well as the Army's use of high-center-of-gravity vehicles and rented SUVs in the area of responsibility (AOR), has increased our vulnerability to rollovers. Last year, the Army lost 12 Soldiers in rollover accidents, while another 45 Soldiers were injured. Fifteen of the accidents happened at home, but 30 occurred in the AOR. The fact that our junior Soldiers are frequently tasked as drivers, yet possess the least experience, places them and their passengers at a significantly higher risk. Any

> **"WEARING** a seat belt will almost always **IMPROVE** your chances of **SURVIVING A ROLLOVER** and will **DECREASE** the severity of any **INJURIES** you may receive. **BUCKLE UP.** Your life may depend on it."

training we provide will help Soldiers perform better on and off duty.

Over the past decade, more and more Americans have abandoned the "family sedan" for SUVs, pickups and vans. What some drivers might not realize, though, is these types of vehicles have different handling characteristics than a sedan. Some of these characteristics are influenced by the higher center of gravity, which often contributes to rollover crashes. The rollover crash is not a new phenomenon; vehicles have been rolling over as long as people have been driving. The increase in rollovers is due to the migration from sedans to the more popular SUVs, vans and pickup trucks.

According to the National Highway Traffic Safety Administration (NHTSA), rollover accidents are relatively rare, occurring an average of once in every 40 reported crashes. However, when they do occur, they are much more likely than most other types of crashes to result in serious injury or death. In fact, one of every three passenger vehicle fatalities occurs in a rollover crash. In Kuwait alone, we had 62 rollover accidents last year, involving Soldiers, Sailors, Airmen, Marines, civilians and contractors. Sadly, all these fatal accidents shared a common factor: the persons killed were not wearing seat belts.

Recent Department of Transportation studies indicate the vast majority of rollovers occur during ordinary driving when a driver suddenly swerves to avoid an obstacle such as a stopped car or animal in the road, or when a driver accidentally drifts off the pavement and onto the shoulder. In fatal rollovers, excessive speed and alcohol are often contributing factors. Nearly three of every four fatal rollovers occur on rural roads with posted speed limits of 55 mph or higher. In about 40 percent of these accidents, excessive speed (either above the posted limit or too fast for road conditions or the driver's ability) is cited as a contributing factor. Also, about half of all fatal rollovers involve alcohol — though not necessarily in excess of the legal limit. More than 80 percent of these accidents are single-vehicle crashes.

Since our fleet of vehicles in the AOR has very few sedans and more Army Motor Vehicles, SUVs, white assets (contractor vehicles) and high-center-of-gravity vehicles, our risk of rollover crashes is greater than back home. During fiscal 2007, 30 percent of U.S. Army Central Command's total serious motor vehicle accidents (which result in damages greater than $20,000 or injury requiring hospitalization for more than one day) involved a rollover. Of those, 24 were fatal accidents and 11 resulted in permanent partial disabilities and/or property damage.

There are several preventive measures you can take to reduce your risk of being involved in a rollover accident, such as keeping your vehicle in good condition and driving carefully. Remember, four of every five rollovers involve no other vehicle; so, as a driver, you alone are in control. You can also substantially reduce your risk of injury by wearing a seat belt. About three-quarters of the people killed in rollovers across the U.S. were not wearing their seat belts, and almost two-thirds of those were thrown out of their vehicles during the rollover. Buckling up keeps you inside the vehicle and protected by the passenger compartment's "safety cage."

Vehicle safety standards have made the passenger compartment the safest place to be during an accident. Passengers thrown from the vehicle during a rollover are not protected by anything. Wearing a seat belt will almost always improve your chances of surviving a rollover and will decrease the severity of any injuries you may receive. Buckle up. Your life may depend on it. «

REFRESHER COURSE

Everyone believes they're a good driver, but that's not always the case. Refresh your memory with the reminders below and share them with fellow Soldiers. These tips apply to driving any vehicle, whether on or off duty.

- **Don't drive too fast.** The posted speed limit is an upper limit, not a lower limit. The faster you drive, the less time you have to react to any emergency that suddenly arises on the road ahead of you. This means you'll probably end up steering more sharply and/or braking harder, both of which compromise your ability to safely control your vehicle.
- **Steering.** Many rollovers occur when drivers overcorrect their steering in response to unexpected situations, such as encountering a stopped vehicle in their lane or accidentally driving off the pavement. Sudden steering maneuvers at high speeds or on soft surfaces can lead to rollovers. If your vehicle leaves the paved road surface, slow down gradually. Don't stomp on the brakes. Then, when it's safe to do so, ease the vehicle back onto the roadway. Don't suddenly jerk the steering wheel to get the vehicle back on the pavement.
- **Be extra careful on rural roads.** Rollovers are more likely to occur on rural roads and highways, particularly undivided, two-way roads or divided roads with no barriers. When a vehicle leaves the pavement, it can be tripped by roadside objects or soft surfaces or roll down a slope. Nearly 75 percent of all rollover crashes occur in rural areas, so be extra careful when driving on rural roads.
- **Tires.** Improperly inflated and/or worn tires can be especially dangerous because they inhibit your ability to maintain vehicle control. Monitor your tire pressure regularly using a tire pressure gauge, not your eyeball. Temperature changes cause your tire pressure to decrease significantly, but you can't always tell that by just looking at the tires.
- **Vehicle loads.** Consult your vehicle's owner's manual to determine the maximum safe load for your vehicle, as well as proper load distribution. Passengers and baggage in vans and SUVs will raise the vehicle's center of gravity, increasing the vehicle's likelihood of rolling over.

DYNAMIC ROLLOVER
The Basics

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Most helicopter pilots have a complete and total understanding of all aspects of Chapters 5 and 9 of their aircraft operator's manual (Dash 10), or at least they would like to believe that's true. I hope some of those little nuggets of knowledge are filed away somewhere. Right now, if a pilot were to hear "pylon whirl" or "spike knock," it's likely a zombie-like trance would overtake him and a robotic response would follow. Another programmed response would be from the term "dynamic rollover." The definition is easy to repeat, but do pilots really know what it means or how quickly it can happen?

Field Manual (FM) 3-04.203, *Fundamentals of Flight*, addresses dynamic rollover; aircrew training manuals include a note in the maneuver description that the aviator must understand dynamic rollover before conducting slope operations; and Dash 10s include a slope-landing limit intended to minimize the chances of dynamic rollover.

Each helicopter is unique in its design and configuration. It's important to understand the specific characteristics of each helicopter. All types of rotor systems — rigid, semi-rigid or fully articulated — are affected to some extent. Tail rotor thrust and wind on the fuselage contribute to a rolling motion. The limits published in each technical manual should always be observed and taken into account. Exceeding published limits is likely to contribute to dynamic rollover.

Dynamic Rollover Sequence

Three pieces are required to complete the dynamic rollover sequence: pivot point, rolling motion and exceeding the critical angle. Without each of these pieces, dynamic rollover won't happen. It's important to understand each of these aspects to help avoid getting into this potentially dangerous and deadly situation. The events can unfold very quickly in a seemingly safe situation. Within seconds, aircraft control can be lost. Even the most experienced pilots can temporarily lose situational awareness and get into a dynamic rollover situation. No one is immune!

- Pivot point is the point at which the aircraft is in contact with the ground or some other object to provide an "anchor" point. Soft ground, landing gear frozen to the ground and even failure to remove tie downs can all provide the anchor point. Although aircraft with skids are different than aircraft with wheels, the dynamics are the same. Care should be taken to ensure the landing area is clear of hazards that might provide a pivot point and produce a rolling motion; e.g., stumps, forgotten tent pegs, displaced tie-down ropes, partially buried metal material, etc. Be sure to take into account any surface changes that could have occurred before takeoff, such as aircraft sinking in mud.
- Rolling motion is the continued movement of the aircraft in a lateral direction after contact with the ground or other object. Rolling motion is easier to control with collective as opposed to lateral cyclic inputs. Abrupt collective inputs should not be applied to get airborne. A large reduction in collective could result in a rolling motion in the opposite direction. As a roll rate increases, the recovery angle is further reduced with right skid (wheel) low condition, yaw inputs, crosswind, main rotor thrust almost equal to helicopter weight and center of gravity (CG) offset. Pedal inputs to reduce a yawing tendency should be smoothly coordinated with collective inputs to help maintain a stable aircraft direction and position over the landing point.
- Exceeding the critical angle occurs when the helicopter rolls past its static angle. Each helicopter has a static rollover angle, based on its CG and the pivot point, and it is usually described where the helicopter CG is positioned over the pivot point. When a rolling motion is introduced, a dynamic rollover angle comes into being and is known as the critical angle. It's dynamic because the greater the rolling motion, the earlier the critical angle may be exceeded. The critical angle can be exceeded even if the helicopter is on a zero-degree slope. A helicopter on a slope causes the critical angle to be changed and reduced. In general, if the bank angle starts to increase to about five to eight degrees and full corrective cyclic doesn't reduce the angle, the collective should be reduced to diminish the unstable rolling condition.

Although the basic aspects of dynamic rollover don't change, each situation is unique. An understanding of the three elements involved with dynamic rollover is the key to avoiding a potentially dangerous situation. Pilots should continue to learn from their own experiences, as well as the experiences of fellow pilots. Aircraft simulators provide a way for pilots to adjust aircraft dynamics and specific profiles to allow for realistic training in dynamic rollover recovery techniques. Understanding dynamic rollover and having a healthy respect for the aircraft and its limits are the keys to safely preserving our nation's critical warfighting resources — our aircrew members and their aircraft.

BING BANG BOOM!

COMPILED BY THE KNOWLEDGE STAFF
U.S. Army Combat Readiness/Safety Center
Fort Rucker, Ala.

Editor's Note: The names of the individuals in this story have been changed to protect the privacy of those involved.

Sgt. Jerry Hatcher completed his fourth day of training and, after being released at 4 p.m., went to his off-post quarters and prepared to go out to a local pub to meet two other members of his unit. About 8 p.m., he drove his standard-cab pickup — a factory-built, high-performance model with race styling — from his house to the pub for a party and live concert. A couple hours later, the other Soldiers joined Hatcher at the pub. Throughout the evening, Hatcher drank beer and other alcoholic drinks.

> "Ensure **EVERYONE** in your vehicle **BUCKLES UP**. Seat belts, air bags and your vehicle's crush zones **CAN'T PROTECT YOU** if you're **THROWN OUT** a **WINDOW**."

It was only two miles from the pub to Hatcher's house. After driving about three-quarters of a mile, he turned into the entrance of his subdivision. In an attempt to show off his truck's performance, he accelerated to more than 60 mph in a 25-mph zone. As he attempted to round a left-hand curve, he lost control and his truck went off the right side of the road. Sliding sideways, Hatcher's pickup hit three mailboxes and then another pickup parked in a driveway. That impact spun Hatcher's pickup 180 degrees clockwise and caused it to roll one and a half times before landing on its roof. As the pickup rolled, Johnson flew out the passenger-side window and landed about 50 feet away in the road. Although alive, he had suffered severe head injuries, including brain swelling. Hatcher called 911 to summon police and emergency medical services (EMS) to the accident scene. Once EMS personnel arrived, they arranged for Johnson to be evacuated by helicopter to a hospital. There, he was placed in a medically induced coma.

It was a half hour past midnight when Hatcher met a local female, Angela Branning, and her roommate, Sgt. Daryl Johnson. When the pub prepared to close at 1:30 a.m., Hatcher invited Johnson and Branning to ride with him to his home and continue the party. Despite the fact Hatcher was under the influence, Johnson and Branning got in. Branning sat in the middle while Johnson sat in the right passenger seat. Hatcher and Branning fastened their seat belts; however, Johnson — who had a habit of not buckling up — chose not to wear his seat belt.

Why Did This Accident Happen?

Hatcher mixed alcohol with excessive speed and reckless driving in an attempt to impress his passengers. When police checked Hatcher's breath alcohol content about an hour after the accident, it was .17 percent — more than twice the legal limit.

inside. By comparison, Hatcher and Branning wore their seat belts and were treated and released at the accident site.

As the driver, Hatcher was responsible for ensuring all his passengers buckled up. However, he failed to do that and, as a result, left a "fallen comrade" lying in the street.

Why Was Johnson Seriously Injured?

Johnson had a habit of not wearing his seat belt, which was evidenced by several traffic citations on his driving record. Being unrestrained caused him to be ejected outside the pickup's occupant compartment, where he would have been protected by the vehicle's airbags and crumple zones. Post-crash photographs of the truck show the passenger side of the cab was largely intact, providing adequate safe space for Johnson had he remained

Lessons Learned

- Blending alcohol, gasoline and asphalt is a recipe for disaster. Soldiers should never assume they can safely operate a vehicle after they have been drinking.
- Be careful who you accept rides from. If you start your trip with someone who has been drinking, you may end it with a paramedic.
- Ensure everyone in your vehicle buckles up. Seat belts, air bags and your vehicle's crush zones can't protect you if you're thrown out a window.

. . . And the Home of the Safe

JAMES HAMMONDS
U.S. Army Technical Center for Explosives Safety
McAlester, Okla.

For many Americans, fireworks are a summer tradition. Fourth of July celebrations seem incomplete without the "rockets' red glare" and "bombs bursting in air." Unfortunately, some of these celebrations will end with another, less enjoyable tradition: a trip to the emergency room. By taking the proper precautions before handling fireworks, you can help ensure your personal tribute to Independence Day is a blast.

It may surprise some to learn the only difference between military explosives and fireworks is the amount of explosives filler. In the explosives community, we handle ammunition and explosives using the cardinal principle: Expose the fewest people to the smallest amount of explosives for the shortest time possible. It's also a great rule for handling fireworks.

Before even thinking about lighting your first fuse, make sure fireworks are legal to possess and use in your city and state. The National Council on Fireworks Safety's Web site is a good source of information on state fireworks laws. You should also always ask your local fire or police department if fireworks are legal in your area. Although fireworks may be legal in your state, there may be reasons, such as a burn ban due to dry weather, why their use is prohibited in some areas.

Once you've established that you can legally shoot fireworks in your city, make sure you buy legal fireworks. Fireworks are classified as a hazardous material and will always have a label with the manufacturer's name and directions for use. Illegal fireworks such as M-80s, M-100s and blockbusters usually aren't labeled and don't have directions. Even though banned since 1966, illegal fireworks are responsible for one-third of all Fourth of July injuries. If you know of anyone selling illegal fireworks, contact your local police department.

Unfortunately, even legal fireworks that are considered a "safe" choice for younger children, such as sparklers, can be dangerous. Sparklers can reach 1,800 F — hot enough to melt gold! — and account for more than half the fireworks injuries to children under the age of 14. If children aren't mature enough to understand the rules regarding fireworks, they shouldn't handle them. Also, if your pets are afraid of noise or easily get excited and stressed, consider keeping them indoors or in pet crates until the fireworks celebration is over.

FYI

For more information about fireworks safety, statistics and state laws, visit the National Council on Fireworks Safety Web site at www.fireworksafety.com.

If someone gets hurt using fireworks, immediately go to your family doctor or a hospital. If the injury involves the eyes, do not rub or touch them. You should also never attempt to flush the eyes because some fireworks material can be activated by water. Eye injuries from fireworks are a no-wait medical decision. If someone is burned on their skin, remove their clothing and run cool water over the injury.

Fireworks are meant to be enjoyed and help celebrate an important event in the lives of all Americans. If used properly, they can be safe for everyone. Teach your children the right way to handle fireworks and they'll pass it on to their children. The last place anyone wants to celebrate America's independence is a hospital waiting room.

FYI

To help you safely celebrate the Fourth of July, the Consumer Product Safety Commission and the National Council on Fireworks Safety offer the following tips:

- Always read and follow label directions.
- Have an adult present.
- Buy from reliable sellers.
- Only use fireworks outdoors.
- Always have water handy (a garden hose and a bucket).
- Never experiment or make your own fireworks.
- Light only one firework at a time.
- Never relight a "dud" firework. Wait 15 to 20 minutes, soak it in a bucket of water and then dispose of it in your trash can.
- Never give fireworks to small children.
- Store fireworks in a cool, dry place.
- Never throw or point fireworks at other people.
- Never carry fireworks in your pocket.
- Never shoot fireworks in metal or glass containers.
- The shooter should always wear eye protection and never have any part of the body over the firework.
- Stay away from illegal explosives.

Source: National Council on Fireworks Safety

NO BURNT OFFERINGS:

HELP FOR THE BACKYARD CHEF

FRANK MCCLANAHAN
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Fort Rucker, Ala.

Whether you like to cook with propane or charcoal, the end result is the same — delicious outdoor fare that has family and friends lined up with their paper plates and plastic utensils in hand. In fact, outdoor cooking has become so popular that, according to The Weather Channel's Web site, more than half of Americans say they cook outdoors year-round because they enjoy the flavor of flame-broiled cooking so much.

Outdoor grilling can be a fun and relatively safe activity, but there is an element of risk for serious injury and property damage for the uninitiated, unprepared or careless. The following guidelines are provided to help you minimize your risk and ensure your grilling experiences are always fun, safe and successful.

Grilling with Propane

At the Consumer Product Safety Commission's (CPSC) urging, an industry standard providing several safety features in gas grills, hoses and connections was adopted in 1995. These features limit the flow of gas if a hose ruptures, shut off the grill if it overheats and prevent the flow of gas if the connection between the tank and grill is not leak-proof. If your grill was manufactured before 1995 and isn't equipped with these safety features, you might consider purchasing a new one this year. If your old standby is still working fine and you want to try to get a few more years out of it, be especially attentive to these safety tips:

- Set up your grill in an open area away from buildings, combustible materials and locations where children are likely to congregate and play.
- Inspect the gas hoses for cracking, brittleness, holes and leaks and make sure there are no sharp bends in the hoses or tubing that can interfere with the flow of fuel. Periodically, check the inside of the gas tubes for a buildup of spider webs, which create blockages that can result in gas backflowing into the control valves, where it can ignite. (An orange flame indicates an obstruction; flames should burn blue in color.)
- Keep propane cylinders in their upright position and never store spare filled cylinders near the grill or in your home.
- Inspect gas hoses to ensure they are as far away as possible from hot surfaces and hot dripping grease.
- Never use gasoline as a fuel source.
- Do not store a filled cylinder in a hot car or trunk, as heat can increase gas pressure and possibly open the relief valve, allowing gas to escape.

According to the CPSC, each year, there are about 600 fires or explosions that occur from using gas grills, resulting in injuries to about 30 people. In order to reduce these incidents, the National Fire Protection Association published a standard which requires overflow prevention devices on propane cylinders to help prevent propane leaks that can result in fires and explosions. The new propane gas tanks can be identified by valve handles with three lobes, giving them a triangle-shaped appearance. Older tanks have valve handles with five lobes. The requirement for the new cylinders was effective April 1, 2002.

Grilling with Charcoal

For charcoal grilling, only use starter fluids specified for those type grills. Follow the directions on the container and never apply additional fluid once the fire has been ignited, which could result in flames traveling up the fluid stream and igniting the container. If the fire is too slow, rekindle it with dry kindling and add more charcoal as needed. Be sure to keep starter fluid away from the grill after it has been ignited and never, under any circumstance, use gasoline as a starter fluid.

Select quality charcoal for quick lighting and a long burn life. Be sure to store charcoal in a cool, dry area and keep bags of instant-lighting charcoal tightly closed. Always remember, grills remain hot long after you are through barbecuing, so, once finished, place the lid on the grill, close the vents and allow the coals to burn out completely. When they have cooled, soak the coals thoroughly with water and dispose of them in a non-combustible container. To reduce the danger of carbon monoxide poisoning, never burn charcoal inside your home, vehicle, tent or camper. Charcoal should never be used indoors. And as with propane grilling, always make sure you keep your children away from the fire.

The Insurance Information Institute recommends that when grilling, be sure to wear a heavy apron and flame-retardant oven mitts that fit high up over the forearm. Also, in the event of a burn, run cool water over the injury for 10 to 15 minutes. Never put butter or salve on burns because they will seal in the heat and cause further blistering. For serious burns, seek medical attention immediately.

Food Safety

Of course, a successful cookout goes further than just good grilling protocol. Don't forget to adhere to food safety guidelines to prevent illnesses associated with harmful bacterial contamination. Below are some helpful tips to prevent you from serving any food-borne illnesses to your guests:

- Give your grill a good cleaning by scouring the grate with a wire brush. Spray the metal cooking grid with oven cleaner and rinse thoroughly. Before each use, apply a non-stick cooking spray to prevent food from sticking. Never apply cooking spray onto a hot grill, as the propellant may be flammable.
- Protect against cross-contamination by keeping raw meats, poultry and vegetables separate.
- Wash hands thoroughly and frequently with hot, soapy water during food preparation.
- Keep work surfaces clean and wash or change out utensils to prevent contaminating cooked meat with a utensil used to handle raw meat.
- After meat has been grilled, be sure not to place it back on a plate or platter that held raw meat.

As we approach the summer season, more and more backyard chefs will roll out their trusty grills to show off their culinary expertise. By following a few safety guidelines, you can ensure your attempt at barbeque perfection doesn't go up in flames.

FYI

For more information on grilling safety, visit the following Web sites at www.weather.com/activities/homeandgarden/home/grilling and www.iii.org/individuals/homei/tips/grilling/.

Important STACOM Information

CHIEF WARRANT OFFICER 5 CHARLES W. LENT
Directorate of Evaluation and Standardization
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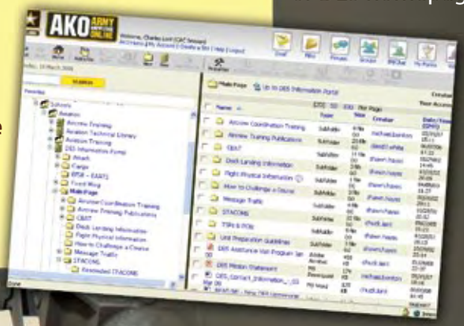
The Directorate of Evaluation and Standardization (DES) publishes standardization communications (STACOMs) to provide guidance to the field and which may precede formal staffing and distribution of Department of the Army official policy. In an effort to ensure the field has the most current information, a review of all active STACOMS was recently conducted. On a recurring basis, DES will review a listing of active STACOMS and publish it on the Army Knowledge Online (AKO) portal and in *Knowledge* magazine. To the left is a list of active STACOMS.

All previously published STACOMS not listed are rescinded and located in the rescinded STACOM folder on the AKO portal for historical purposes. Active STACOMS are available on the AKO portal DES main page: DES homepage on AKO (NIPR) at https://www.us.army.mil/suite/page/337793, or DES homepage on AKO-S (SIPR) at http://www.us.army.smil.mil/suite/page/9746. For more information, contact Chief Warrant Officer 5 Chuck Lent at (334) 255-9098 or e-mail chuck.lent@conus.army.mil. ≪

STACOM #	Date Published	Title
06-05	June 2006	Clarification of Combat Maneuvering Flight Training Requirements
06-07	July 2006	Door Gunner Integration and Utilization
07-01	Jan. 10, 2007	Clarification of STACOM 06-06: CH-47 Qualification and ATP
07-02	Jan. 10, 2007	FADEC Training
07-03	Jan. 22, 2007	Pilot in Command Requirements
07-05	June 6, 2007	LUH UH-72 Qualification
07-07	Nov. 30, 2007	Currency Requirements for the External Operator
07-08	Nov. 30, 2007	PI Flight Requirements for 05 Commanders and Above
08-01	Jan. 11, 2008	UAS Shadow Currency
08-02	Jan. 11, 2008	UH-60 FI/SI Qualification
08-03	February 2008	CH-47 Performance Planning



A MESSAGE FROM DEFENSE SECRETARY ROBERT GATES

Tragically, last year during the 101 days between Memorial Day and Labor Day, 77 servicemen and women died in private motor vehicle accidents. While Memorial Day marks the beginning of summer, it also means increased traffic on our nation's roads.

Know that the choices you make at sporting events, barbeques and other summer activities can impair your judgment and reaction times – all of which are necessary for safe driving.

Don't put your life, or the lives of others, in danger by making poor decisions. Most vehicle accidents are the result of alcohol, fatigue and excessive speed. Your safety, and the safety of those around you, is in your hands.

Enjoy the summer and all it has to offer, but be smart and safe. ≪

WHO'S THE BOSS?

The U.S. Army Combat Readiness/Safety Center and Family and Morale, Welfare and Recreation Command have joined forces to produce the BOSS Safety Factor presentation. The initiative is designed to build awareness of hazards that can befall single Soldiers during off-duty activities.

The Army lost 76 single Soldiers to off-duty accidents in fiscal 2007. Hundreds more were injured or suffered negative results due to engaging in careless or high-risk behavior. Safety Factor identifies these behaviors and emphasizes making better decisions to help prevent off-duty accidents. Soldiers get to see the possible outcome of their actions without learning by painful, first-hand experience.

The one-hour block of training will be shown at BOSS Council meetings and events. Safety Factor's slogan, "It only takes one second to become a statistic," drives home to Soldiers a very important reality – simple tasks and everyday activities can cause injury or death if proper precautions are not taken. ≪

Bird strikes, deer and moose! Oh, my!

CHRISTOPHER TRUMBLE
U.S. Army Combat Readiness/Safety Center
Fort Rucker, Ala.

Wildlife is one of God's greatest gifts. Just like many readers of *Knowledge* magazine, I, too, enjoy outdoor activities like hiking, camping, hunting and fishing. Getting the opportunity to see wildlife in the wild rather than a zoo adds to the outdoor experience. However, certain wildlife can, at times, become safety hazards – especially on the runway.

This is especially true when talking about the threat of wildlife to aviation personnel and platforms. Even if we don't have injuries or fatalities associated with wildlife, it can hinder mission readiness and become a serious source of financial loss when aircraft are taken out of service for repairs. This article looks at wildlife hazards and offers control measures to avoid, reduce or eliminate these risks.

The Federal Aviation Administration (FAA) issues airport operating certificates for airports serving certain aircraft under Title 14, Code of Federal Regulations (CFR), Part 139, Section 139.337. The FAA directs, by regulation, that all airfields in the U.S. that have a wildlife hazard problem conduct a wildlife hazard assessment (WHA) and create a wildlife hazard management plan (WHMP). The WHMP, of course, is to manage and control wildlife that pose a potential risk to public safety, caused by aircraft collisions with wildlife. The FAA relies heavily on the assistance of the U.S. Department of Agriculture Animal and Plant Health Inspection Services and Wildlife Services (WS) to review and contribute to such plans.

The Animal Damage Control Act of March 2, 1931 (7 USC 426-426c, as amended), authorizes the secretary of agriculture to manage wildlife that becomes hazardous to agricultural interests, other wildlife or human health and safety. Bird strikes and animals on runways are examples of hazards to human health and safety. Additionally, the secretary of agriculture is authorized to cooperate with states, individuals, public and private agencies, organizations and institutions in the control of noxious animals, including wildlife hazards to aviation. The WS is recognized throughout the world as an expert in dealing with wildlife damage management issues because of its experience, training and personnel.

A memorandum of understanding (MOU) between the Department of Defense (DOD) and the WS (No. 12-34-71-000307-MU) establishes a cooperative relationship between the organizations for resolving wildlife hazards to aviation. Army Regulation (AR) 95-2, *Airspace, Airfields/Heliports, Flight Activities, Air Traffic Control and Navigational Aids*, paragraph 13-3, specifically mentions the use of a WHMP to control wildlife hazards at Army airfields. Additionally, Army Field Manual (FM) 3-04.300, *Flight Operations Procedures*, paragraph 2-58, lists a requirement for airfield commanders to maintain an airfield operations manual. The WHMP is listed as a component of the airfield operations manual.

The FAA requires a WHA be conducted when any of the following occurs (14 CFR 139.337(b)):

- An aircraft experiences multiple wildlife strikes.
- An aircraft experiences substantial damage from striking wildlife. (Substantial damage means damage or structural failure incurred by an aircraft that adversely affects the structural strength, performance or flight characteristics of the aircraft and would normally require major repair or replacement of the affected component.)
- An aircraft experiences an engine ingestion of wildlife.
- Wildlife of a size, or in numbers, capable of causing events described above is observed to have access to any flight pattern or aircraft movement area.

According to 14 CFR 139.337(c), at a minimum, the WHMP shall contain the following:

- An analysis of the events or circumstances that prompted the assessment.
- Identification of the wildlife species observed and their numbers, locations, local movements and daily and seasonal occurrences.
- Identification and location of features on and near the airport that attract wildlife.
- A description of wildlife hazards to air operations.
- Recommended actions for reducing identified wildlife hazards to air operations.

> "BIRD STRIKES and ANIMALS on RUNWAYS are examples of HAZARDS to human HEALTH and SAFETY."

The U.S. Army Combat Readiness/Safety Center's (USACRC) Air Task Force (ATF) conducted research into recent Army aviation accidents using the USACRC's Risk Management Information System (RMIS), and data showed an increased trend of loss due to bird strikes at some airfields. Further investigation found that only four Army airfields have contacted the WS for assistance in assessing wildlife hazards and developing WHMPs.

In an effort to ensure installations are aware of these wildlife hazard programs, the ATF coordinated an initiative with the assistance of the following:

- Office of the Director of Army Safety
- U.S. Army Forces Command
- U.S. Army Training and Doctrine Command
- U.S. Army Materiel Command
- U.S. Army Special Operations Command
- U.S. Army Space and Missile Defense Command/U.S. Army Forces Strategic Command
- U.S. Army Europe Aviation Safety Office
- U.S. Army Aviation Branch Safety Office
- Eighth U.S. Army, Korea

It was determined AR 95-2 fully covers airfield operations in regard to a wildlife hazard and the DOD MOU with the WS is current. Your installation should leverage the assistance of the WS if you are experiencing wildlife hazards to aviation operations at airfields inside or outside the continental United States.

Using WHAs and developing WHMPs can be mutually beneficial to wildlife by protecting it from injury and to the Army by improving aviation safety and preventing loss. For additional information, the DOD MOU with the WS, along with an example of a WHA, WHMP and other documents, are available on the USACRC ATF Web page at https://crcapps2.crc.army.mil/atf/index.asp under the "Resources" tab.

Handling Shoulder Drop-offs

BOB VAN ELSBERG
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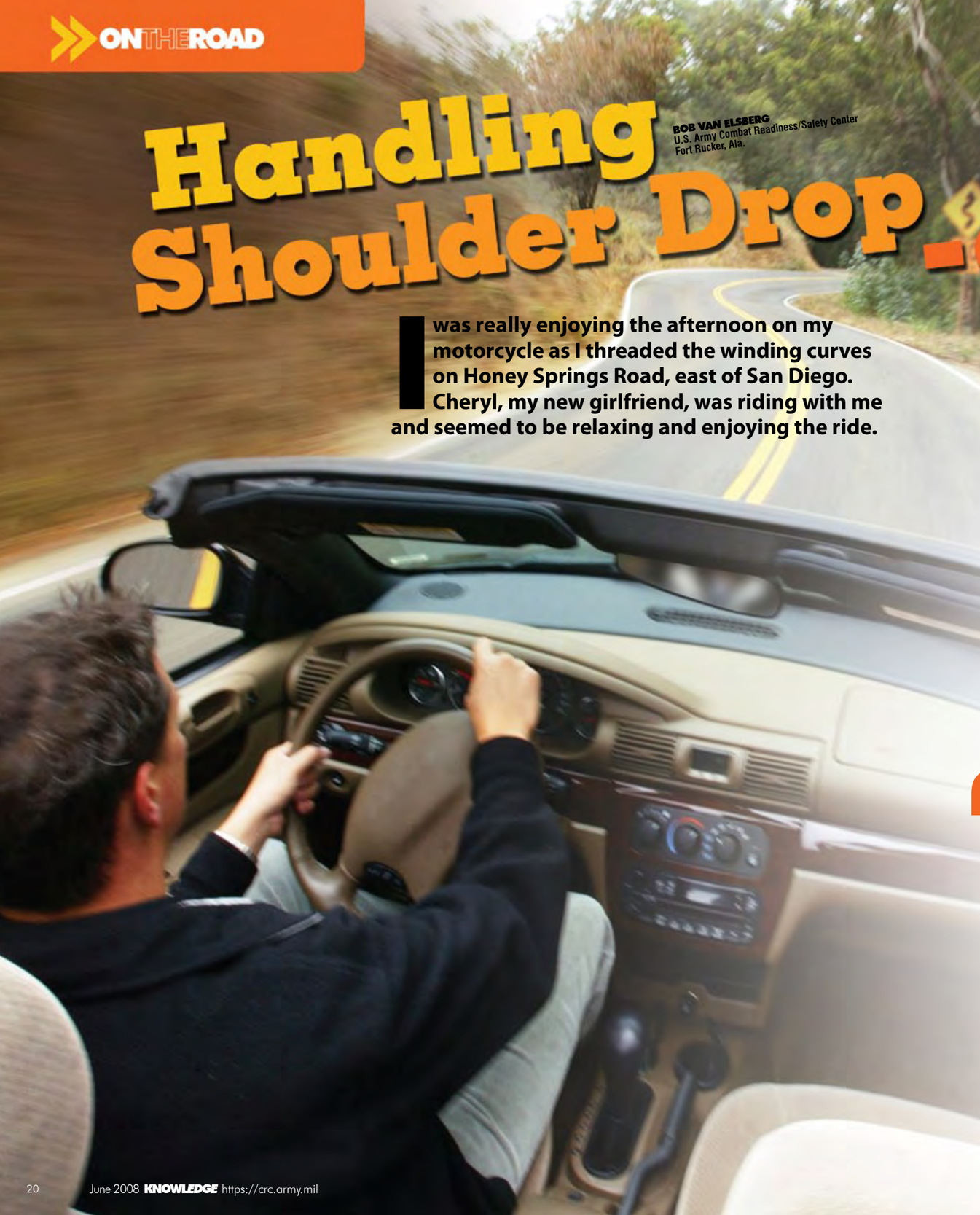


I was really enjoying the afternoon on my motorcycle as I threaded the winding curves on Honey Springs Road, east of San Diego. Cheryl, my new girlfriend, was riding with me and seemed to be relaxing and enjoying the ride.

I crested a low rise with what appeared to be a fairly easy right-hand curve. However, the road was crowned (higher in the center and lower on the sides) instead of banked, which would have helped me stay in my lane during the turn. Unable to see into the turn, I was going too fast and began to drift across the oncoming lane toward the left-hand shoulder. I heard and felt the "thump-thump" as my front and back tires ran off the drop-off and onto the left shoulder. I suddenly found myself "threading the needle" — trying to avoid going into a ditch just to my left while also trying not to angle back toward the road on my right. The road was at least 3 inches higher than the shoulder.

> "I suddenly **FOUND MYSELF** "threading the needle" — **TRYING** to **AVOID** going into **A DITCH** …"

If I'd tried to climb that drop-off without slowing down, chances were I'd dump the bike, injuring both Cheryl and myself. That's not the way I wanted the ride to end.

Fortunately, I got the bike stopped safely. And while I did not repeat that mistake on a motorcycle, there have been times when, perhaps because of inattention, I have allowed my car's passenger-side tires to drift off the road. When that has involved a shoulder drop-off of more than a couple inches, getting back onto the road sometimes has been a hairy experience. Nowhere is that more common than in construction areas where a newly paved road may have a drop-off of 4 or more inches. That can be a real attention-getter, regardless the type of vehicle you may be driving.

If you find yourself in this situation, the following tips may help you avoid becoming an accident statistic:

- Let the vehicle slow down gradually. Brake gently — if at all — so you maintain control of your vehicle.
- Look at the traffic situation. If you see oncoming traffic or traffic in your lane approaching from behind, let those vehicles pass before attempting to get back onto the road. Scan the road ahead for a spot where the pavement edge and shoulder height are as close to the same height as possible. The less the difference in height, the easier and safer it will be to maneuver back onto the road surface.
- Before trying to drive back onto the road, move your vehicle 12 to 18 inches to the right on the shoulder. This will allow you to return to the road surface at a more gradual angle and get a running start before climbing over the pavement edge.
- Steer gently to the left — about one-eighth to one-quarter turn — so your tires climb the edge at an angle. Avoid panicking and trying to quickly steer back onto the roadway.
- As soon as your right-front tire climbs back onto the road, steer gently about one-eighth to one-quarter turn to the right to center your vehicle in your lane. Only after all four wheels are safely on the road should you attempt to accelerate to the speed limit.

Warning: If the drop-off is straight down and 4 inches or more in depth, or if you don't properly straddle the pavement's edge, your right-rear tire can rub against the drop-off's edge as you try to get back onto the road. Should this happen, it can send you swerving to the left and into oncoming traffic no matter how hard you steer to the right. «

(Editor's Note: Some of the information for this story was provided courtesy of Safetyline *magazine).*

AND THE AWARD GOES TO...

EARNEST RANDLE
Army Safety Office
Washington, D.C.

On behalf of the Secretary of the Army and Chief of Staff, Army, Brig. Gen. Bill Forrester, director of Army safety and commanding general of the U.S. Army Combat Readiness/Safety Center, recently announced the Army Safety Award recipients for 2007.

These awards showcase the accident prevention efforts of units and individuals in preventing Soldier, civilian and Family member losses in our formations, as well as in the workplace and within our military communities.

The Secretary of the Army and Chief of Staff, Army, Safety Awards consist of nine awards in three categories. The Army Headquarters Safety Award recognizes Army commands (ACOM), Army Service Component Commands (ASCC) and Direct Reporting Units (DRU) that have demonstrated significant improvements, sustained excellence and leadership in their accident prevention programs. The Army Exceptional Organization Safety Award is awarded to the battalion through division and garrison organization with the most effective overall safety program. The Individual Award of Excellence is presented to individuals who make the most significant contribution to accident prevention in each of four categories: officer, noncommissioned officer/enlisted, Department of the Army civilian and contractor.

CSA Army Headquarters Safety Award

The Army Materiel Command (AMC), based at Fort Belvoir, Va., is the recipient of the Army Headquarters Safety Award for fiscal 2007. AMC demonstrated significant improvements in its overall safety program, excellence and leadership with accident reduction programs, resulting in an 11-percent decline in its lost workday rates between fiscal 2006 and 2007 and a 29-percent accident reduction from the 2002 baseline.

AMC Headquarters' establishment of a Workers Compensation Advisory Group, which provides guidance and review of installation commanders' progress in reducing civilian occupational injuries/illnesses and workers' compensation costs, was instrumental in reducing fiscal 2007 costs by more than $673,000. AMC established the Safety Rapid Review Team, which is a multi-disciplinary team of safety, industrial hygiene and occupational health professionals that provides direct assistance and specific recommendations to AMC commanders to enhance risk management implementation and improve their overall safety and occupational health posture. The team visited 22 installations/activities in fiscal 2007.

CSA Exceptional Organization Safety Award

The 82nd Airborne Division (primarily based out of Fort Bragg, N.C.); 16th Cavalry Brigade (U.S. Army Armor School, Fort Knox, Ky.); 83rd Ordnance Battalion (Headquarters, I Corps (Forward) and U.S. Army Japan); and Area Support Group-Qatar (Camp As Sayliyah, Qatar) earned the Army Exceptional Organization Safety Award.

The 82nd Airborne Division implemented an aggressive accident prevention plan which included defensive driver course (DDC) attendance for Soldiers under the age of 26 and driver improvement training for Soldiers with moving violations. Motorcycle DDC attendance before operating a motorcycle and development of a Motorcycle Mentorship Program contributed to the division attaining more than 400 days (Aug. 27, 2006 through Oct. 6, 2007) without a privately owned vehicle (POV) or privately owned motorcycle (POM) fatality.

The division developed the Individual Trooper Risk Assessment counseling form to assist the first-line supervisor in identifying high-risk troopers. The initiative is part of the monthly counseling process and is mandatory for all E-5s and below to aid in the risk mitigation process. The 82nd Airborne Division provides and requires all new Leaders to receive additional composite risk management (CRM) training during their integration phase. Other efforts, such as aggressive information campaigns, safety briefings, incentives and safety stand-down days, were noted as positively contributing to the significant accident reduction in fiscal 2007.

The 16th Cavalry Regiment demonstrated the highest level of safety awareness while simultaneously executing tracked vehicle maneuver and tank live-fire gunnery training. Despite almost doubling its operations tempo, the 16th Cavalry Regiment decreased its accident rate by almost 70 percent in fiscal 2007 and successfully completed the year without a fatality. Additional mitigation measures used by the command that significantly contributed to accident reductions

in fiscal 2007 included safety stand-down days, a unit safety incentive awards program for both individuals and units, completion of the Composite Risk Management Basic Course by all unit Soldiers and the incorporation of CRM into every aspect of training and mission tasks.

The 83rd Ordnance Battalion achieved the highest level of safety awareness while executing its ammunition supply, maintenance and demilitarization mission. Over the past seven years, the battalion conducted 29 port operations, received 13,500 short tons and shipped more than 10,500 short tons of munitions without a Class A, B or C accident. The battalion disposed of 350 short tons of munitions over the past seven years using the burn pad technique without a single mishap, which is directly attributable to following standing operating procedures (SOPs) and application of CRM. Several additional efforts, including 100 percent command completion of the Commander's Safety Course, increased seat belt usage, toolbox meetings, safety messages, increased safety training and information sharing, were noted as positively contributing to significant accident reductions in fiscal 2007.

Area Support Group-Qatar demonstrated organizational safety excellence by achieving the Department of the Army's goal of a 20-percent reduction in recordable accidents in fiscal 2007 over fiscal 2006 totals. Area Support Group-Qatar achieved zero deficiencies during the Third Army and Army Central (ARCENT) Command safety inspection in April 2007. Other efforts, such as safety council meetings, safety surveys and the incorporation of CRM into every aspect of operations, were noted as positively contributing to significant accident reductions in fiscal 2007.

CSA Individual Award of Excellence in Safety

Chief Warrant Officer 5 John Green (1st Battalion, 111th Aviation Regiment); Sgt. 1st Class Joseph M. Kaufman (Support Battalion, 196th Infantry Brigade); Mr. Douglas Day (Radford Ammunition Plant); and Mr. Robert East (Area Support Group-Qatar) were recipients of the Individual Award of Excellence in Safety.

> "Other **EFFORTS**, such as **SAFETY COUNCIL MEETINGS**, safety **SURVEYS** and the **INCORPORATION OF CRM** into every aspect of **OPERATIONS**, were **NOTED** as **POSITIVELY** contributing to **SIGNIFICANT ACCIDENT REDUCTIONS** in fiscal 2007."

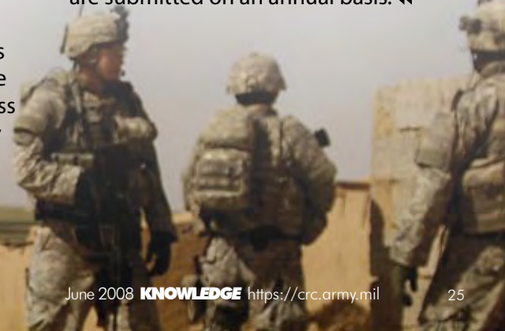
Green demonstrated a proactive approach and engaging leadership, which allowed the Aviation Task Force–Kuwait to fly more than 4,000 sorties for nearly 11,000 flight hours, delivering 4,000 passengers and more than 2 million pounds of cargo without a Class A, B or C accident. He spent countless hours coaching and teaching Sailors on risk mitigation – specifically CRM – thereby ensuring a common safety language among team members of the joint aviation task force. Green's employment of additional mitigation efforts, such as completion of the Composite Risk Management Basic Course by command Soldiers, seminars on POV and POM safety, emphasis on ground safety and revision of the battalion's SOPs on Army Motor Vehicle operations, were noted as positively contributing to significant accident reductions in fiscal 2007.

Kaufman played a key role in overhauling the battalion's safety program, integrating the primary initiative: engaged Leaders, an effective safety training program and personal accountability. He recognized a need, recommended action and received the battalion commander's concurrence for establishment of a battalion safety council, to include identifying individuals to serve as council members. Kaufman's involvement in educating personnel assigned to the Support Battalion, 196th Infantry Brigade, in POM operations resulted in the battalion experiencing zero Class A, B or C POM accidents over the past five years. He was also instrumental in promoting safety by reviewing and updating existing safety policies and procedures, conducting facility walk-through inspections, conducting weekly safety briefings and advocating the implementation of CRM into all unit activities. Kaufman's continuous diligence was noted as positively contributing to significant accident reductions in fiscal 2007.

Day implemented changes to his organization's safety program that have brought it to the highest level of commendation. He instituted a foreign object debris (FOD) control and reporting process that resulted in a 50-percent reduction in FOD incidents for fiscal 2007. Day proactively used CRM to mitigate mishaps and near misses and increased personal protective equipment training and awareness that directly contributed to injury reductions. Day's attention in other areas of the safety program, including training, supervising demolitions, enforcing seat belt usage, onsite evaluations and accident investigations were noted as contributing significantly to accident reductions in fiscal 2007.

East's efforts contributed to the command achieving the Department of the Army's goal of a 20-percent reduction in recordable accidents. Area Support Group-Qatar ended fiscal 2007 with 13 recordable accidents, compared to 16 recordable accidents in fiscal 2006. East achieved zero deficiencies on the Third Army and ARCENT command safety inspection, which resulted in three commendable and seven sustain ratings. East's use of additional accident reduction measures, including onsite evaluations, accident investigations, information sharing and safety meetings, were noted as positively contributing to significant accident reductions in fiscal 2007.

Congratulations to all the fiscal 2007 winners. Nominations for the fiscal 2008 Army Headquarters Safety Award, Army Exceptional Organization Safety Award and Army Individual Award of Excellence in Safety may be sent from Army Headquarters (ACOM, ASCC, DRU) to the Office of the Director of Army Safety (DASAF), 223 23rd Street, Alexandria, VA 22202, or electronically to ASO@hqda.army.mil. Army Headquarters should select and forward one nomination for each category no later than November of each year. Nominations are submitted on an annual basis.



USACRC Honored for Safety Excellence

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

The U.S. Army Combat Readiness/Safety Center (USACRC) was recently recognized for its commitment and excellence to safety with the Army Aviation Association of America's (AAAA) Robert M. Leich Award.

The award was presented to Brig. Gen. Bill Forrester, commanding general of the USACRC and director of Army safety, and Command Sgt. Maj. Tod Glidewell April 14, 2008, at AAAA's annual convention in National Harbor, Md.

Forrester accepted the award on behalf of the entire Army in recognition of the sustained superior safety performance achieved in 2007. The Army concluded fiscal 2007 with a 20-percent reduction in Army aviation accidents from 2006. The reduction is credited to increased safety awareness and implementation of safety tools and programs Armywide.

Challenged by the Chief of Staff of the Army to lead our force in a safety transformation, the USACRC supports Army Leaders in assessing loss trends and uses cutting-edge technology to develop innovative tools and training programs focused on reducing accidents Armywide.

In 2007, the USACRC deployed 16 accident investigation teams worldwide, working more than 1,500 man-days. The efforts of these teams and the resulting input to the USACRC's Digital Collection, Analysis and Integration Lab provided the U.S. Army Aviation Warfighting Center's Aircraft Shoot Down Assessment Team critical analysis needed for the development of new tactics, techniques and procedures to avoid further combat losses of aircraft and crews.

Embracing the need for culture change, the Army implemented safety programs developed by the USACRC such as the Army Readiness Assessment Program (ARAP), designed specifically to target an organization's safety climate and culture. ARAP provides battalion commanders and Leaders of equivalent-sized organizations an uncensored view of what is happening "below the waterline" in their units. During fiscal 2007, 165 aviation units Armywide participated in ARAP, accounting for 59,539 military and civilian personnel.

More than 128 Army officers from the active and reserve components, including 15 allied officers, supported continuing education in the safety field by attending training courses at the USACRC. Additionally, the Armywide application of the Family Engagement Kit, developed by the USACRC, successfully bolstered the "battle buddy" concept between Families and Soldiers, empowering Family members to engage in best practices.

The USACRC was previously honored with the Robert M. Leich Award in 1985.

Transforming Army Culture

USACRC hosts Senior Safety Symposium

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Editor's note: The comments from Senior Safety Symposium participants are their opinions and observations and do not necessarily reflect Army policy or the U.S. Army Combat Readiness/Safety Center's position.

In an effort to actively reduce Soldier losses, as well as understand ongoing trends relating to safety culture, the U.S. Army Combat Readiness/Safety Center recently hosted a three-day Senior Safety Symposium.

The biannual event focused on the overall accident losses the Army has experienced this fiscal year, accident trends, human factor involvement, safety culture transformation in the force and best safety practices. The theme of this year's symposium was "Transforming Army Culture through Engagement."

Keynote speaker Gen. Charles C. Campbell, commanding general, U.S. Army Forces Command (FORSCOM), spoke about the challenges facing FORSCOM.

"There is a massive amount of change in the Army today," Campbell said. "We are transforming at a rapid pace. … We are deploying three combat brigade teams in Iraq over the next three months. There is continuous substitution. Skill sets are different; therefore, the challenges presented to you as safety specialists are more challenging. One way to meet these challenges is to be 'drivers of change' and be interactive in the adaptation of these agents."

Campbell believes boots on the ground provide capabilities that no technology could ever replace, and engagement at every level is a necessity.

"All Soldiers make choices, and there are always consequences with those choices," Campbell said. "Soldiers have an exaggerated sense of immortality, which is why they purchase motorcycles and drive them at high rates of

A LEADERSHIP CHALLENGE

CHRIS FRAZIER
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Fort Rucker, Ala.

One Army safety director would like to see Soldiers receive additional driver's training before heading to theater.

Col. Will G. Merrill III, U.S. Army Central Command safety director, said if he could change one thing in the Army, he would add a week to all entry-level training programs to include driver's training and testing. He also believes that the addition of unit driver trainers/instructors ("instructor pilots," of sorts) to conduct check rides might improve driver performance through feedback similar to what is done in aviation units.

Although Merrill recognizes driver training won't solve all the Army's problems, he said it will help Soldiers cope with one of the most unexpected dangers they'll experience in theater.

"Some of the drivers on the roads in the Middle East have little or no formal driver training, and their roads are significantly different than those at home," Merrill said. "When the traffic is unpredictable, even experienced Soldiers can have difficulty operating a vehicle safely. Soldiers tend to assimilate into their environment. They end up driving too fast for their abilities and unknowingly reduce their ability to safely react and maneuver when hazards appear. Then, there is also a segment of our force that lives dangerously because they're drawing hazardous duty pay. That is a leadership challenge."

Merrill said another area of concern is ground guiding the multitude of vehicles at the staging yards during convoy preparations.

"The most common mistake we've seen when Soldiers attempt to ground guide a vehicle is they drift out of sight of the driver," Merrill said. "Fortunately, good supervision has prevented serious losses, but we have had one Soldier killed and two others injured while trying to do the right thing the wrong way. Leaders need to emphasize that the driver should immediately stop if he loses sight of his guide."

The most critical key to Soldier survival, however, remains proper supervision from Leaders, Merrill added. However, during decentralized operations, such as those situations units encounter upon deployment, key Leaders are spread thin. Merrill said those Leaders need to tap into the power of their junior Leaders, right down to the newest private in the unit.

Merrill would also like to see the use of battle buddies become a requirement. He said Soldiers listen to their buddies, and that can help Leaders supervise more efficiently if it's done properly. However, it needs to start at home station.

"We see a lot of unusual things here that Soldiers are not accustomed to and may not handle well if their Leaders are not actively engaged in supervising and enforcing the standards," Merrill said. "It doesn't matter how well trained that 25-year-old sergeant is. When he gets out there, it's going to challenge all of his abilities to keep his Soldiers doing the right thing the right way."

speed, which indicates to me that they are not wise about being safe. Somehow, we have to ensure they are making wise decisions with their choices."

Brig. Gen. Bill Forrester, director of Army safety and commanding general of the USACRC, added that safety officials play an important role in ensuring loss of Soldiers remains at a minimum.

"We have been given some tough goals to achieve this fiscal year in preventing losses among our ranks," Forrester said. "One way we are going to be able to achieve these goals is through your work and dedication as safety specialists. Please remain vigilant with our initiatives to better integrate our safety plan as part of our safety culture."

The symposium also covered topics such as deployment safety and hazards and risks with Col. Will G. Merrill III, U.S. Army Central Command safety director; deployment lessons learned with Col. Robert Noback, dean of the U.S. Army School of Aviation Medicine; and an overview of safety program accomplishments and goals by Tad Davis, deputy assistant secretary of the Army for Environment, Safety and Occupational Health.«

> "**BOOTS ON THE GROUND** provide **CAPABILITIES** that **NO TECHNOLOGY** could ever **REPLACE**, and **ENGAGEMENT** at every level is a **NECESSITY.**"

BRIGADE COMBAT TEAMS LESSONS LEARNED

BOB VAN ELSBERG
U.S. Army Combat Readiness/Safety Center
Fort Rucker, Ala.

The safety lessons learned from deployments in Iraq can be tools to help save Soldiers' lives. William Del Solar, a safety officer with the 10th Mountain Division, spoke about what he called "Safety Preparation of the Battlefield" — the need for deploying units to get a handle on the accident problems they may face from those who've already deployed.

"I want to know the hazards," Del Solar said. "Tell me what's happened in the past, what kind of accidents you've had. That's what I want to know."

He explained that sharing information is important during Relief in Place and Transfer of Authority operations. Soldiers arriving in theater may encounter new or unfamiliar equipment. He cited, as an example, 5-ton trucks modified with the "Hunter Box," an armor kit that limits the vehicle's cargo capacity to 650 pounds. He said some Soldiers coming into the theater might not be familiar with these modified vehicles and unknowingly overload them. In one such instance, an accident occurred that killed several passengers. Del Solar emphasized the importance of ensuring incoming Soldiers know the limitations of the equipment they are taking over.

Del Solar also discussed the problems of operating in a country where construction or electrical work done by local contractors may not meet safety standards and can pose a threat to Soldiers. He pointed out that some of the locally available electrical components are of inferior quality and are prone to fail and catch fire. This problem, coupled with jury-rigged repairs, has sometimes led to electrical fires — one of Del Solar's biggest problems in theater.

One of the problems safety personnel sometimes encounter in theater is a "we're-at-war" attitude used as an excuse for taking safety shortcuts. Keeping that attitude from leading to losses in Soldiers, equipment or facilities was one of the challenges faced by Dave Mushtare, 10th Mountain Division safety director.

When dealing with committees and action councils regarding infrastructure, construction and future planning, Mushtare advised them that Department of Defense standards held them responsible for providing a safe and secure environment. When faced with the argument that those standards didn't apply outside the United States, he'd remind them it was their professional and moral obligation to apply those standards wherever they were.

Mushtare explained the sense of mission urgency can sometimes get Soldiers killed in accidents. The "Warrior Ethos" — the responsibility Soldiers feel for their buddies — and the adrenaline that kicks in during combat can be a temptation to bypass safety. Keeping that in check is the responsibility of Leaders, Mushtare said. He said they must ensure pilots don't fly beyond their skills or their aircraft's capabilities. He added the same was true for vehicle drivers so they don't drive beyond their skills or outdrive their improvised explosive device detection systems. He emphasized the importance of pre-mission planning — including proper crew selection, performing preventive maintenance and pre-combat checks and ensuring mission briefs include the risk management controls — to preventing accidents.

Mushtare added that risk management must also be flexible enough to respond to the realities of combat.

"We must remember that on the battlefield, the enemy always has a vote in the outcome," he said. "There will be times when a split-second decision must be made. This is where the amount and quality of the training Soldiers have received will be a key factor."

Mushtare gave as an example a situation where Soldiers taking fire might need to take cover in a dark cave. Normally, time permitting, the cave should be checked with a source of light, such as a flashlight, before entering. However, when Soldiers are under enemy fire and the cave is their only refuge from injury and death, they would need to hustle inside and react accordingly to any threats. While combat will dictate taking higher risks at times, Mushtare warned it's important to avoid a mind-set where everything is seen as a life-or-death decision. Wherever possible, he said, Leaders must take the time to plan for less risky options.«

DEPLOYMENT MEDICAL CONCERNS

PAULA ALLMAN
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Deploying — it's part of everyday life in the Army. However, there are numerous medical and environmental factors that can degrade mission performance. Col. Robert Noback, dean of the U.S. Army School of Aviation Medicine, spoke at the Senior Safety Symposium about the medical community's major responsibilities when gathering information for a predeployment medical survey. He explained the major objective is to consider the risks present in the environment and recommend countermeasures to reduce those risks to preserve the health and performance of the unit.

"Iraq is the big show in town, followed by Afghanistan," Noback said. "There are many other places, such as the Philippines, that are forgotten about. The Horn of Africa is another 'forgotten war.'"

Going into these unfamiliar areas, Noback added, can present unusual and hard-to-predict hazards. This, along with the unfamiliarity that can come from working in a joint operations environment, may lead to incomplete safety cultures. For example, in Djibouti, animals Soldiers may only have seen in zoos may show up on running trails. While Soldiers are not likely to get attacked by a lion, they also shouldn't try to pet the hyenas.

In another instance, a Soldier developed a rash and went to medics to have it checked out. He was given hydrocortisone and steroidal creams, but neither helped. Later, others in the unit developed the same rash and were sidelined. No one knew what the problem was until a local physician quickly identified that the rash was connected to a local insect. The insect, while uncommon in the U.S., was prevalent in the area where the Soldiers were deployed. Knowing what caused the problem, doctors could finally treat the rash properly and pass that information to others deploying to their location.

"When one person has an accident or makes a mistake, a whole unit can suffer," Noback said. He recognized that Soldiers and other service members are trying to do the right things. One of the most important things they can do, he said, is know what the previous unit went through so they can learn as much as possible from their lessons.

Infection risks such as malaria, tuberculosis, diarrheal illness and leishmaniasis, to name a few, can be found in the area of responsibility. Historically, most casualties are from disease and non-battle injuries. Most can be prevented with vaccination, good personal hygiene, proper use of insect repellents and consumption of water and food from approved sources.

Noback explained that joint operations can also create several problems for units that don't habitually work or train together. Different services may have different standards, equipment, cultural values and tactics, techniques and procedures. When working in a joint unit, service members may have to take on roles or responsibilities that are new or unexpected. It's important that differences are quickly resolved and rivalries reduced to the "just-kidding-around" stage. In today's environments, the experience level may not always match the rank or service; you might find an Airman or Sailor filling an Army billet. In the end, it's the guy with the right experience who needs to be listened to.

Fatigue is another unavoidable issue Soldiers face while deployed. However, Noback said, its effects can be minimized if Soldiers get enough sleep in a proper environment, preferably a dark, cool, quiet area.

Composite risk management has also proved to be a valuable tool for combating the multitude of issues service members face. Noback said Leaders getting engaged at all levels will help keep operational risks in check.«

—Editor's note: Col. Noback recently returned from serving as the command surgeon, Special Operations Command Central.

LOST

AVIATION

CH-47

CLASS C D Model

The left-side emergency escape hatch separated from the aircraft while in flight. Inspection revealed damage to the forward high-frequency antenna.

CLASS D

During the landing phase of a confined area operation, the aircraft rotor system came in contact with a small pine tree, which resulted in damage to all three rotor blades. The aircraft was landed, shut down and the blades were inspected by a maintenance test pilot. The aircraft was cleared for a one-time flight to the Army Aviation Support Facility. Late report.

MH-60

CLASS C K Model

Post-flight inspection revealed tip cap damage consistent with a tree strike to three main rotor blades.

IS YOUR LANDING AREA AS LARGE AS YOUR AIRCRAFT REQUIRES?

UH-60

CLASS C A Model

Post-flight inspection revealed damage consistent with a wire strike to the high-frequency antenna and underside of the fuselage. The crew negotiated wires, but did not experience any anomaly to indicate a strike.

WAS THE HAZARDS MAP UTILIZED AND WERE HAZARDS UPDATED ON FLIGHT MAPS AND ALONG THE ROUTE OF FLIGHT?

CLASS E

While conducting a paradrop mission, a CGU-1B cargo strap was removed from the cargo door area, allowing jumpers to exit the aircraft. As the paradrop team exited the aircraft, a Soldier knocked the ratchet end of the strap out of the aircraft. The strap contacted the surface of the door and flapped against it several times before the crew chief could secure the strap and pull it inside the aircraft. The aircrew completed the mission and returned to the airfield. Minor damage was found to the cargo door upon post-flight inspection. Late report.

CLASS A L Model

The aircraft main landing gear sunk into soft ground during touchdown to an unimproved surface, allowing the aircraft nose section to contact a rocky surface. Post-flight inspection revealed possible damage to the airframe.

CLASS C

The aircraft suffered damage to the main rotor blade (leading edge) as a result of a bird strike during flight.

UAS

MQ-5A

CLASS A

The controller lost visual contact during landing approach in reduced visibility/ceiling conditions. The UAS landed short of the runway in rough terrain.

GROUND

Personnel Injury

CLASS A

A Soldier suffered fatal injuries when he fell while visiting a park. The Soldier was taking pictures on a boulder ledge when he lost his balance and fell 25 feet. He was evacuated to a local medical center for treatment but later died from his injuries.

A Soldier was found dead on a set of railroad tracks after being struck by a train.

CLASS C

A Soldier fractured his back when he rode his snowboard off a 4-foot drop-off on the side of a mountain, lost control and crashed.

A Soldier fractured his back when the ladder he was working from slid off the house and fell to the ground. The Soldier landed on his back on top of the ladder.

DRIVING

POV

CLASS A

A Soldier was driving his pickup truck with another Soldier riding as a passenger when he lost control, struck a parked vehicle and overturned. The passenger, who was not wearing his seat belt, was ejected and suffered serious head injuries. (See the story "Bing-Bang-Boom" in this issue of *Knowledge*).

A Soldier was driving his pickup truck after dark when he reportedly swerved to miss a deer and went off the road and struck a large tree. The Soldier was fatally injured.

A Soldier was driving his sedan and passing another vehicle on the right when he lost control and his vehicle

ARMY AIRCRAFT LOSSES

Fiscal 2002 to Present

through May 13, 2008

AH-64A/D	11/51
U/MH-60A/L	8/28
C/MH-47	7/16
OH-58D	11/28
TOTAL	**37/123**

ARMY GROUND LOSSES

Fiscal 2008

through May 14, 2008

AMV	15/12
ACV	4/2
PERSONNEL INJURY includes weapons handling accidents	21/18
FIRE/ EXPLOSION	3/3
PROPERTY DAMAGE	1/0
TOTAL	**44/35**

PLANNING SUMMER TRiPS?

As we enter the summer months, many Soldiers are finalizing their travel plans for some much-deserved leave. Before hitting the open road, however, Leaders must ensure their Soldiers complete a Travel Risk Planning System (TRiPS) assessment.

TRiPS is an online automated risk assessment tool specifically designed for personnel using their privately owned vehicles (POV) or motorcycles during pass, leave, TDY or PCS. For fiscal 2007, Army personnel using TRiPS were 4.2 times less likely to have been involved in a fatal POV accident. With more than 3 million Army assessments completed since the inception of the tool, this is a positive impact on safety. Because it has been so effective in reducing Army fatalities, it was also adopted by all military Services.

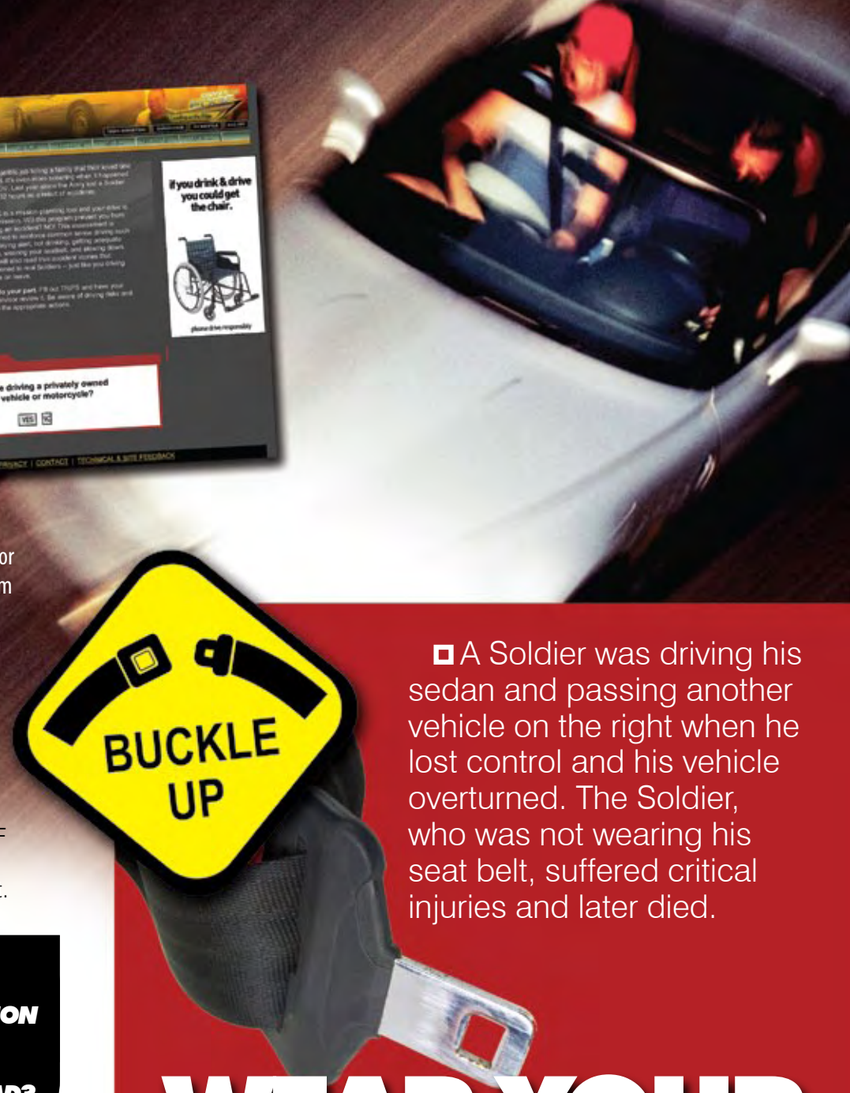
The key to the program's success is the way it involves Leaders with their Soldiers' travel plans. In addition to providing Leaders with details not reflected on a Soldier's leave form, it provides recommended actions to reduce hazards and also calculates the trip's overall risk. Armed with vital facts, Leaders may then elect to approve or disapprove the online assessment.

So, how does TRiPS work? Users provide risk-related information, including the type of vehicle they are using, departure time, travel distance, driver's age, driving courses attended and seat belt use. Other information collected includes vehicle safety inspections, driver rest before travel, driver medication or alcohol use, checking weather forecasts, whether the driving will be during day or night, the type of road traveling on and planned rest stops.

Based upon the chosen parameters, TRiPS provides real accident summaries reflecting similar travel information, an initial risk level for the trip and recommendations with selectable mitigation measures to further reduce hazards. Those recommendations may include following medication directions and informing the chain of command of over-the-counter medications taken, checking the weather before traveling and taking precautions for driving at night or on two-lane roads. In addition, to prevent driver fatigue, the assessment may suggest periodic rest stops or sharing driving responsibilities.

Users receive a final risk calculation based on the mitigation measures taken, and then the tool provides them with driving directions and a map. TRiPS enables users to electronically submit their assessments to their supervisors and also fill out a partially completed leave form.

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



A Soldier was driving his sedan and passing another vehicle on the right when he lost control and his vehicle overturned. The Soldier, who was not wearing his seat belt, suffered critical injuries and later died.

DO YOUR SOLDIERS UNDERSTAND THAT PASSING ON THE RIGHT IS DANGEROUS AND, IN MANY CASES, ILLEGAL?

WEAR YOUR SEAT BELT

POM

CLASS A

A Soldier died two days after purchasing a new sportbike when he was riding at high speed, lost control and veered into the path of an oncoming sport utility vehicle. The Soldier wore a helmet but was unlicensed and had not attended Motorcycle Safety Foundation (MSF) training. The Soldier's chain of command was aware of him considering the purchase, had asked him to delay buying and even enrolled him in the installation riders' training course.

A Soldier was operating his cruiser-type motorcycle when involved in a single-vehicle accident. The Soldier injured his spine and was diagnosed with total paralysis.

A Soldier was operating his sportbike when he struck a curb, crashed into an adjacent creek and was killed. The Soldier was licensed, had MSF training and was wearing his personal protective equipment.

DO YOUR RIDERS UNDERSTAND THAT PROPER LANE POSITION WILL GIVE THEM A BUFFER AGAINST HAZARDS IN THE ROAD?

A Soldier was operating a borrowed motorcycle in a residential area when he struck the rear of a parked vehicle and was thrown from the bike. The Soldier, who was not wearing a helmet, suffered fatal head injuries.

Editor's note: Information published in the accident briefs section is based on preliminary loss reports submitted by units and is subject to change. For more information on selected accident briefs, e-mail knowledge@crc.army.mil.

POV DRIVING LOSSES Fiscal 2008

through May 14, 2008	Class A accidents/Soldiers killed
CARS	31/31
SUV/JEEPS	6/7
TRUCKS	8/6
MOTORCYCLES	26/25
OTHER*	2/2

*Includes: vans and ATVs

71 TOTAL DEATHS

Fiscal 2007: 63 3 year average: 70

CORRECTION

In the February issue of *Knowledge*, the Soldier featured in the centerfold poster is wearing unauthorized eyewear. Soldiers are not authorized to wear colored tints, other than smoke-colored lenses, because they block the transmission of specific colors, which may increase operational risk. The *Knowledge* staff regrets the error. For more information on the authorized protective eyewear list, visit https://peosoldier.army.mil/pmseq/eyewear.asp.

SPEED KILLS
LEADERS TOO

ESTIMATED SPEED - 140 MPH

An NCO was operating his sportbike at a high rate of speed when he lost control, went off the road and crashed into a tree. The NCO, who was wearing all his personal protective equipment, was evacuated to a local medical center, where he was pronounced dead.

Engaged Leaders Make a Difference

- Did you know that more than two-thirds of single-vehicle accidents result from excessive speed?

ARMY SAFE IS ARMY STRONG

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https://crc.army.mil

Boating Under the Influence is ILLEGAL NATIONWIDE

101 CRITICAL DAYS OF SUMMER
26 May – 1 Sept 2008

"It is unlawful in every state to operate a boat while under the influence of alcohol or drugs. In addition to State Boating Under the Influence (BUI) laws, there is also a Federal law, enforced by the Coast Guard, prohibiting BUI. This law applies to all boats, including foreign vessels, in U.S. waters and U.S. vessels on the high seas."

~U.S. Coast Guard

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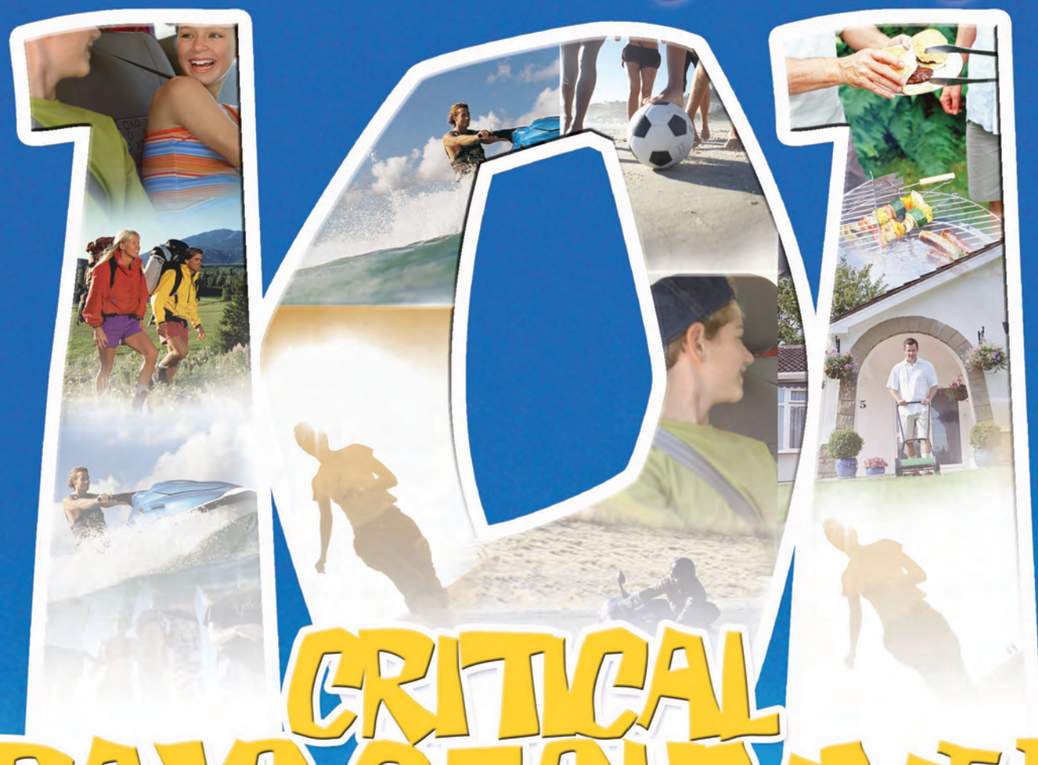
ARMY SAFE IS ARMY STRONG

Never Give Safety a Day Off



101 CRITICAL DAYS OF SUMMER

26 May - 1 Sept 2008

Each week, the U.S. Army Combat Readiness/Safety Center will publish articles, posters and videos containing information to help Soldiers use composite risk management in making sound judgments while on and off duty. The following topics will be covered during the campaign:

- MOTORCYCLE SAFETY AWARENESS
- CLICK-IT-OR-TICKET
- DRIVING UNDER THE INFLUENCE/FATIGUE
- WATERCRAFT SAFETY
- YARD WORK SAFETY
- FIREWORKS SAFETY TIPS
- GRILLING AND FOOD PREPARATION
- VACATION SAFETY
- HEAT INJURY PREVENTION
- INSECTS ATTACK
- DRIVING SAFETY
- SUN EXPOSURE
- HIKING TIPS
- CAMPING SAFETY
- ADVERSE WEATHER

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ARMY SAFE IS ARMY STRONG

SET FOR SUCCESS: THE ART OF RISK MANAGEMENT p. 16

KNOWLEDGE

VOL 2 JULY 2008

OFFICIAL SAFETY MAGAZINE OF THE U.S. ARMY

BEST PRACTICES p. 6

+

KEEP IT CLEAN p. 26

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KNOWLEDGE
OFFICIAL SAFETY MAGAZINE OF THE U.S. ARMY

contents

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Mission statement: USACRC supports our Army by collecting, storing, analyzing, and disseminating actionable information to assist Leaders, Soldiers, Families, and Civilians in preserving/protecting our Army's combat resources.

We welcome your feedback. Please e-mail comments to **knowledge@crc.army.mil**.

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ENTERING THE "BAND OF BROTHERS"

> "ENGAGEMENT means YOUR personal involvement – STEPPING IN wherever and whenever the SITUATION calls for it."

We all hear about the positive impact engaged leadership at all echelons makes toward protecting our Soldiers, Civilians and Families and decreasing accidental loss. But who provides that leadership? Who are the Leaders in our Army responsible for taking accountability for safety? Your answer is "me."

Every member of our Army team is a Leader. Each person makes a difference in preventing accidents, engaging in safety practices both on and off duty, and mentoring and bridging the gaps in knowledge for others by sharing their experiences. But the key to success in decreasing accident losses remains "engagement" – each one of you stepping up, engaging and sharing from the lowest level to the top.

Engagement means your personal involvement – stepping in wherever and whenever the situation calls for it. It can be as simple as just asking the right question at the right time. For instance, seeing your Family member head out the door to ride a motorcycle without all the proper protective equipment – "Don't you need all your PPE?" Or watching your buddies put together a spur-of-the-moment road trip – "Have you thought this through? Which one of you is taking responsibility for ensuring a safe ride back for all of you?" How many times have you heard someone, upon learning of a tragic accident, say out loud, "I knew something like that was going to happen. Why didn't somebody do something?" You are that somebody and you can do something!

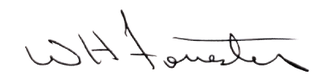
That's how an individual Leader makes a difference. But why make such a commitment? Think that is a "no-brainer" question, as well? Our Army codified our commitment to the team through the Soldier's Creed. As you well know, within the Creed are four very powerful sentences which are further described as the "Warrior Ethos." The last line of the "Warrior Ethos" states, "I will never leave a fallen comrade." But when is a comrade fallen? Obviously, we have fallen comrades on the mountains above the Shahi-Kot Valley and in the streets of Fallujah. But don't we also have fallen comrades in the bars of Itaewon, in our own formations and even inside their own homes? Aren't these comrades also worthy of our engagement?

So, we remain committed to our comrades by engaging and remaining engaged at every level required. Only together can we reduce accidental losses to their lowest levels yet. This year, we are on our way to achieving that goal. This is the result of each one of you stepping up every day and actively honoring your sworn commitment to your comrades.

By exercising ownership of our Army, we enter into a culture that strives to continuously reduce our accidental losses to levels never before achieved, where we truly operate as a "Band of Brothers."

Thank you for all you do to keep our Soldiers, Families and Civilians safe. Remain engaged and continue supporting safety transformation, changing the safety climate throughout the Army and sharing lessons learned to prevent the next loss. You make the difference.

Army Safe is Army Strong!



William H. Forrester
Brigadier General, USA
Commanding

TACKLING EVERYDAY RISKS

> "RISK is INHERENT in our line of work, but can often be mitigated by EXPERIENCE, PLANNING and TRAINING."

Happy Birthday, America! For 232 years, our country has been known as the land of the free and home of the brave because of the Soldiers and servicemembers who have sacrificed to defend her against all enemies – foreign and domestic. At this very moment, that sacrifice continues. We at the U.S. Army Combat Readiness/Safety Center commend every one of you on your tireless dedication to duty. A lot has changed in the 233 years since our Army was established. Our Army has served the greatest nation in the world. Change and transformation is nothing new to the Army, but how we train to meet an evolving threat may be the Army's greatest challenge to date. Whether in or out of country, on or off duty, the greatest enemy to our safety is risk. Risk is inherent in our line of work, but can often be mitigated by experience, planning and training. Below are three ways we can tackle everyday risks that can affect our safety:

- The fielding of the Mine Resistant Ambush Protected (MRAP) vehicle was designed to meet an evolving threat. Training has been developed to meet the user's needs immediately, providing 40 hours of instruction in the same geographic location as the user. The plan provides systems at home station and VISMODS at CTC in which to train and gain valuable experience prior to the deployment. I had the opportunity to sit through this training and drive an MRAP during a recent visit to Operation Enduring Freedom. It is a tremendous improvement over the M1114s we drove on my two previous rotations to Operation Iraqi Freedom. Unfortunately, there are two ghosts still haunting us from the M1114 days that we have yet to overcome: Soldiers assigned at the last minute and Soldiers not wearing seat belts. There is nothing that can substitute training and experience before a deployment. The myth about being better off not wearing seat belts when riding in a vehicle outside the wire couldn't be further from the truth. If you truly believe this misconception, train as you fight. Put on your gear and take a spin in the HEAT trainer without your seat belt. You'll suffer at least two blows – one produced by the initial accident and another when you're thrown about the inside of the trainer. Hopefully, you won't be knocked unconscious because you still have to remove yourself from the M1114. Bottom line, wear your seat belt.
- Driving a privately owned vehicle (POV) is the single most dangerous event we engage in on a daily basis. Many installations have enacted driving centers of excellence to educate drivers and better prepare them for what may lie ahead. Nearly 80 percent of all active duty sedan accidents are committed by drivers under the age of 25. Through the use of classroom instruction, simulators and several other tools, we are gaining the initiative in military and civilian driving. Recently, the Army and Navy combined their efforts to develop and field a motorcycle sportbike course. This course was designed to better prepare the rider for the challenges of riding a sportbike. Riders over the age of 25 represent nearly 70 percent of all active duty motorcycle accidents, and a large majority of those accidents occur on sportbikes. I believe most of these POV accidents are a result of bad habits learned while driving in theater. Slow down or you may not make it to your destination. Lastly, that five-star safety rating on your vehicle means nothing if you don't use the safety equipment, so buckle up!
- Communicating effectively is probably one of the least understood leadership skills in our Army. I'm not just talking verbal and nonverbal communications that involve active listening skills and two-way conversations. I'm talking about knowing your Soldiers and the effective use of Information Operations to defeat or neutralize a threat. For example, somewhere there is a group of Soldiers waiting to be released. They'll likely get the traditional "if you drink, don't drive, if you have sex, wear a condom" brief. Yet, in theater, we plan and rehearse a two-click movement for hours. Both have inherent risks and need to be planned for accordingly. Good risk mitigation starts by effectively communicating the how, what, where, when and why of the threat you're about to face. We have made great strides in theater and have effectively transformed to an evolving threat, yet we have seen a steady increase in automobile accidents and fatalities.

Soldiering is a noble profession and each of you can be proud of your service to our great nation. Take the time during this Independence Day to reflect on what you have accomplished. While doing so, continue to prepare and train for the evolving threats that you will face – on and off duty.

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

BEST PRACTICES

RIDING FOR THEIR LIVES

BOB VAN ELSBERG
U.S. Army Combat Readiness/Safety Center
Fort Rucker, Ala.

A gentle breeze ran through the open hangar doors on each end of Fort Rucker's Yano Hall, cooling the motorcycle riders waiting inside.

Occasionally, the deep-throated roar of motorcycle engines filled the building as a pair of riders moved their machines forward toward one of the inspection stations. As others waited, a giant screen on their left played a video provided by the U.S. Army Combat Readiness/Safety Center (USACRC). Chief Warrant Officer 3 Darrin Swan, safety officer for the 1st Battalion, 145th Aviation Regiment, called it "eye candy" — something to keep the riders occupied as they waited their turn. Images danced across the screen as motorcycles tumbled end-over-end, shedding parts and dumping riders like rag dolls onto the road. Like silent movies, the pictures said it all. But, then, that was the purpose for showing the clips — to make it self-evident why thinking before twisting the throttle matters.

Glancing at the long line of motorcycles awaiting quarterly inspection, Swan talked about the problems the battalion experienced in the past. During fiscal 2007, they had one Soldier die and 13 others injured in motorcycle accidents. Those numbers got the attention of Lt. Col. Allan Pepin, who became the 1-145th's commander in June 2007. He'd been given responsibility for the Army's largest battalion — some 2,400 strong. His battalion's turnover was intense each quarter as new students signed in and others graduated. Knowing Soldiers pay attention to those things their commanders take seriously, he created the full-time safety position held by Swan. Pepin understood being an "engaged Leader" didn't mean talking the problem to death; it meant investing the resources to do something about it.

Pepin searched through his companies, looking for a Soldier with a safety background. The mission was too important to be done as an additional duty or by someone trying to learn as they went. In Swan, he found the type of Soldier he was looking for. "He was an instructor — he understood some of the students' off-duty behavioral tendencies," Pepin said. He added Swan could be out there with the students, seeing the things he, as a commander, might not catch.

"Although my safety officer is borrowed military manpower that impacts the company I pulled him from, the return investment to all the units and Soldiers is worth it," Pepin said. "Darrin Swan has made a significant difference because he has a passion and commitment to making positive life and occupational attitude changes in Soldiers' lives."

For Swan, this is a full-time mission. He estimates there may be as many as 500 riders in the battalion. The more than 300 motorcycles parked in the lot waiting to enter Yano Hall was not a new sight to him; he'd seen motorcycles packing the battalion's parking lots. The fact so many were lined up for the safety inspection that afternoon was, for him, encouraging. And he has reason to be encouraged by the downturn in this fiscal year's accident trends. So far, only three battalion riders have had accidents, with the worst injury being a broken wrist. He believes the reduction in accidents signals the battalion's Soldiers are getting the message about exercising better judgment on the road.

> "Whatever **WE CAN DO** as Leaders that **HELPS** keep that right-front pew **FROM BEING FILLED** and emergency rooms empty — **THEN THAT IS SUCCESS.**"

"We're getting the point across about safety," Swan said. "They (the Soldiers) know the chain of command is watching, and we know that they know we are watching and care. The benefit, we think, is that they now actually 'want' to do the right thing."

That "want," he believes, reflects the beginning of a vital cultural change toward safety. Convinced only engaged Leaders can transform the Army into a safer organization, he reflected the thoughts of Brig. Gen. Bill Forrester, director of Army safety and USACRC commanding general, as expressed in his article "What About Your '3 to 6?'" in the March 2008 *Knowledge*.

Pepin believes engaged leadership must trickle down from the battalion's leadership to the Soldiers who train the students. An example of that is Chief Warrant Officer 2 Jason Ayala of Company B, 1-145. In his normal duties, Ayala handles the administration of casual students waiting to attend Survival, Escape, Resistance and Evasion (SERE) training. During the inspection, however, he manned one of the inspection stations, handing checklists to the riders and carefully observing them as they checked each other's bikes. The checklist was based upon the Motorcycle Safety Foundation's (MSF) T-CLOCS example, which calls for the inspection of a motorcycle's tires, controls, lights, oil, chassis and stands. Although motorcycle safety is much different from SERE training, the mission is the same — to enable Soldiers to survive in a potentially hostile environment. And the inspection Ayala was overseeing was no "pencil-whipping" exercise. A "no-go" on the checklist meant the rider parked his bike and walked home or bummed a ride. While that might ruin some rider's evening, the tight standards were there for a reason. The rider who broke his wrist earlier this year did so when his motorcycle blew a tire while traveling on a highway with a posted 65-mph speed limit. At such speeds, riders cannot afford equipment or mechanical failures.

Keeping the Army's aspiring aviators safe is no easy challenge in the environment in which they live and train. Stress is a factor for students, whether they're in warrant officer candidate school or flight training. Beyond that, many may have not yet fully "decompressed" from a recent deployment. A rider himself, Pepin understands riding can do wonders to bleed off stress and put life back in balance. Still, he admits, some Soldiers are tempted to trigger a shot of adrenaline by twisting the throttle at the wrong place and time, potentially leading to heartbreaking results. Having looked into the eyes of grieving Family members at memorial services, he also knows all too well the tragic consequences of an individual's poor judgment or unpreparedness.

"I personally brief every new Soldier that comes into my organization that there is one common theme whenever you go to a memorial — and it's the right-front pew," Pepin said. "That's where the surviving Family members sit and grieve the loss of their Soldier. When you see the Soldier's pictures being displayed at the memorial, it's too late to say to the Family, 'We wish we could have prevented this.' Whatever we can do as Leaders that helps keep that right-front pew from being filled and emergency rooms empty — then that is success. The Leaders at the USACRC, the U.S. Army Aviation Warfighting Center and the 1st Aviation Brigade are focused on preventing those tragedies."

Keeping his Soldiers safe is something Pepin takes personally as a commander. He makes it a goal to speak to each of his Soldiers to highlight the following simple basics of safety consciousness:

- Soldiers are not invincible — statistics and reality prove it every day, but Soldiers are a priceless commodity.
- Age and lack of life experience places most people at a higher risk.
- Buddy teams work both on and off duty.
- Soldiers' Families pay the ultimate price for the unnecessary risks Soldiers take.
- Many Soldiers don't get a second chance to learn from their mistakes; some are killed, while others learn their lessons from the confines of a hospital bed, wheelchair or, maybe, a jail cell.
- Soldiers need to balance fun with common sense and prudence.
- Leaders must remain engaged and Soldiers must use good judgment.
- There is no fun worth killing or seriously injuring yourself or others.

A LITTLE TOUGH LOVE

BOB VAN ELSBERG
U.S. Army Combat Readiness/Safety Center
Fort Rucker, Ala.

Sgt. Maj. Dwight R. Altheide is all-Army right down to the bone. As top enlisted Soldier of the 1st Battalion, 145th Aviation Regiment, at Fort Rucker, Ala., he's also all-rider. Altheide first began riding dirt bikes when he was 8 years old. Now, with nearly 40 years of experience, he still loves the freedom a motorcycle brings. And during his 24 years in the Army, he has seen a lot of improvement in the way safety is emphasized for Soldiers.

"When I first came in, there was no regulation covering the wear of personal protective equipment (PPE)," he said. "You always wore a helmet and eye protection, but there was never any guidance that said you had to wear gloves, long sleeves, long pants, over-the-ankle shoes or a reflective vest. None of that was mandatory then, but now it is — much like seat belt laws."

Altheide didn't get Motorcycle Safety Foundation (MSF) training until 1986. Like many self-taught riders, he'd built up a set of riding habits — some of which weren't necessarily the best. Also, there were some skills which weren't likely to be learned through experience. For example, his MSF training taught him to avoid obstacles through "countersteering" — a technique where riders push their handlebars one way to make their bikes go the other. Although it seems contrary to common sense, Altheide said it works and is much more effective than trying to swerve to miss an object.

Altheide picked up countersteering and other survival skills from his MSF training. He stresses that his Soldiers need to practice and reinforce their MSF survival skills just as they practice their combat skills. He explained, "If you've got a high-stress situation and have to think about what to do, then it's probably going to take too long."

Being a veteran noncommissioned officer (NCO), Altheide knows how to use the Army's version of "tough love" when he encounters a Soldier who thinks riding safety is "optional."

Altheide said, "In my career, I have taken riding privileges away from Soldiers who were not wearing their PPE." He explained he has a simple message for erring Soldiers — "You like to ride? Well, guess what, you don't get to do it for a while. So let's see how you like not riding because you didn't follow the rules and regulations."

Although getting tough with riders to get their compliance may lose him some popularity contests, he loves motorcycle riding and cares about his Soldiers. Echoing the comments of his battalion commander, Lt. Col. Allan Peppin, he wants his Soldiers to ride both safe and smart.

Altheide smiled as he watched the more than 300 motorcycles — both sportbikes and cruisers — wind their way to the inspection stations in Yano Hall. Maybe it's a bit of anticipation? The senior NCO has been riding all-terrain vehicles of late, but he's itching to buy a new bike. After all, riding is in his blood. Just like those of his Soldiers who ride, he knows once you have ridden, the passion never leaves.

"It's the freedom — it's something 'American,'" Altheide said. "It harkens back to the freedom of riding a horse like a cowboy. You're out there in the environment. You're part of what's around you. There is nothing else like it."

BEST PRACTICES SAVES LIVES

CHIEF WARRANT OFFICER 3 MARCELO ASSUMPCAO
U.S. Army Combat Readiness/Safety Center
Fort Rucker, Ala.

Best safety practices give Army units and their Leaders the knowledge and insight needed to mitigate risk, save lives and preserve combat power. What could Army units do with best safety practices? They could certainly target how they do business to improve their overall safety climate in the full spectrum of their operations. Below are a few of the best practices applied by units in the field that have proven effective in strengthening combat power, as well as ensuring the safety of Soldiers.

Commitment to Safety Practices Prevents Accidents

When safety procedures are incorporated into maintenance operations, it reduces the number of injuries and promotes an accident-free environment. Because the maintenance Leaders of the 5th Squadron, 7th Cavalry, 3rd Infantry Division, were engaged, their vehicle maintenance section experienced zero accidents during Operation Iraqi Freedom (OIF). The maintenance officer stated, "We're not doing anything unique or special, just enforcing the rules that have always been here. So far, no one has gotten injured or hurt. The basics we all know about apply here, too, and are enforced every day."

Consistent enforcement of the standards is the key to accident prevention. Here are a few procedures that were enforced in this unit's maintenance facility:

- Proper lifting of heavy objects (using the legs, not the back, and the buddy system)
- Proper storage of oxygen, acetylene and compressed gases
- Use of personal protective equipment such as gloves, goggles, chock blocks, jack stands, etc.
- Removal of watches, rings and other jewelry
- Good housekeeping (keeping areas clean and organized to reduce tripping hazards)
- Removal of all ammunition from vehicles that will be worked on in the motor pool
- Prohibition of horseplay and enforcement of a no-smoking policy in the maintenance area

> "**CONSISTENT** enforcement of the **STANDARDS** is the **KEY** to **ACCIDENT PREVENTION**."

Leader Engagement + Safety Awareness = Lives Saved

A safety-focused organization is destined for success, and that's the reason why the ground maintenance section of the 626th Brigade Support Battalion, 101st Airborne Division, didn't experience a single accident during its recent OIF rotation. The battalion's overwhelming success is attributed to Leader engagement and safety awareness among all Soldiers. A few of the unit's successes include:

- 870 Soldiers deployed and 870 redeployed
- All scheduled and unscheduled maintenance conducted without injuries
- 572,000 accident-free miles (334 combat logistics patrols conducted)
- Survived 12 direct blasts with no casualties
- Found 37 improvised explosive devices and captured nine insurgents

Here are some of the factors that led to this unit's success:

- Leaders were present during pre-combat inspections and pre-combat checks to ensure mission rehearsals were conducted thoroughly.
- Leaders placed high emphasis on driver training, rollover drills and enforcement of a 35-mph maximum tactical speed.
- Leaders spearheaded the concept of developing and installing up-armored equipment in 700 vehicles.
- Leaders promoted an attitude that everyone is a warrior and encouraged Soldiers to take ownership of their environment by applying composite risk management (CRM) concepts.
- Leaders shifted schedules based on conditions and threat analysis.

According to the command sergeant major of this organization, "When units go back and they've utilized this information, that equates to a Soldier not paying for something with his life."

Risk Mitigation Enhances Readiness and Saves Lives

As the Army fields Mine Resistant Ambush Protected (MRAP) vehicles in theater, some unique challenges may arise. Hands and finger injuries continue to be a problem. The key to preventing these types of injuries and ensuring a fleet of MRAP vehicles is always in a high state of readiness is by integrating CRM and being proactive in risk mitigation.

Maintenance Leaders of the 10th Brigade Support Battalion, 10th Mountain Division, have incorporated CRM classes into their MRAP familiarization program. They credit the success they're experiencing in saving lives and reducing injuries to their diligence in constantly reevaluating the hazards and mitigating the risks associated with their new fleet.

Conclusion

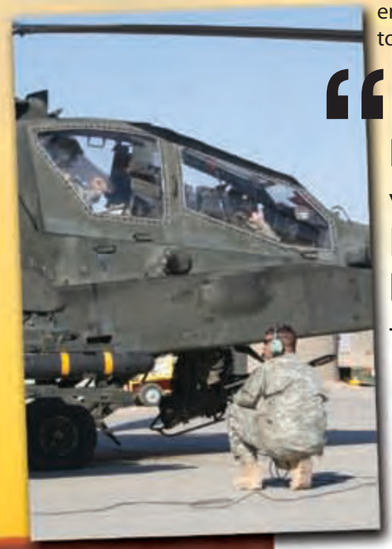
Best practices such as those mentioned above are efficient and effective, allowing units to achieve a desired outcome with fewer complications. Incorporating best practices into a unit's operations will help keep our Soldiers Army Safe and Army Strong! «

BEST PRACTICES GAINING GROUND IN GROUND SUPPORT OPERATIONS

LT. COL. ANDREW D. DOEHRING
7th Squadron, 6th Cavalry Regiment
Conroe, Texas

Those of us within the Army aviation community believe we are pretty good at composite risk management and mitigating risk factors to accomplish missions. After all, we are taught to fill out a risk assessment worksheet from day one and have multiple mechanisms in place to ensure we check and double-check every aspect of conducting flight operations.

One of the first things I did upon assuming command of the 7th Squadron, 6th Cavalry Regiment, was to sit down with my squadron safety officer and conduct an assessment on all facets of unit safety. As anticipated, the aviation side of the house was in proper order and only required a little tweaking to accomplish my safety vision and philosophy. As we began to examine the ground support side of our operations, I discovered a discrepancy in the level of emphasis that I needed to focus on immediately.



> "If you take **EIGHT SOLDIERS** and a **NONCOMMISSIONED OFFICER** who have **NEVER WORKED** together, how do you get them on the **SAME LEVEL** of **UNDERSTANDING** for the **OPERATION?**"

As I began to compare the aviation and ground operation safety programs, I discovered the biggest difference was the lack of tools and guides available to the Soldiers not directly involved with aircraft operations. As pilots, we have risk assessment worksheets, a local area flying guide/rules, aircraft Dash 10 checklists, crew mission briefs, passenger briefs, air mission commander briefs, performance planning cards and much more. Aviation is an inherently dangerous business, so we have all these tools in place to help mitigate the risk factors. Once again, we do it well since it is embedded in our aviation culture. When I looked into the tools and guides available to our unit ground support personnel, I only found a few. These included the risk management worksheet for ground vehicle operation, unit ground/tactical standing operating procedures (GSOP/TACSOP), Dash 10 operator's manuals and, when required, a convoy brief. To a young private, these resources pale in comparison to the resources available to the aviator.

I decided I needed to develop something applicable, understandable and functional to cover the majority of what we do during ground support operations. We ended up developing the 7/6 Cav Daily Operations Brief. I modeled this document after the crew mission brief used before every flight. The objective of this new document was to capture as many of the critical areas a Soldier should be aware of before executing any mission, from motor maintenance to aircraft refueling. It had to be easy to understand and relevant to the mission or task at hand. The final product was agreed upon by my Leaders and safety personnel and implemented before our departure for annual training in August 2006.

We divided the daily operations brief into four primary categories of emphasis, each with varying numbers of subareas. The four categories are pre-mission/combat checks, normal operations, troop (Soldier) coordination and emergency procedures. The focus was to get our Soldiers into the habit of using this tool before any given operation, no matter how large or small. Throughout the development process, we kept coming back to the same question. If you take eight Soldiers and a noncommissioned officer who have never worked together, how do you get them on the same level of understanding for the operation? This overarching question led us to the subareas that are included within the brief.

After nearly two years of use, I know it has helped our Soldiers develop a smarter and safer operational environment. We print it as a laminated, pocket-size card (3 inches by 3.5 inches), making it easy to carry and accessible. I issue one to every new Soldier during the quarterly newcomer's in-brief and then again to everyone before any major training event like annual training, gunnery and field exercises, etc. It has been a very useful tool for my unit and has helped place a little more emphasis on our ground support personnel when it comes to safe operations. Our safety motto is "Be Safe Today." I truly believe we are doing that.

7/6 Cav Daily Operations Brief (15 May 2007)

■Pre-Mission/Combat Checks
1. Logbook review, PMCS complete, deficiencies noted.
2. Equipment requirements (vehicles, commo, weapons, etc.)
3. Personal protective equipment (PPE) to include uniform.
4. Fighter management log, update/review current status.

■Normal Operations
1. Describe mission.
2. Route (SP, RP, CPs)
3. Duration, expected time of completion.
4. Support available.
5. Weather.
6. Leader, group, individual responsibilities.
7. Communication: Positive, two-way verbal or visual indication of understanding.
8. Hazards.
9. (N/NVG) Use of supplemental lighting.

■Troop Coordination
1. Work responsibilities.
2. Two challenge rule for all safety-related issues.
3. Cease operations authority.

■Emergency Procedures
1. Actions of troops.
2. Fire – immediate action steps.
3. Rally point and head count.
4. Emergency/survival equipment.

BE SAFE TODAY!

BEST PRACTICES SAFETY DONE RIGHT

1ST LT. MICAH JACOBSON
2nd Battalion, 77th Field Artillery Regiment
Fort Hood, Texas

With safety-related accidents continuing to cause numerous casualties and loss of readiness across the Army, the techniques of the Steel Warriors, 2nd Battalion, 77th Field Artillery (FA) Regiment of the 4th Brigade Combat Team, 4th Infantry Division (4ID), at Fort Hood, Texas, are worth sharing with every unit. The 2-77 FA created a system of safety standards and procedures which helped keep safety-related accidents to a minimum both in garrison and at the National Training Center (NTC). Hopefully, these same procedures will help them achieve similar results during their deployment in support of Operation Iraqi Freedom.

The policies created by the 2-77 FA helped the battalion receive the 4ID Safety Streamer. The 4ID awards the Safety Streamer, one of the hardest honors to earn in the division, to units that successfully complete a quarter without experiencing a safety-related incident. This includes everything from on-post vehicle accidents or traffic tickets to more serious incidents such as driving under the influence arrests and personnel injuries. The 2-77 FA is the first unit to receive the award since its inception. The policies followed in garrison paid dividends during the battalion's recent rotation at the NTC, as the Soldiers maintained a safety mindset and had very few safety incidents.

Backbone of Safety

The backbone of the program is the battalion's in-processing standards, which set the tone for safety. On their day of arrival at the 2-77 FA, Soldiers receive counseling from the battery/company commander and first sergeant regarding the safety standards in the battalion and the expectations for that Soldier. The Soldier also signs an "I know" contract, which basically states the Soldier knows and understands the policies of the battalion.

From the very beginning, every Soldier in the battalion – including commanders – is assigned a battle buddy by the chain of command. Battle buddies are held accountable for each other's actions and must have a contact number and know the plans of one another before every weekend. They must also update each other if their plans change. The battle buddy system is a simple way to ensure Soldiers are accountable to at least one other person throughout the weekend and that they have someone to turn to should they find themselves in trouble.

To reinforce expectations for each Soldier in the battalion, the 2-77 FA also conducts a safety training event each quarter for every new Soldier, as well as Soldiers involved in any safety-related incidents during the previous quarter. Known as the Steel Warrior University, the event is a day-long class which covers numerous safety topics from privately owned vehicle (POV) and privately owned motorcycle (POM) safety to alcohol and drug abuse.

Incentives

The Steel Warriors use several motivational techniques to reinforce the in-processing standards and create an atmosphere of excitement concerning safety. Battalion standard safety awards consist of a safety day off for those batteries/companies that don't have any significant incidents within a fiscal quarter. Units that have no significant incidents during a calendar month can receive a safety half-day off or a day off from physical training.

In addition to unit

awards, the 2-77 FA employs motivational icons. For example, we have a large piece of asphalt named "Reality Road," which every motorcyclist must sign their name next to, indicating they understand the higher risks of riding a motorcycle. Reality Road is just one way of implanting a visual icon within the minds of Soldiers and helps bring the consequences of a motorcycle crash into perspective.

Another influential technique is "PFC Gleep," a heavy weight that goes with the battalion on every run. The burden of carrying PFC Gleep is insignificant compared to the burden carried by Leaders who fail to adequately train, coach and mentor their subordinates, resulting in the loss of a Soldier. The weight passes from Leader to Leader as the battalion runs, reminding them of the heavy responsibility of leadership. The 2-77 FA hands out a PFC Gleep award to the top sergeant first class or above who demonstrates leadership that exceeds the standard in preparing a Soldier for combat.

The 2-77 FA also constantly looks for new ideas that might help decrease the number of safety-related incidents. One example is the tattoo challenge. The battalion commander spoke to the battalion a couple weeks before block leave and offered to buy a tattoo for every Soldier who wanted one if the entire battalion made it through leave without a single incident. The battalion came very close, but had a small incident a few days before the end of leave.

Composite Risk Management

An important part of the safety program is the emphasis placed on the composite risk management (CRM) process. The battalion produces a weekly risk assessment covering the general risks the battalion most likely will encounter. The safety officer briefs the assessment at the weekly training meeting and posts it at the staff duty desk. The batteries/companies then produce a more specific weekly risk assessment for their activities, which they brief and post.

In addition to the weekly risk assessments, the 2-77 FA has a vehicle risk assessment, which each truck commander (TC) completes before a vehicle movement. The TC then updates the risk assessment as conditions change. The initial risk assessment for the vehicle movement is part of the dispatch process.

For any training event which requires vehicle movement or the firing of rounds, the officer in charge (OIC) of the event produces a risk assessment specific to the types of hazards associated with the event. The OIC briefs the risk assessment to the battery/company commander and battalion commander before the event and then to all participants on the day of the event.

> "**HOPEFULLY**, these same **PROCEDURES** will help them **ACHIEVE SIMILAR RESULTS** during their **DEPLOYMENT** in support of Operation Iraqi Freedom."

The Steel Warriors produced a tactical risk assessment worksheet that lists the everyday risks at the platoon level associated with combat missions, such as weather and vehicle breakdowns. On the back page, the worksheet is blank to allow the platoon leader to fill in mission-specific risks. The worksheet allows the platoon leader to develop a very comprehensive risk assessment in significantly less time.

To further mitigate risks, Soldiers going on leave or pass and traveling via POV must complete the U.S. Army Combat Readiness/Safety Center's online risk assessment tool known as the Travel Risk Planning System (TRiPS). The TRiPS assessment must then be signed by the Soldier's commanding officer or supervisor and added to the Soldier's leave or pass packet.

Safety Engagements

Another small, but important, part of the Steel Warrior safety program is safety classes. Many of these classes are online courses such as the Composite Risk Management (Basic) Course, which all Soldiers must complete; the Additional Duty Safety Course for all noncommissioned officers (NCOs); the Commander's Safety Course for all master sergeants, first sergeants and commanders; and the Army Accident Avoidance Course for all personnel with an Army driver's license. Also, any Soldiers in the battalion under the age of 26 must complete the Army Traffic Safety Training Program, which is a four-hour course located on Fort Hood.

Before every long weekend, the battalion commander conducts a safety briefing for all Soldiers in the battalion. Before regular weekends, the battery/company commander conducts a safety briefing. The batteries/companies must have accountability for their personnel at the safety briefing. However, these are more safety engagements than safety briefings. Instead of the leadership simply talking to Soldiers about risks, they engage the Soldiers in a discussion about the risks related to their planned weekend activities.

Inspections

All Soldiers in the Steel Warrior battalion are required to complete a POV or POM inspection before any long weekend as part of their leave or pass packet. All new Soldiers to the unit complete a POV inspection within 30 days of arrival and within 30 days of purchasing a new or used vehicle.

Leadership Involvement

As evident in the various policies of the 2-77 FA battalion, leadership involvement is a key factor for much of the safety program. Leadership at the lowest level is important. The junior Leaders are the ones who enforce the standard and keep track of the Soldiers in the battalion, ensuring they're participating in the safety events and completing the safety requirements. If not for the junior Leaders who take ownership of the plan and make every effort to ensure its success, the Steel Warriors would have nothing but a plan that just looks good on paper. Instead, they have a dynamic, interactive program that keeps safety at the forefront of the battalion's mindset.

Senior Leaders must also demonstrate safety is their priority and constantly reinforce it every time they address Soldiers. Without strong support from the senior leadership, the junior NCOs and officers have nothing to stand on. Constant reinforcement and junior leadership are the keys to keeping a successful safety program Army Safe and Army Strong. «

Best Practices
The Art of Mitigating Aviation Risk

Task Force Pegasus, 82nd Combat Aviation Brigade (CAB), executed more than 80,000 combat flight hours facing the most unforgiving terrain, weather and threats in Afghanistan. It is undoubtedly the most challenging and dangerous flight environment in the world.

COL. KELLY THOMAS AND MAJ. CHRIS DOWNEY
82nd Combat Aviation Brigade
Fort Bragg, N.C.

Maj. Gen. David M. Rodriguez, commander of Combined Joint Task Force-82 (CJTF-82) in Afghanistan, always reminded his aviation formation that we are always one inch or one second away from a potentially catastrophic accident. Our safety record was not flawless, but we inherited and developed some outstanding tactics, techniques and procedures that assisted us in amplifying the five-step composite risk management (CRM) process during the execution of multifunctional combat missions during Operation Enduring Freedom.

The recent changes in Army Regulation 95-1, *Flight Regulations*, and Training Circular 1-210, *Aircrew Training Program Commander's Guide to Individual, Crew and Collective Training*, were positive initiatives to define the application of the CRM process to aviation. The science of the Army's CRM system is well known and effective in preventing accidents. The challenge aviation Leaders face is to successfully apply the art of this process. Identifying hazards, developing controls and making risk decisions is extremely challenging in a high operations tempo mission set in an extreme operational environment with insurgent activity. What I'm offering in this article are some of the lessons and systems learned from the 10th CAB and others during our tour of duty. I'm highlighting the key focus areas to assist commanders and Leaders at all levels in applying the esoteric art of risk mitigation to full-spectrum combat aviation operations. Many of these focus areas are well known and second nature to aviation Leaders.

Establish a Positive Aviation Command Climate

Establish the cultural norms of acceptable behavior so every pilot and crew chief does what is right when green-tab Leaders are not watching, simply because it is the right thing to do. Carefully balance the application of the Central Command waiver to ensure aviation standards remain as high as possible. Ensure every aviator knows when conditions change and risks outweigh the mission's necessity; it is then OK to postpone the mission, and the chain of command will endorse that decision. I stayed as close to the flight line and flew as often as possible. I was very deliberate and firm with how I dealt with infractions to standards. We increased our frequency of safety and standards council meetings to bimonthly. Additionally, I gladly welcomed the U.S. Army Combat Readiness/Safety Center, Directorate of Evaluation and Standardization and Aviation Shoot Down Assessment Team for assistance when required.

Set Cockpit Conditions

Our talented, fast-tracking junior aviators can easily become fixated on mission execution and forget to fly the aircraft. I stressed the following priorities for all aviators during mission execution:

- Fly the aircraft safely.
- Avoid enemy fire.
- Accomplish the mission.

The last line of defense to prevent an accident during the execution of missions is the pilot on the controls. Set the conditions for aviators to assess conditions, make decisions

and make control inputs. Creating positive habits throughout the formation will ensure the proper actions are taken at the tip of the spear. Ensure the commander's intent is understood and certain decision authority is clearly delegated. Reading file communications and air mission commander/pilot in command certification programs are all part of the process to ensure crews have the skills and knowledge to be successful. We treated all training flights as combat flights and replaced the term "local area orientation" with "combat crew training" to ensure crew preparation was the same for every mission.

Let Aviators Make Aviation Decisions

During the mission planning process, there are many decisions that will affect the overall risk of the mission. Decisions such as planning and rehearsal time, helicopter landing zone (HLZ) selection, route planning, crew selection and fighter management should be made by aviation Leaders. Friction with the executing ground element can result if a proper collaborative relationship is not maintained. Work with brigade aviation and ground elements to maintain a positive working relationship based on mutual respect and trust. Constant communication and education will assist the ground elements in understanding and planning missions that are well within the capabilities and limitations of our multifunctional aviation task forces.

Select Crews Deliberately

We executed a few missions with only the most senior and experienced aviators. I reviewed every mission concept and crew selection in our daily concept of operations (CONOP) brief to ensure missions were properly planned and resourced. We used a color-coded system to look at the experience level in the cockpits (see the aircrew selection slide on the *Knowledge* Web site under Online Exclusives). It's important to remember that a higher number of flight hours does not always directly equate to experience. My senior brigade warrant officers assisted me in this process. Some might think this is micromanaging the battalion commanders, but the CONOP served as a final check for all conditions before mission execution and ensured I understood the following day's mission set. I was committed to the Families of my Soldiers and, if something unfortunate happened, I made sure I could tell them I had done everything in my power to ensure all measures were taken for safe execution.

Train for the Tough Missions

We avoided certain flight profiles simply because the risk was extremely high. Some of these tough missions were flight in zero-percent illumination, hoist missions at altitude, dust landings under nonstandard conditions and fast rope insertion/extraction system (FRIES). However, sometimes we didn't have a choice because lives were at stake during a troops-in-contact or medical evacuation mission. It was important for us to train to the most challenging mission sets even in the flight profiles we tried to avoid. You don't want your aviators experiencing these conditions for the first time when lives are at risk.

Risk Mitigation Never Stops and Should Be Working at Every Level

This focus area is understood by all Army Leaders, but cannot be overemphasized. It's never too late to make a change to a condition or decision, and every Soldier has a voice in risk decisions. We made some crew changes at the last minute during some extremely dangerous short-notice missions. Moreover, we failed in high-risk missions when we didn't aggressively make informed and deliberate crew decisions.

Insist on Critical Aviation Enablers as "Go/No-Go" Criteria

Our motto was, "We don't own terrain – so what?" It was important to us to ensure every measure was taken to reduce the aviation risk. Every mission carefully considered the application of enablers like suppression of enemy air defenses, close air support (CAS), fires, full-motion video and signals intelligence. We often required some of these assets to be resourced before the missions were executed. Even some of our resupply missions required CAS coverage. Never pay lip service to an alternate HLZ selection; if the enabler doesn't deliver pre-assault fires — your alternate is now your primary HLZ.

Ensure Risk Decisions are Made at the Right Level

Risk mitigation is best done at the lowest levels where crew actions occur; however, this doesn't mean all risk decisions should be made at the lowest level. The risk approval levels in Afghanistan were above what is normally seen in Army aviation. For the first and last 90 days of the rotation, when inexperience and complacency are most apparent, we raised the approval levels up one level. This meant that during those periods, battalion commanders could only approve low-risk missions. Furthermore, the CJTF-82 commander, with my recommendation, maintained the high- and extremely high-risk approval level for the entire tour. On these missions, he was the only one to decide when the mission necessity warranted the execution of a high-risk mission. Throughout the years, the Afghanistan Aviation Procedures Guide has been developed by all rotating aviation brigades to include a chart with automatic risk levels for certain aviation missions and conditions (see the APG Risk Matrix on the *Knowledge* Web site under Online Exclusives).

TF Pegasus
High-Risk Decision Matrix

DTG: 231630ZOCT07	TF: TF Talon	CG GO	CG NO-GO
MISSION:	3xUSMil, 2xUrg, 1xUrg-S 1xGSW-Arm, 2xGSW-Abd		
REMARKS:			
A/C PACKAGE	1		1
MSN NECESSITY	X	TROOPS IN DNGR	ENEMY TGT	NOT TIME SENSITIVE	
MEDICAL NECESSITY	X	URGENT	PRIORITY	ROUTINE	
WX (D) CEILING & VIS		>700/2	>500/1	<500/1	
WX (N) CEILING & VIS	X	>1,000/3	>700/2	<700/2	PRED: 2,000-3 WORST: 1,000-2
ILLUM & ANGLE	X	>79%, >30	40-78%, <30	39-25%, >Hor	<25%, Below Hor	ILLUM: 18% MOON ANGLE: 10%
ENEMY THREAT	X	LOW	MODERATE	HIGH	
CREW RISK VALUE	X	LOW	MODERATE	HIGH	EXTRA HIGH	
MSN PLANNING TIME	X	OPTIMUM = >6 Hrs.	ADEQUATE = 3-6 Hrs.	MINUMUM < 3 Hrs.	JAF-BLE-ABAD-JAF
FLIGHT ROUTE	X	GOOD	MARGINAL	DIFFICULT	
EOF (AH, HH)	X	GOOD	MARGINAL	POOR	
OTHER CONSIDERATIONS	Crews >100 hrs. in area (e.g., Single-ship Opns, No AH escort, UH >8,500 feet, CH>10,000 feet, etc.)				
BN CDR RECOMMENDATION:	X	Recommend Approval			
P6 RECOMMENDATION:	X	Recommend Approval, WX no less than 1 statute mile			

Minimize Risk-Approval Time for Short-Notice Missions

When lives are at risk, it's important to ensure the risk approval is granted in a timely manner without cutting corners. We developed a communication tool (see the High-Risk Decision Matrix to the left). to capture the risk and mission variables to quickly communicate either with the commanding general, deputy commanding general or brigade commander. This greatly accelerated the process without compromising risk mitigation.

The art of applying the five-step CRM process is a challenge for all aviation Leaders. It's especially hard in the tough combat aviation environment in Afghanistan. None of these concepts are new, but I hope they will assist aviation commanders at all levels in setting conditions for success.

All the way!

–Col. Kelly Thomas is the former commander of the 82nd CAB and Maj. Chris Downey is the former operations officer.

Burnin' Up the Track

MAJ. MIKE CUNNINGHAM
Fort Monroe, Va.

It was July 7, 2007, and I was sitting in a classroom at a road racing track in West Virginia. Just the date – "triple sevens" – had to be a good sign, right? I was there with other sportbike riders, sitting in on a Track Day safety briefing sponsored by the Northeast Sportbike Association (NESBA).

The goal of this non-profit, volunteer-run association is to get sportbike riders onto the tracks. There, riders can experience the performance of their machines without risking the speeding citations, dangers and increased insurance fees of illegally racing on the streets. Also, compared to the street, the track is a safe, controlled environment. No cross traffic. No intersections. No kids or animals rushing into the street from sidewalks – just smooth ribbons of asphalt designed to allow riders to achieve maximum velocity.

During the safety brief, we were informed of the track rules – the things we could do and the things that would get us kicked off the track for the day. We went over the basics, such as how to brake on the track, which differs from braking on the street. On the track, we were told to only use the front brakes. It took me some time to get used to that because I'd been taught in the Motorcycle Safety Foundation's (MSF) Basic *RiderCourse*[SM] (BRC) and Experienced *RiderCourse*[SM] (ERC) to use the front and rear brakes simultaneously. That training had saved my hide plenty of times on the street, but this was not the street. When racing on the track at more than 100 mph, using the rear brake can send you into a skid, which is definitely not good. We also went over the different colored flags waved by the flag men on the track, carefully learning what each flag meant.

After the 40-minute brief, we took our bikes for safety inspections and had our personal protective equipment (PPE) checked. If you don't attend the briefing and pass your motorcycle and PPE inspections, the association's trainers will not let you on the track. Safety is the name of the game and was stressed throughout the day.

Part of the inspection included eliminating distractions by taping over the motorcycle's lights and either turning down or taping over rearview mirrors. As riders, we were told we were responsible for what was going on in front of us – not what was behind. At the speeds we were going, we didn't have time to look back anyway.

When riders participate in a NESBA-sponsored track day, they're placed in groups based on their skill level. There are four levels – Intro, Beginner, Intermediate and Advanced. Riders new to the track should sign up for the Intro level. Once Intro-level riders have registered online, attended the safety briefing and passed the inspections, they are allowed two free 15- to 20-minute sessions on the track. Last year, I took NESBA's offer for a free track day and have since joined the association.

On the track, each rider group was led by control riders (CR) wearing orange shirts so they could be easily identified. They led us through the first two laps, during which we were not allowed to pass them. On the third lap, we were allowed to open up our bikes and pass anyone we could, which we did mainly on the straights. My first session really humbled me. Watching professionals going fast on the track on TV doesn't look all that hard. However, it's a lot different when *you're* on the track, trying to focus on what's happening around you as you're about to enter a turn at the "speed of heat!" There's no hot-dogging – no wheelies like you see in the movies. Even at the Intro level, this was racing and nobody wanted to come in last.

The second session was my favorite. The first session had given me a chance to get used to my bike and the track. Now, I was ready to be more competitive and actually passed a few bikes on the straights. After each session, the CR gave me a one-on-one evaluation of how I did. He told me I did pretty well and suggested I could go a lot faster in the curves if I got out of my seat and leaned into the curve with my knee just above the track. When I did that, I gained a whole new appreciation for my PPE.

My time on the track was awesome – I loved every minute of it! What made it even better was that it was free. If you have a sportbike and want to get on some of the best tracks in the country to see what you and your machine are capable of, log onto NESBA's Web site at www.nesba.com. I guarantee you'll be glad you did. «

Editor's note: This is an update to the October 2007 Knowledge *article on ACT-E. Changes are being implemented to improve communication and ACT-E training.*

ACT-E CHANGES

CHIEF WARRANT OFFICER 4 DERRICK TEVEBAUGH
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Aircrew Coordination Training – Enhanced (ACT-E) is an instructor-led course that uses multimedia in a vignette-based presentation. This form of instruction allows instructors to facilitate free and open discussions, enabling aviators and crewmembers to operate more safely and effectively.

How is ACT-E Administered?

ACT-E courseware is not intended for use as a stand-alone presentation for students to "click through" to fulfill a training requirement. Instead, ACT-E is a Web-based program led by certified instructors who have completed the ACT-E train the trainer (TTT) course for annual sustainment training. Authorized ACT-E instructors are able to access the program's courseware through the U.S. Army Blackboard server at https://learn.army.mil. Upon completion of the program, the training is documented in the student's individual aircrew training folder in accordance with Training Circular (TC) 1-210, *Aircrew Training Program Commander's Guide to Individual, Crew, and Collective Training*.

Accessing the Sustainment Lessons

Instructions for accessing the ACT-E courseware can be found at https://training.rucker.army.mil. By using your Army Knowledge Online (AKO) login and password, the Army aviation training home page welcome screen will appear. Using the aircrew coordination enhanced link at the bottom of the page will take you to instructions for registering and accessing the training support materials. Access to these training materials is controlled due to the sensitive nature of some scenarios; therefore, brigade commanders, or their designated representatives, must identify and submit the names and other data for their approved ACT-E instructors.

Questions from the Field

Q: How do I train all the aviators I have and not exceed the yearly requirement?

A: Quarterly ACT-E training is the best solution to ensuring all aviators and crewmembers receive their annual sustainment training. Aligning this training with annual proficiency and readiness tests will afford unit trainers more flexibility in administering the program.

Q: My unit needs more trainers.

A: Currently, the only courseware available to qualify trainers is the exportable ACT-E TTT training support package (TSP) software (ACT-E course material CD and ACT-E stand-alone compressed files), which is available on AKO via the Directorate of Evaluation and Standardization (DES) Web portal. This software can be downloaded and used by TTT-authorized individuals to qualify unit trainers to lead annual sustainment training. *Note: This software will be superseded in the near future by new courseware on the U.S. Army Blackboard Web site. The effective date will be announced on the Army Aviation Training home page, allowing trainers using the old software enough time to conclude their training.*

Q: How do I deal with aviators who do not have their initial aircrew coordination training or ACT-E training annotated in their closeouts or training folder?

A: In this situation, ACT-E instructors must use the exportable ACT-E TTT TSP software via AKO and the DES Web portal to initially qualify the aviator before using the sustainment courseware.

Q: I'm in a combat theater and I'm having problems logging onto the Blackboard server or do not have the bandwidth to support the video used in the courseware.

A: Brigade commanders or their designated representatives should contact the ACT-E program of instruction (POI) manager via e-mail for assistance in obtaining training materials at ruck.ACTE@conus.army.mil.

The Future of ACT-E

The current method of presentation will change from a narrated presentation with predetermined discussion points to PowerPoint-based courseware that affords instructors the ability to move from slide to slide at a pace in line with group discussion. Appendix A of the revised edition of TC 1-210, which is due out at the beginning of 2009, will clarify and consolidate previous directives concerning ACT-E. With the maturing of Unmanned Aircraft Systems (UAS) operations, the importance of ACT-E training is readily apparent. The revised TC 1-210 will address and clarify UAS ACT-E training by giving guidance on how UAS operators will be incorporated into the ACT-E training process.

As the proponent for ACT-E, the Directorate of Training and Doctrine welcomes any input or observations of trends from the field that will help keep the courseware relevant and meet the needs of commanders and the aviators they lead. For more information, contact the ACT-E POI manager at ruck.ACTE@conus.army.mil or DSN 558-1540, COM (334) 255-1540.

2008 ALSE USERS CONFERENCE SCHEDULED

The 2008 Army Aviation Life Support Equipment (ALSE) Users Conference is scheduled Aug. 26-28 at the Von Braun Civic Center in Huntsville, Ala.

The latest updates in Army ALSE will be presented during morning briefings each day during the conference. During the afternoons, workshops will be conducted on important topics such as arms inspections, ALSE supply, night vision goggle updates, overwater packing and inspection, federal logistics training, oxygen systems and other essential ALSE training.

About 40 suppliers of cutting-edge ALSE technology will exhibit at this year's conference. The knowledge, expertise and solutions these exhibitors bring to the conference are a valuable resource for all ALSE personnel.

Government room rates are available for a reserved block of 50 rooms each at the Embassy Suites and Holiday Inn Select, both of which are adjacent to the civic center. The Embassy phone number is (256) 539-7373. When making reservations, use code "ALE" for the government rate. The Holiday Inn Select phone number is (256) 533-1400. When calling, use code "GAL" to make a reservation at the government rate. There is no conference fee. For more information or to register for the conference, contact Lee Suggs at (256) 955-8167 or william.suggs@peoavn.army.mil.

How to Boil a Ford

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Take an old used car and drive it month after month using the maintenance philosophy, "If it ain't broke, don't fix it." Add a strong dose of neglect by failing to check and replace components, such as radiator hoses, that were never intended to last the life of the vehicle. Simmer these ingredients under your hood during a hot summer day. When the steam rises, serve one boiled engine.

My German-made Ford Taunus was a typical "GI clunker." The 9-year-old car was all I could afford as a newly married specialist stationed in Schweinfurt, Germany. However, the car did have its good points. Its battleship gray paint sometimes fooled the gate guards into thinking it was an official vehicle and they would begin to salute — that is, until they saw my rank. Still, temporarily confusing the guards gave me a certain amount of satisfaction as I drove the old Ford.

What was less satisfying was realizing my car needed repairs I couldn't afford. I was fortunate during the first year I owned it that nothing broke so badly that I couldn't jerry-rig it and keep going. However, that was all about to change.

One Saturday morning, as I was stopped at a light in Schweinfurt, it looked like a steam cleaner exploded beneath my hood. White clouds boiled out of the engine compartment and even billowed out the wheel wells. I ran the short mental checklist I'd acquired as a "shade-tree" mechanic. It couldn't be a fire because the smoke wasn't black. It wasn't an exhaust leak; otherwise, I'd sound like a deuce-and-a-half. That led me to option three — a coolant leak — an observation reinforced by the temperature gauge needle rapidly climbing into the red.

I turned off the ignition and, with the help of another motorist, pushed my car into a parking lot. After waiting for a few minutes, I released the latch, lifted the hood and quickly stepped back. Two things were immediately obvious — at least one of my radiator hoses had ruptured and, given the lack of proper maintenance, it is possible to boil a Ford.

> "White **CLOUDS BOILED** out of the **ENGINE** compartment and even **BILLOWED OUT** the **WHEEL WELLS**."

This was not the kind of breakdown where I could jerry-rig a repair and limp home. Instead, I would need to replace the radiator and heater hoses and fill the cooling system with the proper mixture of antifreeze and water. At least I was in town and knew where to get the parts I needed. Had this happened on the autobahn or during a long trip, I could have been stranded and faced with much higher repair costs.

To keep you from repeating my experience, here are some tips from the National Safety Council and from professional auto mechanics I have known.

- **Check your coolant level regularly.** On most vehicles, you can do this by checking the fluid level in the coolant recovery tank, which is normally located next to your radiator. It's important to check this often because a small leak can go unnoticed. It's also possible to have a slow leak without having a telltale puddle under your car. Some leaks only occur when the engine is running and circulating water through the coolant system. It's possible for coolant leaking from a radiator or heater hose to dribble back along the engine and evaporate before falling to the ground.
- **Inspect your radiator hoses often.** Check for cracks or bulges and squeeze the hose for firmness. A good hose will feel similar to a garden hose. Signs of a bad hose include either a spongy or hard feeling. A worn-out hose will often make a crackling sound when squeezed.
- **Check the radiator and heater hose clamps.** If they're rusty, replace them.
- **Inspect the radiator fan belt, if your car has one, and the water pump drive belt**. Check the belts for cracks, fraying and proper tension. The basic rules of thumb state you should only be able to move the belt up and down about an inch. Also, you should only be able to twist the belt sideways 90 degrees or less, and the belt(s) should not squeal when the engine is turned on. A loose or broken belt means coolant won't be pumped to your engine or your fan won't draw air through the radiator.
- **Flush and change your radiator coolant**. Use the mileage intervals listed in your vehicle's scheduled maintenance manual. Use coolants that have corrosion inhibitors to prevent rust, aluminum phosphate and other deposit buildups.

Now You're Cookin'

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As we learned from the story "No Burnt Offerings" in the June 2008 *Knowledge*, there's a lot more to a successful cookout than just throwing meat on a hot grill. And while good grilling protocol is always important when you're standing before the flames, so, too, is following the proper food safety guidelines. Nothing will ruin your cookout more than a good, old-fashion case of food poisoning.

While the summer weather is great for barbecues and picnics, it can also be an ideal environment for pathogens and bacteria to grow and multiply. However, by following five simple guidelines, you can help keep your food, friends and Family safe from food-borne illnesses.

Keep food out of the temperature danger zone. Most pathogens grow in temperatures between 40 and 140 F. Placing a thermometer inside your refrigerator is a good way to ensure the proper holding temperature of your food. A good rule of thumb is to keep cold foods cold and hot foods hot, and don't let food sit out more than two hours at room temperature.

Thoroughly cook all foods. Cooking foods to a safe internal temperature will kill most pathogens. It's a good idea to use a food thermometer to ensure the food reaches that proper temperature because looks can be deceiving.

Avoid cross-contaminating foods. Bacteria can spread through cross-contamination. When handling raw meat, poultry, seafood and eggs, keep these foods and their juices away from ready-to-eat foods. Always start with a clean preparation area and wash hands, cutting boards, dishes, countertops and utensils with hot soapy water. In addition, never place cooked food on a plate that previously held raw meat, poultry, seafood or eggs.

Practice good personal hygiene to prevent the spread of food-borne illnesses. Hands should be washed before and after handling food. Use warm water with soap for at least 20 seconds and then dry the hands with disposable towels. Other good food preparation practices include wearing clean clothes, using hair restraints and removing jewelry.

Refrigerate leftovers immediately. Refrigerating foods quickly will slow the growth of harmful bacteria. However, do not overstuff the refrigerator. The cold air must circulate to help keep food safe. When you're ready for the leftovers, make sure all soups, sauces and gravies are reheated to a boil. Other leftovers should be warmed to 165 F.

Remember, food safety is a proactive measure. When in doubt, call your local U.S. Army food inspector. Food inspectors are part of the Veterinary Corps and are located at almost all Department of Defense installations. For more information about the U.S. Army Veterinary Services or food safety, visit www.veterinaryservice.army.mil and look for the food safety links.

Follow the guidelines below to ensure your food has reached an optimal internal temperature:

- **Beef, veal and lamb steaks and roasts – 145 F for medium rare, 160 F for medium and 170 F for well-done**
- **Ground pork and ground beef – 160 F**
- **Poultry – At least 165 F**
- **Fin fish – 145 F or until the flesh is opaque and separates easily with a fork**
- **Shrimp, lobster and crabs – Meat should be pearly and opaque.**
- **Clams, oysters and mussels – Until the shells are open**

FISCAL 2007: AN UPDATE

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Editor's note: The following article is a review of Army accidents for fiscal 2007. This article reflects accident reports that were not available for the end-of-year stories published in the January 2008 issue of Knowledge.

Aviation

The chart to the right provides a comparison of fiscal 2007 and 2006 aviation Class A through C accident rates (accidents per 100,000 hours flown):

- Class A through C accident rates increased for the top four modernized aircraft series during fiscal 2007.
- The AH-64-series aircraft had the highest increase in Class A through C accident rates.

ACCIDENT RATES

Per 100,000 Flying Hours

	CLASS A		CLASS B		CLASS C	
ACFT SERIES	FY06	FY07	FY06	FY07	FY06	FY07
AH-64A/D	2.62	4.99	0.52	1.87	4.20	4.99
C/MH-47	2.73	4.58	0.91	0.00	8.19	10.30
OH-58D	1.47	2.46	0.00	0.00	0.98	11.70
U/MH-60 A/L	1.68	1.98	1.44	0.85	4.09	6.80

as of April 3, 2008

The following shows the percentage of change between fiscal 2007 and 2006 aviation Class A through C accidents:

- Excepting the H-60 series, the other top four modernized aircraft showed a significant increase in accidents.
- The AH-64-series aircraft had the largest increase (60 percent) of Class A accidents compared to fiscal 2006.
- Unmanned aircraft systems experienced a 25-percent increase in Class A accidents.
- All other aircraft experienced a 300-percent change in Class A accidents. The accident count was one for fiscal 2006 and four for fiscal 2007. (Low numbers for computing percentage increase.)

Although the Army had slightly more "flight" accidents during fiscal 2007 compared to fiscal 2006, flying hours also increased. Applying rate formulas shows us we had a significant increase in accidents per flying hour during fiscal 2007. The H-60-series aircraft had the most flying hours of any Army rotary-wing aircraft (47 percent of total rotary-wing hours) with only a slight rate increase for Class A accidents. During fiscal 2007, the top three mishap events for Class A through C accidents were engine overspeed/overtemp, hard landing and object strike.

RECENT CHANGE

FY2006/FY2007

	CLASS A			CLASS B			CLASS C			TOTAL		
AIRCRAFT SERIES	FY06	FY07	% CHANGE	FY06	FY07	% CHANGE	FY06	FY07	% CHANGE	FY06	FY07	% CHANGE
AH-64A/D	5	8	60%	1	3	200%	10	10	0%	16	21	31%
C/MH-47	3	4	33%	1	1	0%	10	11	10%	14	16	14%
OH-58D	4	5	25%	5	0	-100%	20	22	10%	29	27	-7%
U/MH-60 A/L	10	8	-20%	9	4	-56%	22	27	23%	41	39	-5%
UAV	4	5	25%	44	20	-55%	78	50	-36%	126	75	-40%
OTHER AIRCRAFT	1	4	300%	3	4	33%	6	12	100%	10	20	100%
TOTAL	27	34	26%	63	32	-49%	146	132	-10%	236	198	-16%

as of April 3, 2008

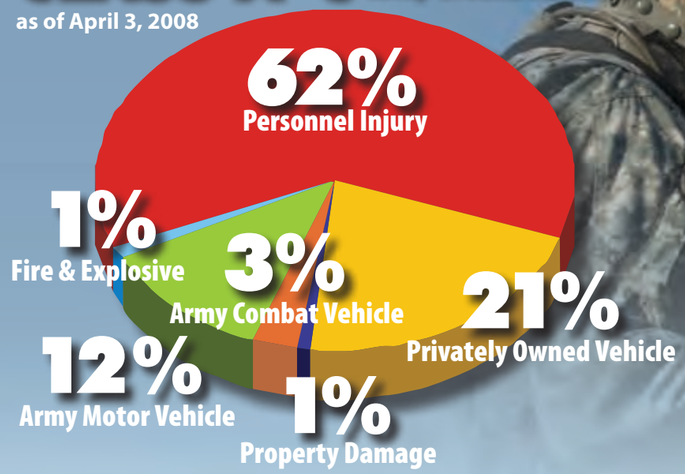
Ground

During fiscal 2007, the Army experienced 2,220 Class A through C ground accidents, costing $133.2 million. There were 230 Class A ground accidents, resulting in 212 Army military fatalities. As can be seen in the pie chart on page 30, 62 percent of the Class A through C Army ground accidents involved personnel injuries (PI); 21 percent were privately owned vehicle (POV) accidents; 12 percent were Army Motor Vehicle (AMV) accidents; and 3 percent were Army Combat Vehicle (ACV) accidents.

The picture changes when looking at Army military fatalities. POV accidents accounted for 52 percent of the fatalities; PI accidents accounted for 25 percent; AMV accidents accounted for 17 percent; and ACV accidents account for 5 percent. POV accidents will be discussed in further detail on page 31.

FISCAL 2007 CLASS A-C Army Ground Accidents

as of April 3, 2008



Personnel Injury

While PI Class A through C accidents in fiscal 2007 were down 55 from fiscal 2006, Class A accidents increased by 12. Of the fiscal 2007 accidents, 39 percent occurred while participating in Operation Iraqi Freedom (OIF) and Operation Enduring Freedom (OEF).

On-duty accidents accounted for 75 percent of the Class A through C PI accidents, resulting in 18 Army military fatalities and 1,022 non-fatal injuries. Fiscal 2007 saw 38 fewer Class A through C accidents and two fewer Class A accidents. The most frequent PI activities were physical training (e.g., running/jogging, confidence course), 18 percent; combat soldiering (e.g., hand-to-hand combat, patrolling/reconnoitering/scouting, infiltrating/assaulting/retreating), 16 percent; parachuting, 13 percent; engaging in "human movement" (e.g., walking, climbing/mounting/dismounting), 12 percent; and maintenance/repair/servicing activities, 11 percent.

Off-duty accidents accounted for 25 percent of the Class A through C PI accidents, resulting in 34 Army military fatalities and 306 non-fatal injuries. While the number of Class A through C accidents dropped by 17 from fiscal 2006, Class A accidents increased by 14. The most frequently reported accident activities were sports (e.g., basketball, football, softball, bicycling, water sports), 41 percent; and engaging in "human movement" (e.g., walking, climbing/mounting/dismounting, running), 20 percent.

Army Motor Vehicle

AMVs accounted for 12 percent of Class A through C accidents and 13 percent of Class A accidents during fiscal 2007, resulting in 37 Army military fatalities and 190 non-fatal injuries. Compared to fiscal 2006, there were 24 fewer Class A through C accidents and 10 fewer Class A accidents.

Most (72 percent) of these accidents involved tactical vehicles and accounted for 18 Army military fatalities and 87 non-fatal injuries. The HMMWV was the most common accident vehicle, with the M1114 accounting for 62 of 115 HMMWV accidents. Government sedans/station wagons were the most frequent commercial vehicles involved in AMV accidents.

Of the fiscal 2007 Class A through C AMV accidents, 61 percent occurred while participating in OIF/OEF, while 68 percent of Class A AMV accidents occurred while participating in OIF/OEF.

Army Combat Vehicle

ACV accidents accounted for 3 percent of the Class A through C accidents and 9 percent of the Class A accidents in fiscal 2007. There was an increase of 21 Class A through C accidents and 10 Class A accidents compared to fiscal 2006. During fiscal 2007, 11 Soldiers died and 36 others suffered non-fatal injuries from ACV accidents.

The most frequent ACV accident vehicles during fiscal 2007 were Bradley Fighting Vehicles, M1 tanks, special-purpose armor vehicles and LAV Stryker-series vehicles. Of the fiscal 2007 Class A through C accidents, 48 occurred while participating in OIF/OEF, while 16 Class A accidents occurred while participating in OIF/OEF.

Explosive and Fire Accidents

Explosive and fire accidents accounted for 1 percent of the Class A through C accidents and 2 percent of the Class A accidents during fiscal 2007. While the number of Class A through C fires decreased by six from fiscal 2006, the number of explosive accidents increased by eight. Of the Class A through C explosive/fire accidents, 56 percent occurred while participating in OEF/OIF.

Privately Owned Vehicle

Accidents involving POVs accounted for 21 percent of all Army Class A through C accidents during fiscal 2007. Half of all Class A accidents involved POVs. The cost to the Army was 110 Soldiers killed and a further 390 suffering non-fatal injuries resulting in at least one lost workday, a permanent partial or a permanent total disability. While there were 44 more Class A through C accidents than during fiscal 2006, there were 14 fewer Class A accidents.

Motorcycle riders accounted for 45 percent of the Class A through C POV accidents, with the number of accidents rising from 183 during fiscal 2006 to 210 during fiscal 2007. These accidents accounted for 38 Army military fatalities and 174 non-fatal injuries.

Sedan accidents increased by one for a total of 146, accounting for 31 percent of the Class A through C POV accidents. These accidents resulted in 39 Army military fatalities and 128 non-fatal injuries.

The remaining 24 percent of the Class A through C POV accidents involved Jeeps, sport utility vehicles, pickups, all-terrain vehicles, vans, bicycles and other vehicles. These accidents increased from 95 in fiscal 2006 to 111 in fiscal 2007. These accidents accounted for 33 Army military fatalities and 88 non-fatal injuries.

Conclusion

Overall, PI accidents accounted for the majority of Army injuries. As with previous years, POV accidents accounted for the majority of Army fatalities. Because the Army continues to lose Soldiers and equipment to needless accidents, it's critical all Army personnel strive to prevent these losses. Check out the USACRC's Web site at https://crc.army.mil for easy-to-access-and-use tools to arm yourself with the knowledge to prevent future accidental losses. «

Editor's Note: These statistics are current from the USACRC database as of April 3, 2008. Next month, Knowledge *will publish the 2008 midyear review.*

LOST

AVIATION

CH-47

CLASS C D Model

The escape hatch separated during flight at 1,000 feet mean sea level (MSL) and 120 knots indicated airspeed (KIAS).

OH-58

CLASS C C Model

The aircraft suffered tail boom damage (buckling) while conducting a low-level autorotation.

CLASS A D(R) Model

The aircraft contacted trees during flight, resulting in an uncommanded spin, and crashed.

ARE YOU TOTALLY FOCUSED ON FLYING AND SURVIVING?

UH-72

CLASS A A Model

During a simulated engine failure training maneuver, the tail rotor made contact with a ground obstacle and touched down hard.

C-12

CLASS C U Model

The aircraft suffered a bird strike to the right wing during flight.

UAS

MQ-5B

CLASS B

Post-flight inspection revealed a fuel leak and damage to the right landing gear and fuselage empennage.

RQ-1L

CLASS A

The UAS was in cruise flight at 14,000 feet MSL when controllers lost communication link. The system was later recovered.

RQ-7B

CLASS B

The UAS experienced mechanical problems (flap servo fail indication) during flight and sustained damage during touchdown. The system was recovered.

CLASS C

The UAS developed engine RPM fluctuations during flight, followed by engine failure. The parachute deployed and the system was recovered.

GROUND

AMV

CLASS A

A Soldier was paralyzed from the waist down when he was ejected from an M1151 that overturned and rolled numerous times. The driver of the vehicle, who was also ejected, was not injured. Seat belt use was not reported.

A Soldier was killed when his M1114 overturned when the driver attempted to avoid craters in the road during a convoy movement. The crew initiated rollover procedures, but the gunner suffered fatal injuries.

Personnel Injury

CLASS A

A Soldier suffered fatal injuries when an M1114 HMMWV shifted off two “bottle jacks” and fell on him. The Soldier was performing maintenance on the front brake calipers of the vehicle.

CLASS B

A Soldier lost his left index finger to the first joint when it was caught between the tow bar and track pad while performing maintenance on an M88.

DRIVING

POV

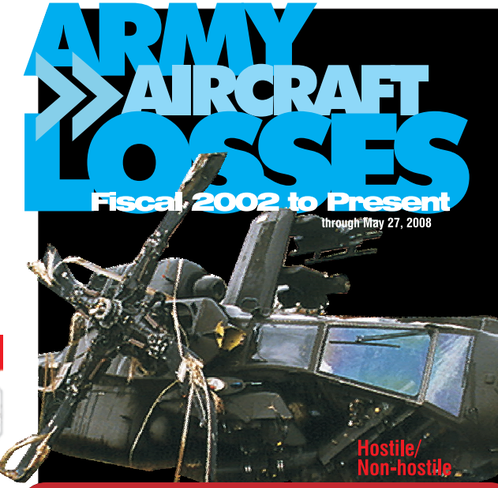
CLASS A

A Soldier was driving his privately owned vehicle (POV) in the fast lane when he veered left toward the median, lost control and struck an overpass embankment. The Soldier was critically injured and air evacuated to a medical facility, where he later died. He had been briefed on travel safety by his supervisor before the trip, but had not completed a risk assessment. He was wearing a seat belt and his air bags deployed.

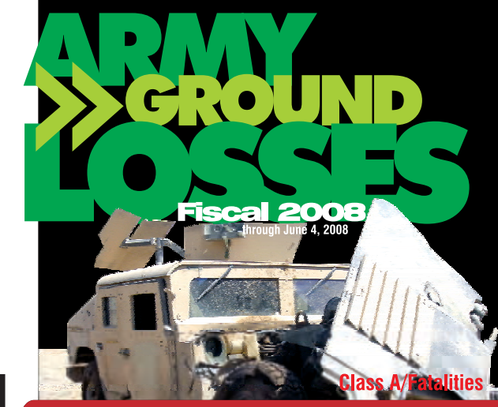
A Soldier was driving his POV at a high rate of speed with another Soldier riding as a passenger when he lost control, ran off the road and struck a tree. The driver was fatally injured. The passenger was evacuated to a medical facility, where he was listed in stable condition. Neither Soldier was wearing a seat belt.

DO YOUR SOLDIERS UNDERSTAND THAT NOT WEARING SEAT BELTS AND SPEEDING IS A RECIPE FOR TRAGEDY?

A Soldier was driving his POV when he lost control, crossed the center line and crashed into a cement-mixing truck. The Soldier, who was wearing his seat belt, was fatally injured.



AH-64A/D	11/51
U/MH-60A/L	8/28
C/MH-47	8/16
OH-58D	11/28
TOTAL	38/123



AMV	16/12
ACV	5/3
PERSONNEL INJURY includes weapons handling accidents	26/22
FIRE/ EXPLOSION	3/3
PROPERTY DAMAGE	1/0
TOTAL	51/40

- A Soldier in transition leave status was driving her POV when it overturned. The Soldier was pronounced dead at the scene.

POM

CLASS A

- A Soldier was operating his motorcycle at a high rate of speed when he ran a red light, collided with a minivan and suffered fatal injuries. The Soldier was wearing a helmet, was licensed and had attended Army-approved Motorcycle Safety Foundation (MSF) training three months before the accident.

- A Soldier operating his motorcycle at a high rate of speed lost control and was thrown into a pole, where he died upon impact. The Soldier was wearing Army-required personal protective equipment (PPE), was licensed and had attended Army-approved MSF training.

- A Soldier was operating another Soldier's motorcycle in a parking lot when he drove onto the roadway and struck a guardrail. The Soldier was not wearing a helmet or PPE, was not licensed and had not taken MSF training. He was taken to a medical center, where he later died.

POV DRIVING LOSSES

Fiscal 2008

through June 4, 2008

Class A accidents/Soldiers killed	
CARS	33/33
SUV/JEEPS	7/8
TRUCKS	8/6
MOTORCYCLES	30/29
OTHER*	3/3

*Includes: vans and ATVs

79

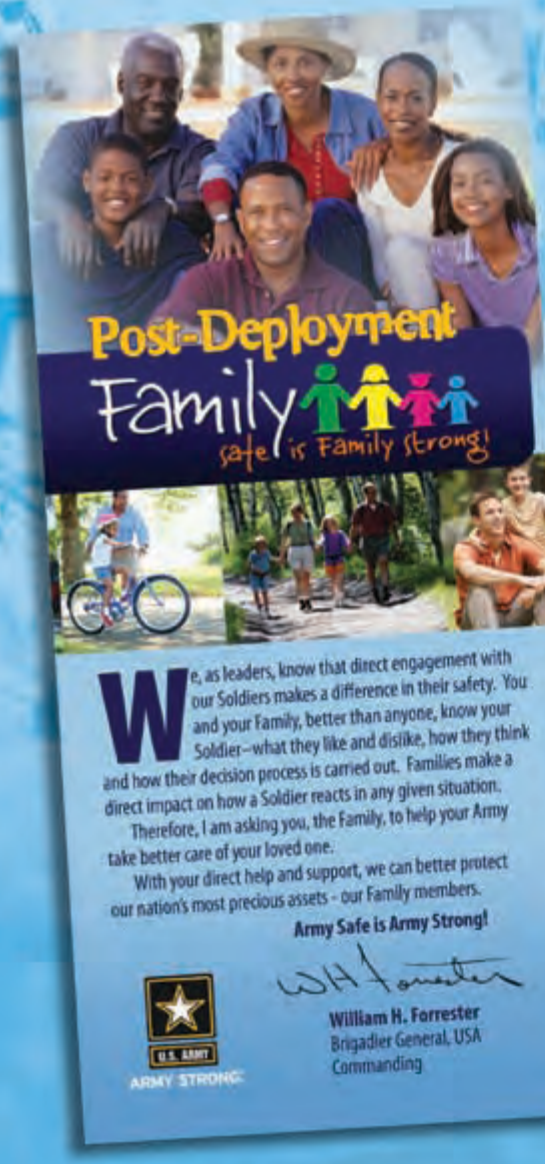
TOTAL DEATHS

Fiscal 2007: 69 3 year average: 80

WEAR YOUR SEAT BELT

- A Soldier was driving his POV at a high rate of speed with another Soldier riding as a passenger when he lost control, ran off the road and struck a tree. The driver was fatally injured. The passenger was evacuated to a medical facility, where he was listed in stable condition. Neither Soldier was wearing a seat belt.

Post-Deployment Family engagement Kit



You and your Family, better than anyone, know your Soldier.

Get the tools for Family members to take an active role in implementing safety practices to protect their loved ones returning home from deployments. Log on today and get your Family Engagement Kit.

https://crc.army.mil/familyengagement

U.S. ARMY
ARMY STRONG.

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

ARMY SAFE IS ARMY STRONG

safety tips

Most often, food poisoning occurs because food is incorrectly handled, improperly cooked or inadequately stored. The following steps can help reduce chances of getting food poisoning:

- Wash your hands, utensils and food surfaces often.
- Keep raw foods separate from ready-to-eat foods.
- Cook food to the recommended temperature.
- Defrost food safely in the refrigerator, microwave or cold water.
- Use caution when serving food:
  - Throw out leftovers that have been out for more than two hours.
  - Use a tray of ice for cold foods that must stay out longer than two hours.
  - Use warming trays for hot foods that must stay out longer than two hours.

When in doubt, throw it out.

safety always in season

The bottom line—keep hot foods hot, keep cold foods cold.

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ARMY SAFE IS ARMY STRONG

101 CRITICAL DAYS OF SUMMER
26 May – 1 Sept 2008

Heat savvy can save lives

Avoid becoming a heat casualty this summer; protect yourself and your Family.

Drink plenty of fluids

Increase fluid intake - regardless of activity level. During hot weather, individuals need to drink more liquid than their thirst indicates.

Wear appropriate clothing and sunscreen

Choose lightweight, light-colored, loose-fitting clothing. In the sun, a wide-brimmed hat will provide shade and keep the head cool.

Adjust to the environment

Sudden changes in temperature are stressful to the body. Individuals develop a greater tolerance by limiting physical activity until acclimated to the heat.

Replace salt and minerals

Heavy sweating removes salt and minerals from the body. These are necessary for a body and must be replaced.

Monitor those at risk

Any health condition that causes dehydration makes the body more susceptible to heat sickness. Avoid over-exertion and get advice about medication interaction.

Schedule activities carefully and using common sense

Try to plan activities either before noon or in the evening. While outdoors, rest frequently in a shaded area. Resting periodically will give a body's thermostat a chance to recover. The most efficient way to beat the heat is to stay in a cooled area.

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26 May - 1 Sept 2008

HOW ARE WE DOING?: FISCAL 2008 MIDYEAR REVIEW p. 27

KNOWLEDGE

VOL 2 AUGUST 2008

OFFICIAL SAFETY MAGAZINE OF THE U.S. ARMY

WHAT RIGHT LOOKS LIKE p. 5

U.S. ARMY

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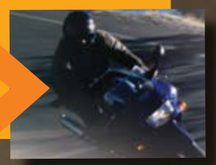
KNOWLEDGE

OFFICIAL SAFETY MAGAZINE OF THE U.S. ARMY

contents



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FROM THE DASAF

"LEADERS are not detached, but rather are able to COMMUNICATE effectively with their SOLDIERS which leads to an in depth UNDERSTANDING and better develops their KNOWLEDGE."

ENGAGED LEADERSHIP
SUCCESSES AND UNDERSTANDING

Over the last two or three years, we have made encouraging progress in achieving a safer Army by changing Soldiers' understanding of safety and the desires for Leaders' direct engagement. At the Combat Readiness/Safety Center, we see through the statistical analysis of losses, that where Leaders are present and engaged - There is Goodness.

Where we appear to be lacking is in the common understanding of who are Leaders (are they only those who wear the accoutrements of rank?) and what actions we exact from Leaders to ensure our Army operates safer and is best prepared to meet demanding requirements.

Gen. Campbell (CG, FORSCOM) professes that engaged Leaders are engaged, responsible, accountable, and in a solid working relationship with Soldiers. He further states engaged Leaders are not detached, but rather are able to communicate effectively with their Soldiers which leads to an in-depth understanding and better develops their knowledge. This allows Leaders to recognize Soldiers' behaviors and influence their attitudes; clarify standards and ingrain habits of adherence to standards; infuse confidence in Soldiers, comrades and formations; and most importantly, instill Soldiers with the confidence in their Leaders' abilities to enhance/ ensure mission success.

Today's Army is bridging a generational, informational and cultural gap. Current Leaders reach into the ranks to fill voids in knowledge, raising awareness specifically where Soldiers are not likely to have the skill sets to understand. Look carefully at the attributes of Leadership as discussed in this article and where you expect the actions that accompany this sacred honor to reside in your formations. Every Soldier is a Leader on some level. My expectations are that we all take responsibility, within our individual spheres of influence, to make this the safest Army our Nation has ever had.

Army Safe is Army Strong!!

William H. Forrester
Brigadier General, USA
Commanding

TAKING CARE OF OUR OWN

> "**LEADERS** - every **SOLDIER** in my mind - need to take the **HARD RIGHT** over the **EASY WRONG**."

There is a lot going on in our Army. In over six years of sustained combat operations on two fronts, brave Soldiers continue to answer the call of our great nation. There's one thing going on in our Army, however, that does not make sense – losing Soldiers to accidents. I will be the first to admit I don't have all the answers. Two trends in particular we need your help with. First summer, more specifically the last quarter, which is, historically, the deadliest time of year for Soldiers. Second should be no surprise; privately owned vehicle (POV) and motorcycle accidents are on the rise and have claimed over 90 Soldiers' lives so far this fiscal year! We need to reverse these trends and get a handle on these senseless losses.

Recently, the U.S. Army Combat Readiness/Safety Center opened a forum on the Army Battle Command Knowledge System (BCKS) called Army Safety Net which allows Leaders and safety professionals to share information affecting our force. Brig. Gen. Forrester and I pose questions over the Army Safety, NCO and Warrant Officer nets to draw from the experience of our force and we thank all who participate. Awesome points are being made and I agree that we (the Army) need to take action. We need to carry these discussions over to our formations and educate the force, especially about motorcycles.

Gas prices are to the point, I dare say, of making most everyone a potential motorcycle buyer or knowing someone who is. Banning motorcycles, as I have heard some prescribe to, is not the answer. Education is key; motorcycle mentorship programs and riding with groups that abide by the law are great ways to make motorcycle riding a life skill. More importantly, mentorship and group rides show motorcyclists taking responsibility for their sport. Leaders - every Soldier in my mind - need to take the hard right over the easy wrong. Make on-the-spot corrections; everyone in our Army is a Safety Officer/NCO and can tactfully exercise general military authority on and off duty. Some advocate Line of Duty (LOD) investigations and AR 600-8-4 outlines the rules governing line of duty and misconduct determinations. A LOD can be the hammer, but there are other effective tools, ones with less drastic consequences, we can implement.

When it comes to motorcycle accidents, where do we put the onus? On riders? Or with those who turn their heads and let accidents happen? How many of you have seen Letters of Reprimand or Article 15s used for violations; wouldn't these be relevant for Soldiers not riding with personal protective equipment (PPE) or driving recklessly? Although I'm referring to motorcycles, similar issues exist with POVs and should not be overlooked when taking action to move left of the boom.

We continually receive great suggestions and here are a few received via the Army Safety Net:

Installations could hold a one-day motorcycle safety stand down for riders. Ask them how they would solve the problem of motorcycle mishaps and publish the recommendations in the installation newspapers for awareness.

Fort Drum conducted a motorcycle rally in conjunction with a division run. Motorcyclists were not only exempt from the run; they also led the division during the run. Afterward, riders conducted a ride and returned to a barbeque, where Leaders conducted professional development about motorcycles.

I visited Fort Campbell and learned the installation imposes a $30 fine to Soldiers who aren't wearing their PPE on post.

We need to take care of our own. If we make it too tough for Soldiers to ride on the installation, they will find other places where we can't police them. What are we doing to bring it back where we can get our arms around it? Leaders are engaging at all levels. TRADOC Headquarters and other commands have conducted motorcycle mentorship rides, including the SMA and V Corps CSM. What are we not doing or what can we do better?

This summer, longer days directly impact the level of fatigue we experience when trying to cram well-deserved time off into short periods of time. Don't push yourself beyond the limit, manage your time off and have fun this summer. Your nation, Family and Army need you.

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

BEST PRACTICES RECOGNIZING THE RISKS

STAFF SGT. JOEY L. GARCIA III
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Fort Knox, Ky.

Understanding how composite risk management (CRM) works and having the ability to brief it is the responsibility of Soldiers of all ranks. For the Soldiers of the 1st Squadron, 16th Cavalry Regiment, under the command of Lt. Col. Christopher Delarosa, CRM is a part of everyday life. Whether it is out in the field training the future armor Leaders or on the streets in and around the Fort Knox community, the troopers of 1st Squadron know how to implement CRM into their everyday lives.

Both on and off the battlefield, safety is a top priority. Integrating CRM into combat should be second nature, and teaching it to junior Soldiers must start in garrison – before they go to the field. At the company or troop level, it's as simple as breaking down everyday actions like driving to work. Are my tires inflated properly? Have I had enough rest? It's raining, do my windshield wipers work? For weekends, it's taken one step further. What am I planning on doing this weekend? How am I getting to where I'm going? Is there a designated driver if our group goes to a club? What is the decision point for staying in a hotel?

Safety measures taken by the chain of command and the individual Soldier must be met with the same intensity and awareness. CRM must be completed at the lowest level to ensure Soldiers are aware of the real-world hazards they face in day-to-day activities. Some thought and analysis must be done by the Soldier. Otherwise, CRM will not work.

To help ensure their Soldiers also incorporate the principles of CRM into their off-duty activities, Leaders with the 1st Squadron, 16th Cavalry Regiment, have implemented an effective new technique. When it comes time for a holiday or weekend safety brief, troopers are asked what activities they'll be participating in. Soldiers who are planning mid- or high-risk activities are then asked to come before the formation and backbrief their risk mitigation from their CRM worksheet, including the potential hazards they'll face, what controls they'll take and, finally, how they'll implement those controls.

> "**CRM** must be **COMPLETED** at the **LOWEST LEVEL** to ensure **SOLDIERS** are aware of the **REAL-WORLD HAZARDS** they face in **DAY-TO-DAY ACTIVITIES**."

What makes this briefing method so unique is the troopers are coming up with their own risk assessments, not canned briefings they would hear from the troop chain of command before being released for the weekend. This, in turn, helps Soldiers make better decisions based off their own assessments before being released for off-duty activities. These pre-weekend backbriefs have proved very popular with the Soldiers and captured their interest and attention much better than just listening to the troop commander talk at the formation. It helps instill the habit of using CRM throughout the day – on and off duty.

The emphasis placed on the training and use of CRM was one of the major reasons the 16th Cavalry Regiment has experienced a reduction in its accident rate. In fiscal 2007, accidents decreased by nearly 70 percent compared to fiscal 2006. This improvement occurred despite a dramatic increase in high-risk training events due to the switch from the Armor Officer Basic Course to the Basic Officer Leader Course III Program of Instruction; an almost doubling of the operations tempo within the regiment; and an increased number of courses taught and larger course loads and classes. In fiscal 2006, the regiment suffered 19 Class A through D accidents – 13 on duty (10 of which were training accidents) and six off duty. In fiscal 2007, the regiment reduced its accidents by two-thirds to just seven – five of which were on duty (three were training accidents) and two that occurred off duty.

Safety must be a priority for every Soldier. By identifying risks in a manner that is conducive to learning, the troopers of this squadron learn about CRM at the Soldier level and apply it to every mission they are tasked. These efforts help keep our Army Safe and Army Strong!

autocross — satisfying the need for speed

WARRANT OFFICER 1 RICHARD ALBRECHT
Company B, 1st Battalion, 137th Aviation Regiment
Rickenbacker International Airport, Ohio

"It's like being in a movie chase scene, only you're holding onto a steering wheel instead of a box of popcorn!" That's one racing organization's description of what it is like to race your car in an autocross competition. It's a sport that allows drivers to legally get the same adrenaline high they'd otherwise get from street racing.

Finding a safe, legal way to enjoy the performance of your car is important. Soldiers have killed themselves and their passengers while street racing. While racing is as American as mom and apple pie – the trick is finding a way to race safely and legally. Fortunately, autocross provides Soldiers an opportunity to compete in races where winning is all about vehicle handling and driver skill. The skills Soldiers learn – smooth transitions, enhanced braking and skid correction – make them better, safer drivers on the street.

What is Autocross?

Solo autocross is a competition where individuals are timed as they navigate through a temporary course marked by traffic cones. The course is generally laid out in a low-hazard location, such as a parking lot or an inactive airstrip. The course requires drivers to make gates and negotiate slaloms and skid pads at speeds normally encountered during highway driving.

Several organizations sponsor autocross racing. Some organizations are national, some are regional, some are local and others are sponsored by particular car manufacturers. Locating these clubs is as easy as clicking onto the Internet and keying in the words "autocross racing." What these organizations share in common is a passion for racing, rules to keep the races truly competitive and safety guidelines so racers can come back to race another day.

Safety

When it comes to racing, safety always comes first. Races are conducted under the watchful eyes of track officials who are positioned along the track to enforce the rules and guidelines. Competing vehicles are inspected to ensure they meet safety standards. Those standards include fire-suppression systems/fire extinguishers, roll cages and driver restraints. Drivers are required to have personal protective equipment (PPE) such as helmets and fire-retardant clothing. The focus on safety makes autocross racing safer than driving to work.

Who You'll Compete Against

To keep the races truly competitive, cars are grouped into basic classes. Each autocross-sponsoring organization defines those classes in their guidebooks. For example, one club's rules groups vehicles into four basic classes – stock, street prepared, prepared and modified – based upon the vehicles' levels of modification. This ensures a stock sports car isn't competing against a highly modified Viper! The winning edge comes down to driver skill.

What You'll Need

I race with one of the national autocross-sponsoring organizations. To race in their autocross events, you'll need a car, an entry fee of $25 to $50 and a valid driver's license. You'll also need to do some preparation before showing up to race. That includes having PPE, including a Snell-approved helmet (some venues have loaner helmets), working seat belts, eye protection and shoes that enclose your toes. Your vehicle also must be in good working condition with no major leaks, steering and suspension properly aligned, lug nuts properly torqued and tires having adequate tread. Beyond that, it's important to ensure your battery is tightly secured and you don't have any loose objects in your trunk or interior. It's also important to make certain your fluid levels are topped off and reasonably fresh.

Race Day

Try to show up early enough on race day to register and then walk the course. The registrars will verify your driver's license, assign a number for your car and have you sign an insurance waiver. If it's your first autocross, tell them so they can put you in the novice class. There you'll get advice from an instructor, a handbook, a guided course walk and rides with experienced drivers. The next step is the technical inspection, which your vehicle must pass if you're to compete. Read the technical inspection chapter of your club's rule book to see what you'll need to do. If your vehicle is modified, you're responsible for proving it conforms to the rules. Once your car passes the inspection, walk the course and talk to other drivers to find out what works and what doesn't. Make sure you do this early enough to get back in time for the mandatory drivers' meeting. During the meeting, the event chair will provide information about course conditions, the number of runs, any particular safety concerns and work assignments.

Time to Race

With my club, I normally get to make at least four timed runs, weather permitting. It's important when racing to find out where you are in the running order so you'll know when to line up. Follow the track official's directions and, when he waves the green flag, go for it and have fun! If you get "lost" on the course – which is easy to do – take time to orient yourself and continue. You'll receive your time after each run. Your fastest time of the day will determine your finishing position within your class and category.

Work Assignments, Course Clean-up and Awards

With the fun, there is some work involved. This usually consists of observing other drivers on the track to see if they've left the course (failed to finish) or if they've hit a cone, which will cost them a time penalty. You'll normally be paired with another driver, so you'll have an opportunity to talk about the best techniques for the course. Your autocross-sponsoring organization's rule and guidebook will provide details on how to be safe while working the course.

When the racing is over, everyone helps pick up the cones and put away equipment. Following that, depending on the race's sponsor, the event chair will give out the results and present trophies. As an alternative, some local car clubs sponsor a five- to seven-event circuit, maintaining point standings throughout the year and awarding trophies during a banquet at the end of the season.

The Bottom Line

At the end of the day, you'll have tested your driving skills and your car's performance in a safe, competitive environment. You'll also be around for the next autocross, where you'll get another chance to further hone your skills. And, who knows – there could be a future in this for you. Autocross has helped a number of drivers launch their professional racing careers. Maybe you'll get your start there too!

Editor's note: While the U.S. Army does not officially endorse any specific autocross racing club, many Soldiers have chosen to participate in autocross as a safe and legal alternative to street racing. This article was provided by a Soldier who has found autocross to be an excellent way to enjoy the performance of his car in a competitive environment.

BEST PRACTICES
TRADOC Fatality Reporting

DOLORES NIX
U.S. Army Training and Doctrine Command
Fort Monroe, Va.

Reporting the facts and lessons learned behind a fatal accident can save the lives of Soldiers in the future. The U.S. Army Training and Doctrine Command (TRADOC) has developed its Fatality After Accident Review (FAAR) process to ensure those lessons learned reach commanders and Soldiers in a timely manner. The process is offered here as a Best Practice that can provide useful tips for other Army organizations.

Whenever a fatality occurs, a Fatality Review Board (FRB) is convened to initiate a FAAR. This action is separate from the accident reporting requirements of Department of Army Pamphlet 385-40, *Army Accident Investigation and Reporting.* The FAAR's purpose is to ensure accidental losses are investigated in a timely manner, identify causes or contributing factors and determine necessary Leader actions to prevent recurrences. The FAAR is initiated by the senior commander (SC) and completed within 15 to 24 days. The following is the FAAR timeline:

- Any SC experiencing the loss of a Soldier or DA civilian on duty as a result of an accident will telephonically notify the TRADOC commander. The initial Fatal Accident Notification and Interim Report must include as much information as possible. In the absence of the commanding general, the notification and report will be submitted to the deputy commanding general/chief of staff.
- **Within 72 hours:** The SC provides a follow-up report to the TRADOC commander addressing any additional information obtained since the initial notification.
- **Within 14 days:** The SC will convene an FRB and conduct a FAAR. The purpose is to ensure the timely investigation of accident causes and contributing factors and the swift dissemination of lessons learned. The FAAR is not to be delayed awaiting toxicology, autopsy, police or other technical reports. If needed, a more detailed investigation can be conducted later by the safety investigation board or an Army Regulation 15-6 investigating officer to address those aspects. The FRB will be chaired by the SC or chief of staff and, as a minimum, will include the following members:
  - –The unit chain of command, from the first-line supervisor to the brigade commander or equivalent
  - –Command safety director
  - –Medical treatment center facility commander or officer-in-charge for clinical services
  - –Other members, as required, including the alcohol and drug counseling officer, counseling officer, risk reduction officer, staff judge advocate and chief, Mental Health Services
- **Within 10 days of completing the FAAR:** The responsible SC provides the TRADOC commander the FAAR in memorandum format. A copy will be provided to the TRADOC safety director and command surgeon for their review and dissemination of generic lessons learned throughout the command. The memorandum will focus on the accident causes, to include leadership failures (if they can be logically determined from the evidence available at the time), corrective actions taken and any recommendations to prevent recurrence.

Since TRADOC established the FAAR process, there have been several instances where the timely identification and dissemination of lessons learned obtained from the FAAR may well have prevented other accidents.

For more information on TRADOC's FAAR procedures, contact the author at (757) 788-2418 or DSN 680-2418.

The Wind Zone Model

MAJ. JOSH DAY
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What is power management? This term means many things to many people. Most agree it has something to do with engine performance and torque. The instructors at the High-Altitude Army Aviation Training Site (HAATS) like to think there's more to power management than just the torque gauge. At HAATS, power management encompasses three things: understanding the environment, understanding the aircraft and understanding yourself.

This article will focus on understanding the environment, which encompasses many things. One of the most important components is the interaction of wind and terrain. At HAATS, we call this Wind and Terrain Analysis (WTA).

This analysis maintains that wind flows over and around obstacles in a consistent and predictable manner. The ability to predict the flow of the wind is the result of understanding and practicing WTA principles, rules and methodologies, which have been developed through research and experiment, both in the laboratory and field. The first requirement to achieve this ability is to believe it can be accomplished. Most pilots dismiss the notion as unnecessary or believe it's far too complicated an issue. This is particularly true in mountainous environments. Airflow responds to the same laws of fluid dynamics as water or any other gas. While we often cannot see the movement, we can always detect it directly or indirectly. It is this ability which allows us to develop the skill to predict and, ultimately, see the wind. The components we need to know and integrate will follow below.

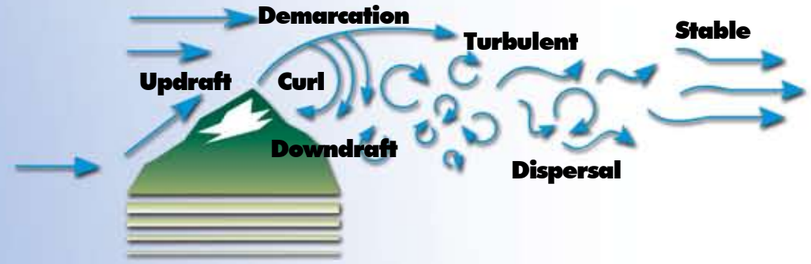
Air flows much like water and has characteristics aviators should note and test while flying in their area of operations. Air follows the path of least resistance. It will take the shortest and/or least obstructed route to fill any lows created by high winds over rough terrain. In canyons and drainages, the wind accelerates in the resultant venturi due to increasing pressure differentials. In winding turns, they accelerate to the outside of the turn, exactly like water, leaving eddies on the inside of turns. When colliding with an equal and opposing force, pilots can expect an opposite and turbulent flow. This opposite reaction can take the shape of a cliff face or another air current.

It's imperative aviators combine the principles in the preceding paragraph with the characteristics of stability and the mechanics of prevailing and valley winds to understand and apply the cornerstone of mountain wind predictions – the Wind Zone Model. The five zones are updraft, downdraft, turbulent, dispersal and stable zones (as depicted in the diagram to the right).

In addition, two other terms require explanation: the demarcation line is the point separating the updraft and downdraft zones, and the "curl," or low pressure, is created by the wind's passage over or around an obstacle.

The demarcation line's angle and height is established by three factors: the velocity of the wind, steepness of the slope and angle at which the wind strikes the slope. It can be considered an extension of the slope as it rises above and beyond the obstacle. It is bent downward horizontally as it interacts with winds aloft. Its actual location becomes important in cross-country operations and when approaches are being considered to pinnacles and ridgelines (see diagram below).

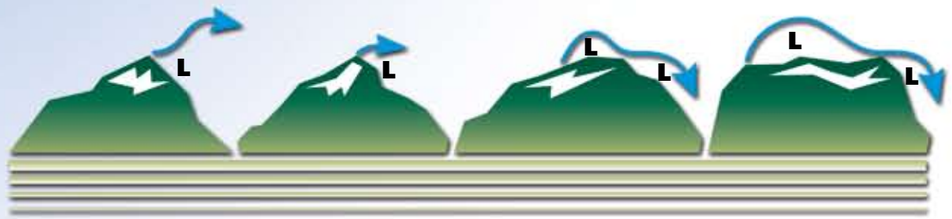
The low-pressure area is created on the leeward side of the obstacle by the very passage of that wind and is the "engine" that drives the ensuing turbulence. The wind will attempt, via the path of least resistance, to fill the low. In the diagram below, the wind must come back from the downdraft zones to attack the low-pressure areas. This initiates a pattern of turbulence, rotating on a horizontal axis, which extends leeward until frictional interaction with other air molecules slows the swirling patterns, allowing the air currents to sort themselves out (dispersal zone) and return to a stable flow (stable zone).



WIND ZONES

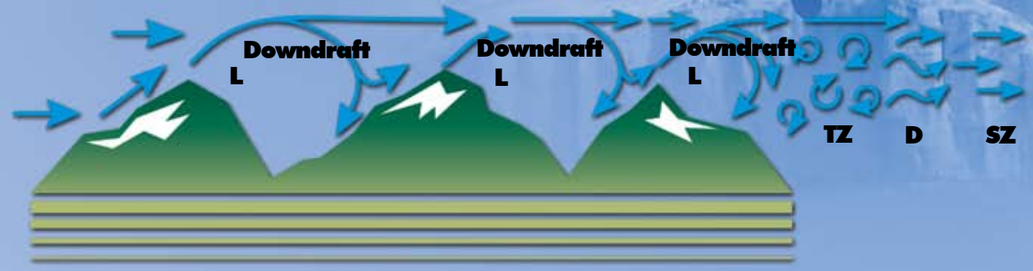
The updraft and downdraft zones are a result of the intervening obstacle. The remaining three zones are a result of the creation of low pressure leeward of the obstacle. If the obstacle has sharp drop-offs on either side, then the movement to fill the low is lateral, or "wrap-around," and the rotational plane of eddies and ensuing turbulence changes to reflect this direction. The rotational axis moves from horizontal to vertical and all points in between. This is particularly noticeable around isolated, sharp peaks, shoulders (abrupt change in terrain relief) or buildings.

The zones expand with an increase of velocity, slope angle or impact angle and contract when the above decrease. Knowing this is important for two reasons. First, pilots with a little experience can judge the effects of the wind by simply studying a topographical map if the upper wind's direction and velocity are known. They can then plan safe routing to avoid the worst of the zones. Secondly, while en route, the pilot can judge the severity of the zones by how far leeward of the obstacle he encounters the dispersal zone (light turbulence). The farther the dispersal zone is from the obstacle, the greater the severity of the turbulence and downdraft zones.



DEMARCATION LINES AND RESULTANT LOW PRESSURE AREAS

When additional obstacles follow immediately after the initial obstacle, then some zones may be eliminated altogether. This is often the case in a series of peaks or ridgelines (as depicted below).



ABBREVIATED WIND ZONES AND STRIKE POINTS

In this situation, most of the turbulent zones are abbreviated or absent, as the turbulent, dispersal and stable zones can be eliminated on the initial and middle ridges. The key is if and where the downdraft zone impacts subsequent obstacles. The ensuing updraft zones can be compressed due to the strength of the downdrafts. Due to compression, the ensuing updrafts become very powerful. This has serious implications for aircraft transitioning narrow valleys. In high winds, there is very little safe maneuver room in such valleys except within the narrow confines of the updraft zones or the "curl" or low pressure. Aviators needing to execute a landing or to maneuver in this confined airspace must use great caution and have an intimate understanding of the environment and their aircraft. Powerful rotational patterns are trapped between the downdrafts and the upwind ridges depicted above.

An additional note must be made about the above diagram. The point where a downdraft descends and impacts subsequent terrain is known as the strike point. Due to the lateral resistance of other air molecules, the airflow at this point can only go up or down. In freshly fallen snow, this area is visible. If there are no visual indications and the goal is to remain above the strike point, then the pilot needs to fly at altitudes equal to the ridge tops. When the updraft zone is compressed as in the previous paragraph, then the pilot needs to fly laterally as close to the terrain as safety permits to remain in the updraft. In these conditions, the route and altitude are dictated by observed or suspected conditions.

This is a brief synopsis of WTA and the Wind Zone Model, which should explain some of the nuances of mountain flying. Having an understanding of the wind and its interaction with terrain can mean the difference between success and failure. For further study on wind and terrain, reference the HAATS Student Book or Field Manual 3-04.203, *Fundamentals of Flight*. You might also consider scheduling a course date at HAATS, which can be found on the Army Training Requirement Resources System, or ATRRS, under School Code 961A or at www.coloradoguard.army.mil/webpages/haats.htm.

IT'S ALL ABOUT POWER

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Editor's note: In this article, we're focusing on engine performance, torque, situational awareness and knowing how much power is available.

Army helicopter pilots are expected to fly in high-density altitude conditions. Simply put, at higher altitudes and in warmer temperatures, an aircraft's engine puts out less power, reducing the aircraft's maneuverability and limiting the load it can carry. Both affect safety and are of critical importance to Army aviators, who are routinely tasked to transport people and cargo or carry weapons and ammunition under conditions that would keep commercial aircraft firmly on the ground.

Tabular Data

Tabular data allows the aircrew to assess power requirements at a hover. It's the means by which aviators can update hover performance in the ever-changing conditions of mountainous and high-density altitude operations. Tabular data exists for most Army aircraft and can be found in either the aircraft checklist or operator's manual. While the weight and torque numbers vary from aircraft to aircraft, the methodology for use is identical. It's intended for cockpit use as a means for a pilot to quickly assess the out-of-ground effect (OGE) weight, the torque to hover OGE and in-ground effect (IGE) for that weight. In the example below this paragraph, if the aircraft weight is 19,200 pounds with 6,000 feet pressure altitude (PA) and 30 C, the torque to hover OGE is 99 percent and the torque to hover IGE is 83 percent. For the sake of coherent presentation, we will use the tabular data for a UH-60L (1.0 aircraft torque factor). It's important to note, however, that the format, function and use are identical with all tabular data.

6,000 feet PA / 30 C
192
99
83

A rule of thumb can be used to adjust the hover number to the current gross weight of the aircraft. The rule of thumb is approximately the maximum gross weight of the aircraft divided by the transmission limit. In the UH-60, it is 1 percent of torque equals 200 pounds of aircraft weight. Each aircraft has its own rule of thumb for use with tabular data. If the aircraft weight is 16,000 pounds, take the difference between 19,200 – 16,000 = 3,200 ÷ 200 = 16 percent. Subtract 16 percent from 83 percent to get your IGE hover of 67 percent, with the maximum torque of 99 percent.

12,000 feet PA / 20 C
156
80
67

One of the easiest methods to determine current gross weight of the aircraft is to add the aircraft's zero fuel weight (365-4) to the fuel onboard. Once the weight is known, adjustments using the rule of thumb will give you the hover required. In the High-Altitude Army Aviation Training Site's (HAATS) Power Management Training System, this number is considered the simulated maximum power available for maneuvering, approach and takeoff. If the zero fuel weight is 14,000 pounds and the fuel at landing is 2,000 pounds, the aircraft weight would be 16,000 pounds. Doing the same math as before, 15,600 – 16,000 = -400 ÷ 2 = 2 percent. Add 2 percent to 67 percent to get your IGE hover of 69 percent, with the maximum torque of 80 percent.

0 feet PA / 40 C
220
109
93

When the top number is the structure limit or the second number is the transmission limit, then the second number is not the maximum torque and you need to go to the maximum torque chart to find that number. In this case, the maximum torque chart gives the 10-minute limit as 117 percent. If the aircraft weight is 16,000 pounds, the difference would be 6,000 pounds, which equals 30 percent off of 93 percent for 63 percent IGE, with a maximum torque of 117 percent.

Remember, these hover numbers are based upon a level surface and zero wind. If this is not the case for the maneuver, then you have to adjust accordingly for lack of surface and impact of headwinds, tailwinds, crosswinds (left and right), updrafts and downdrafts. Tabular data provides an aviator with a good starting point for determining "how much power it will take."

Cruise Charts

Cruise charts are the total drag charts taking into consideration parasite, profile and induced drag. There are three important points on the chart that are determined by the tangent of where the lines intersect the curve. These points, identified as Vx, Vy and Lift Drag (L/D) maximum angle of attack, are defined below. Other points will be a compromise of the above-stated speeds.

- **Velocity x** is the point where the line from the maximum power available intersects the total drag curve. The point is slightly above effective transitional lift, which is the speed that will give you the best angle of climb (maximum altitude in a given distance) when OGE power is not available.
- **Velocity y** is the point of least total drag; it is where the greatest excess power occurs (power available minus power required). This speed will give you the best rate of climb (maximum altitude per unit of time), maximum endurance, minimum rate of descent (autorotation), best turbulence penetration (severe downdraft) and maximum angle of bank without loss of airspeed or altitude (~ 60 degrees). For dual-engine aircraft, it's the point on the cruise chart where you figure the maximum gross weight single-engine (~maximum OGE weight).
- **Autorotation.** The recommended autorotational airspeed is a compromise between Vy and (L/D) maximum angle of attack for the best energy during deceleration and touchdown.

> "**POWER MANAGEMENT** is **MORE** than just **REFERENCING** a torque gauge; **IT'S** about **SITUATIONAL AWARENESS**."

- **(L/D) maximum angle of attack**. This velocity is the most efficient angle of attack for the airfoil. It will give you maximum range (greatest distance traveled per fuel consumed), maximum angle of glide (autorotation) and is essentially the airspeed at which your aircraft was designed to fly. The bank angle it is capable of without loss of airspeed or altitude is about 45 degrees.

Cruise charts and their application provide some vital numbers to reference in flight. Faster speeds have an exponential increase in power required, fuel burn rate and loss of bank angle capability without loss of airspeed or altitude. Aircraft-specific hazards are extreme nose-low profiles (nose tuck tendency), exceeding CGI (cruise guide indicator), V_{ne} (velocity, never to exceed) or V_H (velocity, horizontal). Knowing the number you need to fly at in a given condition could mean making it there with the fuel you have onboard or making that turn without impacting the terrain.

Maneuver

Military aviators seldom have altitude to sacrifice for maneuver capability, so it's important to know airspeeds and amounts of power to execute maneuvers. If you want to execute a 30-degree bank angle and not lose speed or altitude, you need to add approximately 15 percent of the power applied. For example, if you're using 60 percent for cruise, you would need to add 9 percent for a total of 69 percent. For a 45-degree angle of bank, the increase is 40 percent of power applied, and for a 60-degree angle of bank, the increase is 100 percent, or double the power applied.

Along with the power increase for the turns, you will have transient spikes and transient reductions in power when entering and departing these maneuvers. With the application of left or forward cyclic, you will get a transient spike, and with the application of right or aft cyclic, you will get a transient reduction. Remember that right turns end with a left-turn input and quick decelerations finish with forward cyclic. If your aircraft characteristics include transient rotor droop, it's highly advised to lead maneuvers with power.

Climbs and descents will also increase or decrease the amount of power required; generally, it takes 2 percent per 100 feet per minute. This rule of thumb is especially useful when executing an approach or climbing to clear a ridge and removes the guesswork in determining what power setting to fly for a given angle.

Conclusion

Power management is more than just referencing a torque gauge; it's about situational awareness. It's a method of making you aware of all the things that affect the aircraft. The main thrust is allowing the pilot to understand as much as possible about himself, the aircraft and the environment. And once pilots have a quantifiable method with which to predict their aircraft's performance in any situation, they are better able to deal with the other challenges of high-density altitude flight. For more information on power management training, consider attending HAATS. Courses can be found on the Army Training Requirement Resources System, or ATRRS, under School Code 961A or at www.coloradoguard.army.mil/webpages/haats.htm.

Ride Smart — Ride Safe

BOB VAN ELSBERG
U.S. Army Combat Readiness/Safety Center
Fort Rucker, Ala.

Living to ride another day isn't always as easy as it sounds. What percent of your riding day can you relax your mind and not continuously watch for inattentive drivers? The truth is, as a rider, you have to be constantly looking for drivers who will cut you off, pull out in front of you or just flat run over you – all while swearing they never saw you. So is there a way to practice this skill without risking it all? There is now.

Recently, a new simulator-type training device was demonstrated at the U.S. Army Combat Readiness/Safety Center. The trainer, while lacking the movement of simulators, is set up with all the normal motorcycle controls. In front of the rider is an LCD screen — which is where the action happens. In the safety of a simulated environment, riders respond to several traffic scenarios while the trainer tracks and records their performance. Once the ride is over, the trainer provides a printout showing how well the rider handled the situations encountered. Working with coaches who assist them on the trainer, riders can talk through their mistakes and improve their skills.

More than anything, the trainer tests a rider's decision-making capabilities and judgment. The key is to get riders thinking ahead and avoiding problems, rather than having to improvise their way out of bad situations. USACRC experts believe this is a great way for a novice or non-rider — much less an experienced rider — to evaluate the decisions they have made.

Trainers provide reality checks for riders who might be a bit more at risk. While the training demonstration has riders obeying the speed limits, coaches could exercise the option of allowing riders to "let it all hang out." What they will experience is how little reaction time they have at higher speeds — and that's a lesson better learned on the trainer than on the streets. Beyond that, the trainer can simulate the open-road conditions, where many sportbike riders like to test their machine's capabilities.

The trainer provides the realism to show people where they might get into trouble on the road. For example, it can help riders realize how much they've got to slow down before entering a curve. If they blow it, riders get the chance to go back and reevaluate their decisions – a better option than learning the hard way.

Taking a test ride on a trainer can be a wise choice for prospective riders. The try-before-you-buy approach lets them see some of the challenges they'll face so they can decide whether they have the skills, coordination and judgment to ride safely. This might prevent Soldiers from buying a motorcycle and then feeling compelled to ride it primarily because of their investment.

The trainer is not only of value to new riders; it can also polish the skills of those who have been away from riding for a while, such as redeploying Soldiers. When these "rusty" riders get on the trainer, two things typically happen. The first is known as the "the déjà vu factor," which is when riders, after they've experienced traffic, begin automatically recalling close calls from their past. That automatically leads to the second thing riders experience — a raising of their "healthy level of paranoia" by two or three notches. The goal is to ensure riders constantly stay aware of the risks in traffic and use good judgment.

Another benefit of the trainer is its ability to put riders inside other vehicles so they can see themselves as other drivers see them. For example, coaches can put riders inside a tractor-trailer to show them how the vehicle's blind spots can hide them from the driver's view. That change of perspective can be sobering. Experts hope the trainers will create safer riders who make better judgments on the road.

For more information on training, contact the Driving Task Force at the U.S. Army Combat Readiness/Safety Center by calling (334) 255-3034, DSN 558-3034 or by e-mail at drivingtaskforce@crc.army.mil.

RIDIN' THE RANGE

EARNIE EAKINS
U.S. Army Combat Readiness/Safety Center
Fort Rucker, Ala.

Interested in conducting Motorcycle Safety Foundation training at your installation? Did you know that not just any parking lot will do? A lot may look good, but there are some concerns you need to be aware of before you select a motorcycle range. Here's a short list of things you need to consider:

• Training areas should be level, have a good paved surface free of impediments and have good drainage.

• Areas should have limited access and should be able to be closed off entirely during training.

• Standard range areas are 120 feet by 220 feet with an additional 40 to 80 feet of runoff (total surface area of 160 feet by 260 feet, or best – 200 feet by 300 feet).

• Alternate-sized areas can be approved, but will limit the number of riders per class.

• Information on motorcycle training is available at https://crc.army.mil/DrivingPOV.

A FIGHTING CHANCE

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The level of force Soldiers can use is often dictated by their operating environment. In some military operations, such as peacekeeping missions or non-combatant evacuations, the use of deadly weapons might be restricted. In those instances, hand-to-hand combatives training could be the difference between life and death.

According to Field Manual (FM) 3-25.150, *Combatives*, hand-to-hand combat is an engagement between two or more persons in an empty-handed struggle or with handheld weapons such as knives, sticks or projectile weapons that cannot be fired. Proficiency in hand-to-hand combat is one of the fundamental building blocks for training the modern Soldier.

Commanders know their Soldiers must participate regularly in combatives training. But where do they find subject matter experts? Many will turn to local martial arts "experts" – civilians who run local dojos. Unfortunately, most of these individuals have little or no expertise in Army doctrine, how wars are actually fought or, even more unsettling, risk mitigation.

For the past seven years, the U.S. Army Combatives School at Fort Benning, Ga., has provided subject matter expertise for the U.S. Army Infantry Center, the proponent agency for close-quarters combat. This arm of the modern Army combatives program runs a train-the-trainer course to produce Soldiers who can effectively advise commanders on how to establish and sustain safe, effective Army combatives programs.

The program trains instructors not only how to employ the Army's doctrine of fighting techniques, but also training strategies that allow those fighting techniques to be employed in support of a unit's mission essential task list. As these instructors progress, they learn how composite risk management is applied to training events. Also integral to the courses are developing controls specific to the instructors' home unit stations; a thorough study of FM 5-19, *Composite Risk Management*; local regulations; and exercises on documenting safety through Department of the Army Form 7566.

Our mission is providing commanders with the most knowledgeable, proficient combatives master trainers possible. However, the commanders' skills do not stop developing at the end of the courses. As periodic updates are made to emerging doctrine, the information is shared immediately and reiterated annually during the training provided at the All Army Combatives Symposium. A formal system of safety reporting and accountability is also in the process of being built.

Combatives training gives Soldiers courage and self-confidence and allows them to remain in control while under pressure. Leaders must ensure, however, their Soldiers receive the proper training. Hiring a local martial arts expert is often expensive, commonly ineffective, outside of Army doctrine and can put your troops at risk for serious injury or death.

If you have any questions regarding the Modern Army Combatives Program or the U.S. Army Combatives School, please contact the director, Matthew Larsen, or the chief trainer, Sgt. 1st Class David Barron, at (706) 545-2811 or DSN 835-2811, or visit our Web site at https://www.infantry.army.mil/combatives/.

> "**OUR MISSION** is **PROVIDING** commanders with the most **KNOWLEDGEABLE**, **PROFICIENT** combatives **MASTER TRAINERS** possible."

OVERWATER MISSIONS require DECONTAMINATION PREPAREDNESS

CHRIS TRUMBLE
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Fort Rucker, Ala.

Unit standing operating procedures (SOPs) should be developed for aircrew members and passengers who might become contaminated following an unintended ditching.

Ditching an aircraft could likely result in large quantities of fuel and oils being dumped into the water and the aircrew becoming contaminated while egressing. Fuels and oils are actually hydrocarbons, which are chemicals composed of hydrogen and carbon atoms. Military specification diesel fuel, hydraulic oil and creosote are all complicated hydrocarbon mixtures with lots of polyaromatic hydrocarbons (PAHs). These PAHs are known carcinogens and about the heaviest hydrocarbons known to evaporate and dissolve in water. And PAHs are not the only threat — depending on the mission profile, there could be other contaminates in the water. A recent example of this followed Hurricane Katrina, when hazardous materials contaminated the flood water in New Orleans. If a helicopter went down, the aircrew would have been exposed to these contaminates during emergency egress, along with those released by the aircraft.

Department of Army Pamphlet (DA Pam) 385-90, *Army Aviation Accident Prevention Program*, paragraph 2-12, states SOPs should be developed to address extreme environmental operations such as overwater missions. Additionally, Army Regulation (AR) 385-10, *The Army Safety Program*, requires development of an emergency plan with requirements for decontaminating aircrews. The SOPs should also include appropriate best-case and worst-case scenarios, including equipment, materials and training for these events. Decontamination SOPs should incorporate type of clothing, aviation life support equipment, flight helmet and night vision goggles and whether to decontaminate the piece of equipment or garment or dispose of it. Specific items, such as collection and disposal of displaced contaminants, as well as how it is done and who will perform the decontamination, are all considerations that need to be addressed.

> “**BEFORE** conducting **A MISSION** where overwater operations may be involved, **DECONTAMINATION** procedures **SHOULD BE** a **COMPONENT** of the **PRE-MISSION** briefing.”

A medical post-exposure evaluation should be conducted on all involved crewmembers as soon as practical and documented so this important step is not overlooked. The flight surgeon should be consulted and involved in the development of the SOP, to include requirements for prophylactic vaccinations against probable contamination threats. The range of potential hazards include infectious microorganisms (viruses, bacteria, fungi, algae, parasites), dermatoses (schistosome dermatitis, cymothoidism), intoxications (toxins produced by dinoflagellates), envenomation (venomous invertebrates, echinoderms, mollusks), as well as hazards contributed by man such as petroleum products and chemicals. The flight surgeon will be of great value in formulating a control program and keeping the medical recordkeeping system current.

Research and document what decontamination solutions can be used and how to acquire and where to store them. Development of an inspection, maintenance and disposal plan is also necessary for decontamination solutions and response equipment. If your plan involves multiple decontamination strategies based upon contaminate(s), a method to identify the exposure will be required. Who will identify the exposure and the method(s) used should be documented in the unit plans. The possibility of biological and/or radiological hazards should be considered in conjunction with the chemical and toxicological hazards presented by the aircraft.

Aircrew members who may be exposed to waterborne contamination should receive periodic safety training to familiarize themselves with the potential hazards. Possible subjects to cover during the training session include:

- Etiology of waterborne infectious diseases
- Geographic distribution of infectious agents and dangerous marine life
- Sources of water pollution
- Infectivity of microorganisms from aquatic environments
- Transmissibility of aquatic microorganisms
- Clinical symptoms of relevant diseases
- Symptomatic and specific treatment
- Vaccine prophylaxis
- Exposure incident reporting
- Use of protective clothing
- Medical surveillance programs
- Compliance with Occupational Safety and Health Administration, Bloodborne Pathogens Standard (29 CFR 1910.1030)

Training exercises on how to respond to an overwater accident should be conducted regularly and documented to show the date of the training and the names of the attendees. Training should include information on where decontamination zones will be established. It is critical to know who establishes, staffs and demobilizes these events so as to avoid confusion and provide a rapid and efficient response. Responders should be familiar with and understand what type of personal protective equipment is appropriate and how to wear, decontaminate and dispose of it.

Before conducting a mission where overwater operations may be involved, decontamination procedures should be a component of the pre-mission briefing. By ensuring decontamination is addressed in unit SOPs, you can reduce potential and actual exposures from occupational and environmental hazards encountered during military operations to as low as practicable. This not only meets the requirements of AR 11-35, *Deployment Occupational and Environmental Health Risk Management*, but will also minimize acute, chronic and delayed health effects within the context of mission parameters and Army composite risk management principles.«

RESOURCES FOR DEVELOPING THE OVERWATER MISSIONS SOP

SAFETY		
AR 385-10	The Army Safety Program	23 August 2007
DA Pam 385-10	Army Safety Program	23 May 2008
DA Pam 385-24	Army Radiation Safety Program	24 August 2007
DA Pam 385-30	Mishap Risk Management	10 October 2007
DA Pam 385-61	Toxic Chemical Agent Safety Standards	27 March 2002
DA Pam 385-69	Biological Defense Safety Program	31 December 1993
DA Pam 385-90	Army Aviation Accident Prevention Program	28 August 2007
ARMY PROGRAMS		
AR 11-34	The Army Respiratory Protection Program	15 February 1990
AR 11-35	Deployment Occupational and Environmental Health Risk Management	16 May 2007
MEDICAL SERVICES		
AR 40-13	Medical Support-Nuclear/ Chemical Accidents And Incidents	1 February 1985
AR 40-562	Immunizations and Chemoprophylaxis	29 September 2006
NUCLEAR, CHEMICAL WEAPONS AND MATERIEL		
AR 50-5	Nuclear Surety	1 August 2000
DA Pam 50-5	Nuclear Accident or Incident Response and Assistance (NAIRA) Operations	20 March 2002
AR 50-6	Chemical Surety	26 June 2001
DA Pam 50-6	Chemical Accident or Incident Response and Assistance (CAIRA) Operations	26 March 2003
AVIATION		
AR 95-27	Operational Procedures for Aircraft Carrying Hazardous Materials	11 November 1994
ENVIRONMENTAL QUALITY		
AR 200-1	Environmental Protection and Enhancement	13 December 2007

Watch Where You Point That Thing

CHIEF WARRANT OFFICER 2 MICHAEL RUTLEDGE
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Fort Lewis, Wash.

Weapons are designed to disable designated enemy personnel and, in the hands of properly trained Soldiers, accomplish this task exceptionally well. We must remember, however, a weapon is the instrument of its operator. It will dutifully shoot in the direction the operator points it. Therein lies the problem of negligent discharges, which are always unacceptable and tragic when a Soldier is injured or killed.

> "**IF** a **SOLDIER** should **BYPASS** every other procedural and mechanical **SAFETY MEASURE** other than making sure his **WEAPON** is always **POINTED** in a **SAFE DIRECTION**, it's **UNLIKELY** anyone will get **HURT** if the weapon **FIRES.**"

Soldiers in sustained combat operations must handle their weapons frequently. Before deployment, they must undergo repetitive, intensive training at home to prepare for the increased weapons exposure in theater. Manipulating both personal and vehicle-mounted weapon systems is pretty routine for most Soldiers, regardless their occupational specialty.

Since the beginning of fiscal 2000, 43 Soldiers have died in negligent discharge incidents. The majority of these didn't happen under stressful combat conditions; in fact, several occurred during clearing or cleaning in garrison environments. Perhaps what's most heartbreaking about negligent discharge incidents is, almost without fail, they are all preventable. Weapons safety is taught and emphasized on a daily basis from the beginning of a Soldier's career. How, then, are these negligent discharges occurring? One possibility is weapons handling has become an everyday occurrence for most Soldiers. An M4 rifle or M9 pistol is currently a basic component of the garrison and deployed uniforms.

Another possibility for these incidents is some first-level Leaders have become complacent in the repetitive nature of training their troops on weapons handling procedures. It's incumbent on Leaders at every level to ensure the basics of correct weapons handling are taught and enforced throughout their formations. Noncommissioned officers have an even greater responsibility since they're usually present during critical phases of weapons operations such as loading and clearing.

Several safety procedures and mechanisms exist to prevent negligent discharges. One that's often overlooked, however, is also almost 100 percent effective — basic muzzle awareness! If a Soldier should bypass every other procedural and mechanical safety measure other than making sure his weapon is always pointed in a safe direction, it's unlikely anyone will get hurt if the weapon fires. Of course, simply being careful about muzzle direction doesn't give a Soldier permission to skip the other steps of proper weapons handling. Leaders must also constantly reinforce muzzle awareness to the point it becomes habit for their Soldiers.

Likewise, Soldiers must get in the mind-set that any weapon, whether it's firmly locked in an armory, has its magazine out, is lying with its chamber open on a bunk or is being carried on a combat patrol, is capable of killing them. Soldiers must be trained to be skeptical no matter how benign a weapon looks. A weapon is a killing machine that's waiting for an opportunity to do so.

These principles apply to those working around weapons, as well. Bystanders losing situational awareness or taking proper weapons handling for granted could unexpectedly find themselves on the wrong end of a weapon. By remaining cognizant of their surroundings, other personnel will allow Soldiers to avoid potentially dangerous situations and also provide the opportunity for corrective training.

Current training and deployment requirements dictate Soldiers develop and maintain weapons proficiency. The law of averages indicates that as realistic training and combat deployments continue, so, too, will the relative occurrence of negligent discharges. It's unlikely we'll ever be able to prevent all negligent discharges, but proper training and reinforcement can limit the damage and injury they cause.

FYI

In fiscal 2007, the Army experienced 58 negligent discharge incidents, 17 of which occurred off duty and 41 on duty. Of these accidents, eight resulted in fatal injuries, with six occurring off duty and two on duty. To combat negligent discharges, Leaders must change the way Soldiers think about and handle weapons. Both Leaders and Soldiers have a responsibility to set the example for others and make on-the-spot corrections. Drill home that your Soldiers must THINK weapons safety!

T reat every weapon as if it's loaded.

H andle every weapon with care.

I dentify the target before you fire.

N ever point the muzzle at anything you don't intend to shoot.

K eep the weapon on SAFE and your finger off the trigger until you intend to fire.

an AVIATOR'S GUIDE to SIMULATOR SICKNESS

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What is Simulator Sickness?

Simulator sickness is a form of motion sickness that may be caused by physical motion, visual motion or a combination of the two. Symptoms of simulator sickness include:

Dizziness	Headache
Disorientation	Sweating
Warmth	Fatigue
Confusion	Vertigo
Eye Strain	Paleness
Nausea	Apathy

However, everyone reacts to simulator sickness differently. It's important to recognize the symptoms early before they become severe and impair training.

Who is at Risk for Simulator Sickness?

Aircrews that are new to the simulator are very susceptible to simulator sickness. Interestingly, aviators with high amounts of actual aircraft hours are also very susceptible. Experienced pilots are more likely to notice differences between the aircraft and simulator, and these differences contribute to simulator sickness. In addition, hangovers, sleep loss, poor health and emotional stress all increase your risk for simulator sickness.

How Can I Reduce Simulator Sickness?

You can reduce simulator sickness by altering your behaviors, the flight scenario or the flight simulator.

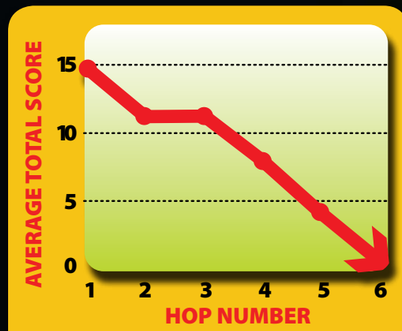
Behaviors. The best defense against simulator sickness is adaptation. Give yourself time to gradually get used to the new motion environment. Get plenty of rest and reschedule your training session if you are not in your normal state of fitness. Also, minimize head movements if you start to experience any symptoms. Ginger, mints, saltines and cool moving air all help ease the perception of symptoms.

Scenario. Early flight profiles should be brief with gentle maneuvers. Stay current; allow two to five days between training sessions for the most efficient adaptation. Also, avoid freezing the simulation in unusual maneuvers. If this can't be avoided, close your eyes before the freeze.

Simulator. Never use an uncalibrated simulator! Make sure computer-generated image projectors and screens are working properly and report any changes in simulator performance. Make note of any evidence of misalignment, double image, blurring or changing colors. Things like persistent flicker, color imbalances, asynchrony between controls and displays and/or changes in the feel of the controls all contribute to simulator sickness. Simulators with a wide field of view also increase the risk of simulator sickness.

What Do I Do if I Experience Simulator Sickness?

If possible, reduce your field of view or turn off the visuals and fly instruments. Shorten the length or terminate the session, if necessary. Give yourself enough time to recover before driving; there have been reports of pilots experiencing aftereffects such as visual flashbacks and dizziness up to six hours after simulator sessions! If eyestrain is a common problem, schedule simulator flights for morning periods. However, if headaches occur more frequently, schedule simulator flights in the afternoon.



Simulator sickness scores decrease as number of training sessions increase.
(From Kennedy , Lane, Berbaum and Lilienthal, 1993)

General Rules

- Know the symptoms of simulator sickness and look for signs in yourself and others.
- Allow yourself time to adapt to the new motion environment; frequent brief training sessions with mild maneuvers are better.
- Do not use the simulator for more than two consecutive hours and take a break, if possible.
- If you experience simulator sickness, give yourself time to recover before driving and restrict yourself from actual flight for at least 12 hours after symptoms disappear.

DID YOU KNOW?

In accordance with Army Regulation 40-8, *Temporary Flight Restrictions Due to Exogenous Factors Affecting Aircrew Efficiency*, aircrews exhibiting symptoms of simulator sickness will be restricted from actual flight for 12 hours after full resolution of symptoms.

HOW ARE WE DOING?

FISCAL 2008 MIDYEAR GROUND ACCIDENT REVIEW

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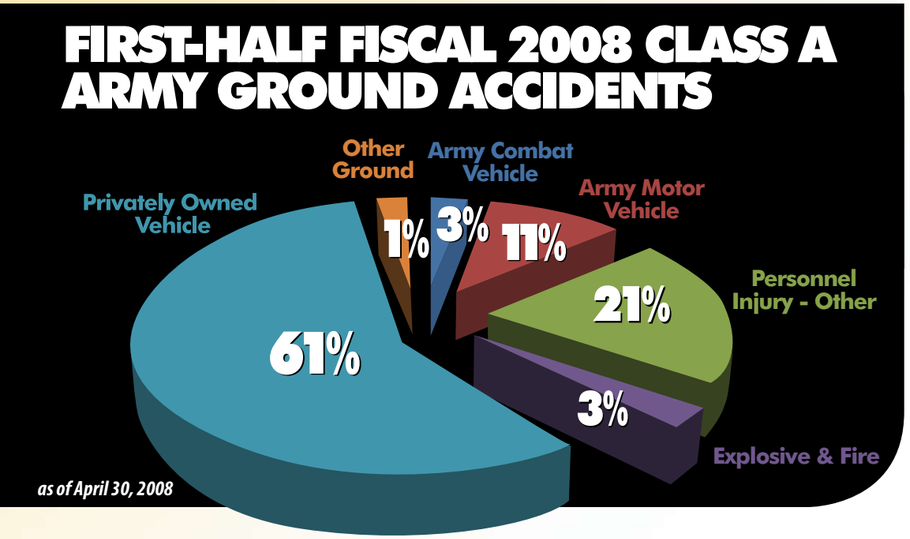
Fort Rucker, Ala.

Overall, Army Class A ground accidents and Army military fatalities for the first half of fiscal 2008 mirrored the numbers from the same time period the previous year. In some areas, we made positive strides, while other areas are in need of improvement.

During the first half of fiscal 2008, the Army experienced 101 Class A ground accidents, resulting in 91 Army military fatalities. These numbers were up one accident and down one fatality when compared to the same time period in fiscal 2007. This article will review only Class A accidents and Army military fatalities for the first half of fiscal 2008. However, information on the accidents experienced during this time is still filtering into the U.S. Army Combat Readiness/ Safety Center (USACRC), so the statistics, figures and findings may change in the coming months. As can be seen in the chart on page 28, 61 percent of the Class A ground accidents occurred in privately owned vehicles (POV);

21 percent were personnel injury–other (PI-O) accidents; 11 percent were Army Motor Vehicle (AMV) accidents; 3 percent were Army Combat Vehicle (ACV) accidents; and 3 percent were fire and explosive accidents. Of these accidents, 20 percent occurred during Operation Iraqi Freedom (OIF) or Operation Enduring Freedom (OEF).

The picture is similar when looking at the fatalities. POV accidents accounted for 67 percent; PI-O accidents accounted for 20 percent; AMV accidents accounted for 10 percent; and fire and explosive accidents accounted for 3 percent. POV accidents will be discussed further in the POV/POM midyear review on page 30.



Personnel Injury-Other*

There were 21 Class A PI-O accidents during the first half of fiscal 2008, resulting in 18 fatalities. These numbers were slightly up from the 18 Class A accidents and 17 Army military fatalities for the first half of fiscal 2007.

On Duty

This year's 10 on-duty accidents resulted in eight fatalities, compared to three accidents and three fatalities for the first half of fiscal 2007. Three of this year's fatalities involved Soldiers being pinned by vehicles, two of which occurred during maintenance activities. One Soldier was pinned between vehicles during a post-exercise clean-up, and one Soldier was pinned under a vehicle when it shifted on its jacks. The other fatality occurred when a Soldier was pinned between the bucket of a front-end loader and the roof of a building he was attempting to access with the bucket.

Two fatalities involved weapons handling – one the result of a negligent discharge and the other due to friendly fire. The other three on-duty PI-O fatalities involved parachuting, physical training and an electrocution. Five of this fiscal year's fatalities occurred during support of OIF or OEF.

Off Duty

The remaining 11 Class A PI-O accidents occurred while the Soldiers were off duty and resulted in 11 Soldier deaths and a permanent total disability injury. This is four fewer accidents than for the same time period last year.

This year's off-duty PI-O accidents fall into four categories: struck by a vehicle, falls, water-related and other accidents. Four Soldiers were struck and killed by vehicles – two by trains and two by POVs. Two Soldiers fell to their deaths, one from a beach condo balcony and the other from a cliff while hiking. Water-related accidents killed one Soldier while swimming, and another Soldier suffered a permanent total disability in an alcohol-related accident after diving into shallow water and striking an obstacle.

In the other accidents, a Soldier was killed in an alcohol-related incident when he shot himself in the neck with a handgun; a Soldier died when the backhoe he was operating overturned on a slope; and a Soldier died while skateboarding with his son when they apparently fell and the Soldier suffered a head injury.

Army Motor Vehicle

AMVs accounted for 11 Class A accidents during the first half fiscal 2008, resulting in nine Army fatalities. These numbers were down from the 13 Class A accidents and 15 fatalities experienced during the first half of fiscal 2007. Eight of this year's accidents, which resulted in seven fatalities, occurred during OIF/OEF.

Seven of this year's accidents involved the HMMWV, accounting for six fatalities. This was three fewer HMMWV fatalities than for the first half of fiscal 2007. Six of the HMMWV accidents occurred during OIF/OEF, resulting in five fatalities.

The M1114 accounted for three of the fiscal 2008 accidents and three fatalities; the M1151 accounted for two accidents and one fatality; and the M997 accounted for one accident and one fatality. Six of this year's HMMWV accidents involved rollovers: three involved the M1114 and two involved the M1151.

Army Combat Vehicle

ACVs accounted for three Class A accidents, but resulted in zero fatalities during the first half of fiscal 2008. These numbers were down significantly from the 12 Class A accidents and seven fatalities for the same time period in fiscal 2007. The vehicles involved in this year's accidents were a field artillery ammunition support vehicle (FAASV), a Stryker-series vehicle and an M1117 Armored Security Vehicle (ASV). Two of these accidents (Stryker and FAASV) involved rollovers while towing disabled vehicles. One of this year's accidents occurred during OIF.

Explosive and Fire

Explosive and fire accidents accounted for three Class A accidents during the first half of fiscal 2008, resulting in three fatalities. There was one fire and two explosive accidents, which was one more than for the same time period in fiscal 2007.

All three of these accidents occurred in support of OIF. One explosion and fatality involved a Soldier picking up unexploded ordnance during police call, while the other explosion and fatality occurred when static electricity from the rotors of a helicopter caused blasting caps from a cache to detonate.

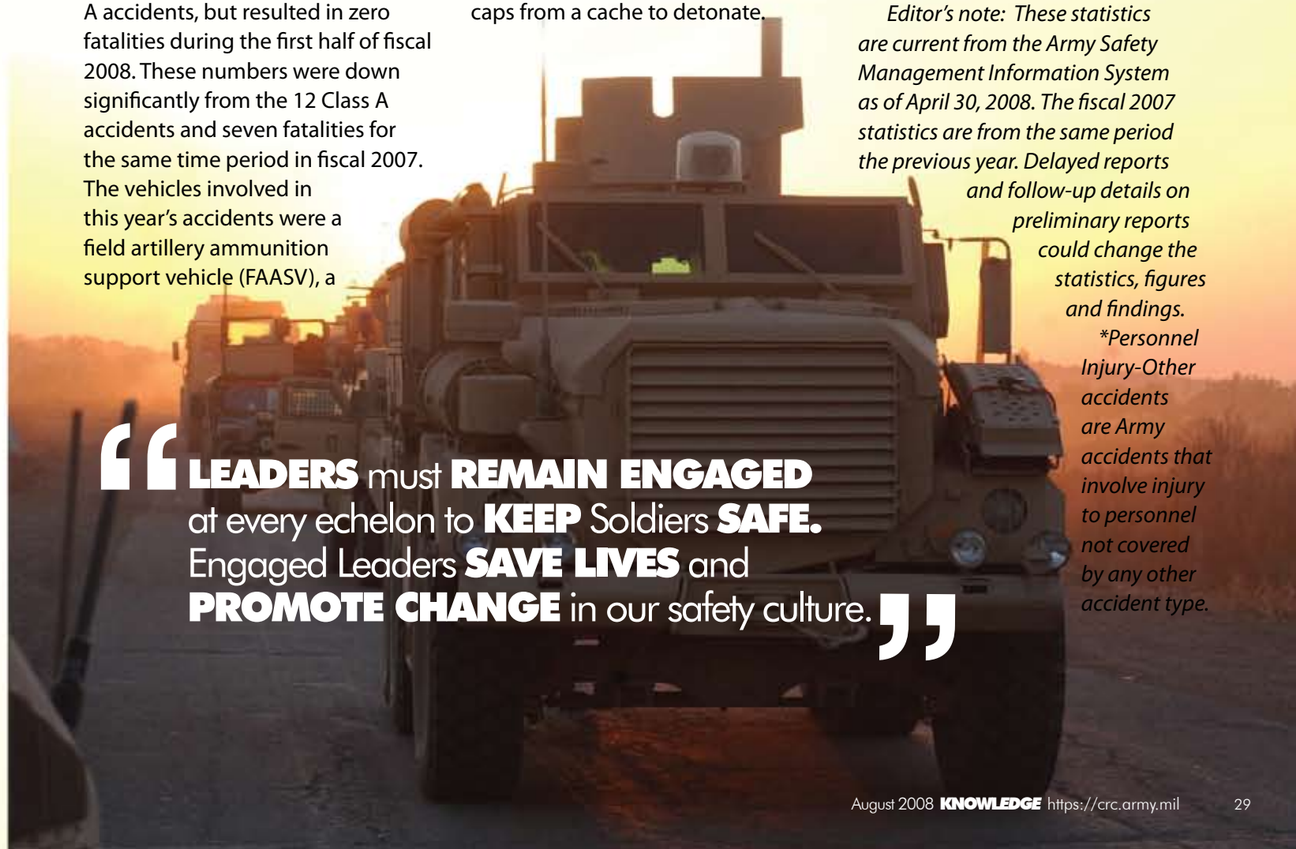
Conclusion

Review of the overall Class A ground accident data for the first half of fiscal 2008 shows little change compared to last year. While we had fewer AMV and ACV accidents and fatalities, fire and explosive and PI-O accidents both increased slightly. Within PI-O accidents, off-duty accidents were down, but on-duty accidents more than tripled.

Leaders must remain engaged at every echelon to keep Soldiers safe. Engaged Leaders save lives and promote change in our safety culture. The USACRC has a number of tools to help Leaders and Soldiers manage risks and prevent needless losses. Take a moment and visit the USACRC's Web site at https://crc.army.mil to view some of these products. Army Safe is Army Strong!

Editor's note: These statistics are current from the Army Safety Management Information System as of April 30, 2008. The fiscal 2007 statistics are from the same period the previous year. Delayed reports and follow-up details on preliminary reports could change the statistics, figures and findings.

**Personnel Injury-Other accidents are Army accidents that involve injury to personnel not covered by any other accident type.*



HALFWAY THERE IN '08

FISCAL 2008 MIDYEAR POV/POM ACCIDENT REVIEW

GLEN DAVIS
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Fort Rucker, Ala.

We're now at the halfway point of fiscal 2008 and it's time to see how we're doing and how we compare with the same time period last fiscal year.

Off-Duty Class A Privately Owned Vehicle (POV) Accidents

This year, the outlook for POVs is not promising, with 62 Class A POV accidents claiming the lives of 61 Soldiers and permanently totally disabling three others. Compared to the same period last year, we have experienced eight more Class A accidents, a 15-percent increase.

OFF-DUTY CLASS A POV ACCIDENTS

	Fiscal 2007	Fiscal 2008	Increase/Decrease
# of Class A Accidents	54	62	+8
Soldiers Killed & Permanently Disabled	19	28	+9

as of April 30, 2008

Vehicles

The good news this fiscal year is we have had six fewer Class A Jeep/sport utility vehicle (SUV) accidents, three fewer pickup truck accidents and one less van accident. However, the bad news is we have had nine more each Class A motorcycle and sedan accidents and added an all-terrain vehicle (ATV) accident. Overall, we have had an increase of eight Class A accidents compared to the same time last fiscal year.

OFF-DUTY CLASS A POV ACCIDENTS

	Fiscal 2007	Fiscal 2008	Increase/Decrease
Motorcycle	12	21	+9
Sedan	19	28	+9
ATV	0	1	+1
Van	2	1	-1
Truck	9	6	-3
Jeep/SUV	12	5	-7
Total	54	62	+8

as of April 30, 2008

Weekends

Weekends have not been kind to Soldiers so far this year, with 36 Class A POV accidents compared to 26 on weekdays. Compared to last year, weekend accidents have climbed nearly 30 percent. Motorcycles lead this uptrend with 14 accidents – double last year's number.

Single-Vehicle Versus Multi-Vehicle Accidents

Another adverse upswing this fiscal year is the increase in single-vehicle accidents. At last year's midpoint, there had been 24 multi-vehicle and 30 single-vehicle Class A accidents. This year, multi-vehicle accidents have fallen by two while single-vehicle accidents jumped from 30 to 40 – a 33-percent increase. Single-vehicle motorcycle accidents led this upswing, going from four last year to 14 this year – a 250-percent increase.

Most single-vehicle accidents occurred on Saturdays and Sundays and involved Soldiers traveling at excessive speeds and running off the road and striking objects such as guardrails or trees. The reasons why drivers ran off the road are often unknown or not reported.

OFF-DUTY CLASS A POV ACCIDENTS

	Fiscal 2007	Fiscal 2008	Increase/Decrease
Weekends	28	36	+8
Weekdays	26	26	0
Total	54	62	+8

as of April 30, 2008

Speeding and Alcohol

Speed-related crashes are those where drivers were racing, driving too fast for conditions or exceeding the posted speed limit. Speeding is one of the most prevalent factors contributing to traffic crashes. Speeding reduces a driver's ability to respond to changing conditions or steer safely through curves or around objects on the roadway. Speeding also increases stopping distances and reduces driver reaction time. While, overall, there was one less speed-related Class A accident compared to last year, there were five more speed-related motorcycle accidents and four more speed-related sedan accidents. These increases nearly offset the decreases in other vehicles.

SPEED-RELATED OFF-DUTY CLASS A POV ACCIDENTS

	Fiscal 2007	Fiscal 2008	Increase/Decrease
Motorcycle	8	13	+5
Sedan	8	12	+4
Truck	3	1	-2
Jeep/SUV	10	2	-8
Total	29	28	-1

as of April 30, 2008

Alcohol-related crashes are those where drivers or riders consumed alcohol within a few hours before the crash or when blood alcohol levels were above the legal limit. Alcohol reduces a driver's ability to recognize and react to dangerous situations. The number of alcohol-related Class A accidents decreased by three, compared to 11 at last year's midpoint. However, alcohol-related motorcycle accidents increased by three, partially offsetting the decreases with other vehicles.

ALCOHOL-RELATED OFF-DUTY CLASS A POV ACCIDENTS

	Fiscal 2007	Fiscal 2008	Increase/Decrease
Motorcycle	1	4	+3
Truck	0	1	+1
Van	1	0	-1
Jeep/SUV	3	0	-3
Sedan	6	3	-3
Total	11	8	-3

as of April 30, 2008

Motorcycles

Only once during the last 33 years have there been as many Class A motorcycle accidents at midyear as there are this fiscal year. So far this fiscal year, 21 motorcycle accidents have claimed the lives of 20 Soldiers and left one Soldier permanently totally disabled.

When it comes to Class A motorcycle accidents, sportbikes lead all other types of motorcycles by a substantial margin. In addition, compared to last year, sportbike accidents have increased at a faster rate than other motorcycle types. So far this year, sportbikes have been involved in 13 Class A accidents, an increase of five – or 63 percent – compared to the same period last year.

MOTORCYCLE TYPE OFF-DUTY CLASS A POV ACCIDENTS

	Fiscal 2007	Fiscal 2008	Increase/Decrease
Sport	8	13	+5
Cruiser	1	4	+3
Not Reported	3	4	+1
Total	29	28	-1

as of April 30, 2008

Helmets and Seat Belts

According to a December 2007 report[1] from the National Highway Traffic Safety Administration (NHTSA), motorcycle helmets saved 1,658 lives in 2006. Despite their proven life-saving ability, some Soldiers still choose not to wear their helmets. Of the 21 Soldiers killed or permanently totally disabled in motorcycle accidents, four (19 percent) were not wearing Department of Transportation (DOT)-approved helmets and three of these were riding sportbikes.

This NHTSA report also states that seat belts saved an estimated 15,383 lives in 2006 and saved more than 75,000 lives during the five-year period from 2002 through 2006. Despite the proven benefits of seat belts, some Soldiers continue to drive without them. Of the 42 Soldiers killed or permanently totally disabled in passenger vehicle accidents, 14 were not wearing seat belts, with 12 of these being either partially or completely ejected from their vehicle.

Conclusion

The increase in Class A off-duty POV accidents – particularly motorcycle accidents – represents an alarming and unacceptable trend. The causes of these accidents are not new or different and the use of seat belts or DOT-approved helmets could have saved the lives of some of these accident victims.

In order to reduce these accidents, Soldiers need to slow down and adhere to known policies, procedures, rules, regulations and laws. Soldiers must have the self-discipline to do the right thing – both on and off duty. Engaged Leaders emphasizing safety and carefully reviewing Soldiers' travel plans can go a long way toward turning these accident trends around.

References:

[1]National Highway Traffic Safety Administration, National Center for Statistics and Analysis, Traffic Safety Facts, December 2007.

Editor's note: These statistics are current from the Army Safety Management Information System as of April 30, 2008 and describe the first and second-quarter accidents for this fiscal year. The fiscal 2007 statistics cover exactly the same period from the previous year. Delayed reports and follow-up details on preliminary reports could change the statistics, figures and findings.

INDISCIPLINE BY RANK AND AGE, FISCAL 2008

Sum of Fatal Army Personnel Count

AGE	E4	E6	E7	O3	*Total*
22	1				1
23	1				1
22	2				2
25	1				1
26		1			1
27	1	2		1	4
33		1			1
34			1		1
35	1				1
Total	7	4	1	1	13

as of April 30, 2008

Note: The shaded areas represent the "center of mass." The rank observations cluster strongly in the E-4 to E-6 range. There is more observed dispersion among the ages. This suggests focusing on the rank more than the age, which also means that ages and ranks are not as correlated with each other as originally thought.

LESSONS FOR LEADERS

GLEN DAVIS
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Based upon principles put forward by organizational theorists Karl Weick and Kathleen Sutcliffe[1], the following are some actions engaged Leaders can take to make their units safer, more reliable and resilient:

▪**Make your intentions clear.** Restate your goals in the form of mistakes that must not occur. Non-negotiable actions – such as never allowing vehicles to move until all personnel are wearing seat belts or riders are wearing DOT-approved motorcycle helmets and personal protective equipment – must be stated clearly.

▪**Create awareness of vulnerability.** Young Soldiers often overestimate their personal ability and underestimate their personal risk. Ask them, "What are the greatest hazards you encounter and what are you doing about them?" and expect thoughtful answers.

▪**Create an error-friendly learning culture.** Cultivate a climate where people share their experiences and learn from each other's mistakes. Ensure that this learning travels up, down and throughout the chain of command.

▪**Avoid complacency, especially when things are going well.** Be suspicious of good news. Success tends to build self-satisfaction and acceptance of the status quo, all the while slowly reducing the margins of safety.

▪**Reassess, reassess, reassess.** Stay ahead of changing conditions. Revise assessments as situations develop.

▪**Spend time on the front end of operations.** Face-to-face contact helps ensure clarity and impact.

▪**Set the example.** Nothing will undermine your credibility faster than violating your own commands, directions or principles.

▪**Seek out those who really know what is going on.** Somebody always knows, so be a good listener.

▪**Speak up – just because you see something doesn't mean that everyone does.** Never assume everyone else sees what is obvious to you. It only takes one Soldier failing to get something right to put everyone around him in danger.

▪**Be wary of inflating your own expertise.** Self-important people know less than they think, are less curious than they need to be and are more vulnerable to surprises because they aren't prepared.

Accident prevention is a tireless, serious undertaking and every Army Leader must be determined to end these tragic and needless off-duty accidents. Practicing engaged hands-on leadership will make a difference.

References: [1]Karl E. Weick and Kathleen M. Sutcliffe, *Managing the Unexpected: Resilient Performance in an Age of Uncertainty*, 2nd ed., John Wiley and Sons, Inc., Hoboken, N.J., 2007.

LET'S CHECK OUR PROGRESS

FISCAL 2008 AVIATION MIDYEAR ACCIDENT REVIEW

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Fort Rucker, Ala.

We're halfway through fiscal 2008, and it's time to assess how the Army is doing in regard to aviation accidents. Although we're engaged in the Global War on Terrorism, it's vitally important that we continue to monitor our progress and ensure we are all using composite risk management (CRM) to prevent accidental losses. Let's take a quick look at Army aviation's accident trends for the first half of fiscal 2008.

The U.S. Army Combat Readiness/Safety Center database shows manned aircraft accidents mirror last year's numbers with 13 Class A and B accidents. Accidents include three Army Soldiers and four U.S. Air Force (USAF) Airmen. Of these accidents, 85 percent occurred during the day and nearly half occurred in Iraq. The chart on page 35 compares the number of accidents and fatalities for each aircraft type involved. Brief summaries of these accidents follow.

UH/MH-60 Black Hawk

The Black Hawk community accounted for five accidents during the first half of fiscal 2008: four Class A and one Class B. All seven fatalities occurred in this type aircraft. Three of the five accidents occurred in Iraq.

- An accident in Italy resulted in the deaths of two U.S. Army pilots and four USAF Airmen.
- A Soldier was killed during a night troop insertion mission in brownout conditions when he exited the aircraft before touchdown and fell roughly 30 feet.
- During final approach in instrument meteorological conditions, a UH-60L incurred a lightning strike, which then triggered a stabilator malfunction. The aircraft landed safely, but received Class B damage.
- The aircraft main rotor blade made contact with a persistent threat detection system aerostat cable during departure from a forward operating base at night. This resulted in tip cap damage to one UH-60L main rotor blade and Class A damage to the aerostat.
- The aircraft main landing gear sank into soft ground during touchdown to an unimproved surface and the nose section subsequently contacted a rocky area, causing airframe damage.

AH-64A/D Apache

The Apache community had no reported Class A accidents; however, there were four Class B accidents during this time frame. Half of these accidents occurred in Iraq.

- A bird strike occurred during cruise flight at 1,000 feet above ground level, causing Class B aircraft damage.
- A rotor overspeed occurred while at a 5-foot hover. Rotor RPM (NR) went to 120 percent for five seconds, requiring replacement of the main and tail rotors.
- A crew experienced a generator failure in flight, which introduced smoke into the cockpit. During shutdown, the main rotor blade made contact with the pilot night vision system (PNVS), causing Class B damage.
- A maintenance crew was performing an aircraft run-up when smoke was observed coming from the target acquisition and designation system (TADS)/PNVS area. Inspection revealed burn damage to the TADS, turret sensor sight, electronic control unit and power supply.

OH-58D Kiowa Warrior

The Kiowa Warrior community was involved in two Class A accidents with no fatalities: one tree strike and one during a maintenance test flight.

- An OH-58D contacted trees during a day, low-level flight, went into a spin and descended to ground impact. The aircraft was destroyed, but no major injuries were incurred.
- A Kiowa Warrior incurred a low rotor condition during a main rotor RPM auto-rotational check and impacted the runway. The aircraft was destroyed and the maintenance test pilot and maintenance technician suffered recoverable back injuries.

UH-72A Lakota

The UH-72 was involved in one Class A accident, which occurred during a simulated single engine failure (SEF). The standardization pilot had demonstrated the maneuver satisfactorily to the ground just before the accident, but crashed during the second SEF demonstration due to an excessive vertical descent caused by rapid reduction of the collective. One pilot suffered minor injuries and the other was not injured.

Fixed-Wing

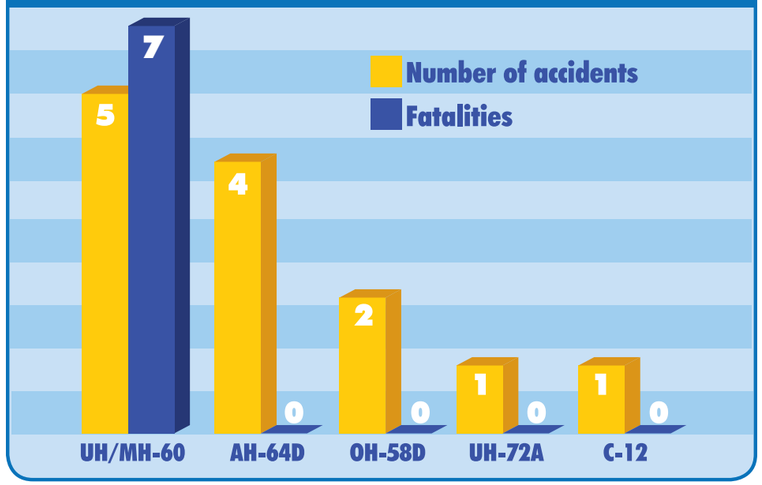
The C-12 was involved in one Class B accident in which the propeller contacted the runway when landing. There were no reported injuries.

Conclusion

When comparing Class A and B accidents, the first half of fiscal 2008 is similar to fiscal 2007. Fortunately, very few of these accidents resulted in fatalities or destroyed aircraft. The second half of the year is historically when we have the majority of our accidents. We must all work diligently to prevent the surge of accidents from occurring. Engaged leadership and consistent CRM will help make this a reality.

Editor's note: These statistics are current from the USACRC database as of April 23, 2008. The fiscal 2007 statistics cover exactly the same period from the previous year. Delayed reports and follow-up details on preliminary reports could change the statistics, figures and findings.

CLASS A-B AVIATION ACCIDENTS DURING FIRST HALF OF FISCAL 2008



as of April 23, 2008

LOST

AVIATION

AH-64

CLASS B D MODEL

During post-phase test flight, the crew experienced loss of power and a suspected compressor stall. The crew was able to put the aircraft down on the runway without further damage, but post-flight inspection revealed over-temp of the No. 1 engine (985 C for one second), as well as No. 2 engine over-torque (160 percent for four seconds). Both engines were replaced, as well as the transmission, nose-gear boxes and driveshafts.

CLASS C

Departing the runway, a bird struck the aircraft. No vibration or abnormalities were felt by the crew after the strike. The crew continued the mission. Once the crew shut down for refuel, they noticed the tip cap was damaged on the No. 3 main rotor blade. The crew then called for a one-time flight back to the airport. No further complications were noticed during the flight back. Maintenance replaced the main rotor blade.

CLASS E

Upon landing at the stopover destination, the through-flight check revealed the No. 2 engine nacelle was unsecured. The engine nacelle sustained damage to the extent that numerous structural ribs had to be replaced.

CH-47

CLASS C D Model

The aircraft touched down short of the landing pad with forward speed, and the aft landing gear contacted the ground and separated.

WHAT HAPPENED TO AIRCREW COORDINATION?

CLASS E

The aircraft was conducting sling-load operations to move an M198 Howitzer from one forward operating base (FOB) to another. While placing the load on the ground at the objective, the aircraft encountered extensive brownout conditions and the pilots lost visual reference with the ground and surrounding horizon. The crew chief and flight engineer confirmed the aircraft was drifting with the load in contact with the ground. The pilot in command elected to release the load and execute a go-around.

OH-58

CLASS B A Model

The crew experienced loss of torque, followed by a LOW-ROTOR audio indication. The aircraft touched down hard, striking some trees during its descent. Damage occurred to the rotor system, tail boom, stabilizer, tail rotor, vertical fin and landing gear. The crew and passenger were able to exit without assistance and suffered only minor injuries.

CLASS A D(R) Model

While conducting terrain flight, the trail aircraft of a flight of two struck the ground with its tail rotor, causing the aircraft to crash.

CLASS D

During flight, the left armor side panel unlatched and opened. The bolts retaining the armor panel tore from their mounts and the panel fell off the aircraft. The crew returned the aircraft to the nearest FOB and continued the mission in another aircraft. Maintenance repaired the bolt mounts area and installed another armor side panel.

CLASS E

The aircraft was conducting forward arming and refueling point (FARP) operations. Armament personnel had loaded the .50-caliber machine gun and attempted to throw the empty ammunition can clear of the aircraft when it contacted the main rotor blade. The ammunition can came to rest 25 feet from the aircraft. The crew shut down the aircraft and notified maintenance.

UH-60

CLASS A A Model

The crew experienced a fuel leak and subsequent fire while conducting a crashworthy external fuel system fuel-transfer check during run-up for flight. The crew conducted a normal shutdown before egress. The aircraft was consumed by fire.

WHY WEREN'T EMERGENCY SHUTDOWN PROCEDURES CONDUCTED?

CLASS C L Model

Upon post-flight inspection, the crew found a 4-inch by 1-inch hole in the tail rotor gear box cover, and a bird was found in the No. 2 engine inlet. A part of the bird or possibly a second bird may have struck the tail rotor gear box cover, causing the dzus fasteners to fail and the tail rotor cover to make contact with the driveshaft. There were no noticeable changes in aircraft performance or indications of a bird strike. During the engine teardown, there was damage found to the compressor section on the first stage blades. Damage was also found on the section IV driveshaft.

CLASS D

Chalk 3 of a multi-ship formation attempted to land into the wind to a large, open, sandy area with slightly sloping terrain. Upon touchdown, Chalk 3 landed with a high rate of descent, resulting in the forward third of the aircraft's belly striking the ground, stroking off both upper and lower right wheel strut cylinders and

ARMY AIRCRAFT LOSSES

Fiscal 2002 to Present
through June 30, 2008

Hostile/ Non-hostile

AH-64A/D	11/51
U/MH-60A/L	9/29
C/MH-47	8/18
OH-58D	11/28
TOTAL	39/126

ARMY GROUND LOSSES

Fiscal 2008
through June 30, 2008

Class A Fatalities

AMV	15/12
ACV	6/6
PERSONNEL INJURY includes weapons handling accidents	33/28
FIRE/ EXPLOSION	3/3
PROPERTY DAMAGE	2/0
TOTAL	59/49

damaging the right wheel strut faring. Subsequent inspection also found damage to the main rotor droop stops and tail wheel strut.

WAS A PROPER CROSSCHECK USED AND THE APPROACH MADE AT THE RATE OF A BRISK WALK?

CLASS D

While in a formation flight of two at 120 knots and 300 feet above ground level on a combat passenger shuttle mission, the passenger jettisoned the left-hand side cabin windows. The passenger was reaching for his bag, which was caught on the emergency release handle. When he pulled the bag, it released the windows. The crew did not recover the windows due to the threat in the area, but made a safe landing at the nearest FOB. The crew completed the mission and returned to home station, where the windows were replaced.

CLASS E

While performing air assault operations to an approved nonstandard landing zone, the aircraft's rotor wash lifted debris off the ground and made contact with the tip cap of the main rotor blade. No other damage was found.

UAS

CLASS B

The UAS experienced an engine failure shortly after launch. The vehicle was recovered following impact and deemed destroyed.

CLASS B

The UAS entered into uncontrolled flight following an uncommanded roll. The air vehicle operator lost video link and the aerial vehicle crashed, resulting in total destruction.

CLASS C

The UAS was returning from a routine mission after five hours of flight when the ground control station data indicated an erratic voltage reading. The tactical automated landing system (TALS) acquired the vehicle and the approach and landing were normal until it touched down. When the vehicle touched down, the TALS issued the cut engine command. The vehicle turned left about 45 degrees, ran off the runway and came to rest in a ditch.

CLASS C

The UAS veered off course about 10 minutes into flight. Unable to reestablish course, the vehicle crashed and could not be recovered.

GROUND

CLASS A

Two Soldiers were killed when their Mine Resistant Ambush Protected (MRAP) vehicle rolled over into a canal as it crossed a culvert. Seat belt use was not reported.

CLASS B

An M1117 Armored Security Vehicle was damaged when it caught fire during a scheduled road test. Attempts to extinguish the fire were unsuccessful.

CLASS A

A Soldier was killed when the M984/A1 HEMTT wrecker he was driving overturned on a highway access ramp. The driver and a passenger were both ejected. Seat belt use was not reported.

A Soldier was killed when an M923A2 carrying two 600-gallon fuel pods overturned when the driver attempted to negotiate a curve on a gravel road. The driver was injured and taken to a local medical center. Seat belt use was not reported.

A Soldier was killed when he was pinned between two vehicles. The Soldier had exited his M1070-series Palletized Loading System (PLS) at a range parking area to retrieve an item when he was pinned between his vehicle and another PLS being maneuvered into parking. A ground guide was not used.

ARE YOUR DRIVERS AND OTHER UNIT PERSONNEL TRAINED TO STANDARD IN THE CORRECT USE OF GROUND GUIDES AND GROUND-GUIDING OPERATIONS?

CLASS B

A Soldier suffered a permanent partial disability injury when he was ejected from an M1151 that overturned as the driver was attempting to avoid potholes. The Soldier, who was serving as the gunner, was wearing his gunner restraint.

Other

CLASS A

A Soldier suffered a permanent total disability when his privately owned vehicle, which he was driving on an official run, was T-boned by a pickup. The Soldier was medically evacuated to a local trauma center.

Personnel Injury

CLASS C

A Soldier suffered fractures to her leg while executing the single-rope bridge. The Soldier did not perform the proper fall technique by tucking her knees to her chest and locking her arms around her legs. Instead, she fell with her legs apart, which caused her injury.

DRIVING

CLASS A

A Soldier was driving at a high rate of speed when he lost control, left the road and overturned. The Soldier was not wearing his seat belt and was ejected during the crash and died at the scene.

A Soldier was driving up a highway onramp when he lost control of his sport utility vehicle (SUV). The SUV crossed four traffic lanes, went up an embankment, rolled over and landed on its wheels. The Soldier was not wearing his seat belt and was pronounced dead at the scene.

A Soldier was riding as a passenger in her vehicle when it was involved in a head-on collision with a vehicle going the wrong way on a divided highway. The Soldier and her unborn child were killed upon impact, and the driver of her vehicle was critically injured.

A Soldier was driving his vehicle when he was involved in a head-on collision with a vehicle that crossed the center line. The Soldier was fatally injured.

A Soldier was driving in heavy fog conditions when her vehicle crossed the median and collided head-on with an SUV. The Soldier suffered fatal injuries.

HAVE YOU WARNED YOUR SOLDIERS TO REDUCE SPEED IN FOG? LIMITED VISIBILITY CAN CAUSE DRIVERS TO LOSE SITUATIONAL AWARENESS ON THE ROAD.

A Soldier was entering a wet roadway when he lost control of his vehicle, went off the road and overturned. The Soldier was not wearing a seat belt and was thrown from the vehicle and killed.

Soldier was driving his vehicle in heavy rain when he lost control, crossed the median and collided with a tractor-trailer. The Soldier was fatally injured on impact.

A Soldier was driving his pickup in the left lane of a four-lane highway when a pickup in the right lane blew a tire, went out of control, crossed the lanes and forced the Soldier's vehicle across the median and into oncoming traffic. The Soldier then collided head-on with another vehicle and was pronounced dead at the scene.

POM

CLASS A

A Soldier was operating his motorcycle when he lost control on a curve, crashed and suffered fatal injuries. Ten minutes before the accident, the Soldier had been given a warning for traveling almost 30 mph above the posted speed limit. Although the Soldier was wearing a helmet, he had not attended the Army-approved Motorcycle Safety Foundation training and did not have a current motorcycle license.

A Soldier was operating his motorcycle when he struck an SUV that turned in front of him. During the impact, the Soldier's helmet came off and he was thrown from his bike, suffering fatal injuries.

A Soldier was operating his motorcycle when he collided with a vehicle that had turned into his path. The Soldier, who had been issued his motorcycle permit two days before the crash, was not wearing a helmet, even though one was required by state law and Army regulation. The Soldier was transported to a trauma center, where he died.

Editor's note: Information published in the accident briefs section is based on preliminary loss reports submitted by units and is subject to change. For more information on selected accident briefs, e-mail knowledge@crc.army.mil.

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GRAT

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ARMY SAFE IS ARMY STRONG

THE GREAT OUTDOORS: TIPS FOR A SAFE HUNTING SEASON p. 28

KNOWLEDGE

VOL 2 SEPTEMBER 2008

OFFICIAL SAFETY MAGAZINE OF THE U.S. ARMY

ARE YOU PREPARED FOR WINTER? p. 5

A SPORTING CHANCE p. 12

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OFFICIAL SAFETY MAGAZINE OF THE U.S. ARMY

contents

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FROM THE DASAF

"Another approach **I SUGGEST** and **ASK** you to explore involves **GENERATION X-ERS** and **BOOMERS** using some '**OUT OF THE BOX**' **THINKING** themselves."

"OUT OF THE BOX" THINKING IN ORDER TO SAVE LIVES

Our Army is doing great. We know exactly how many accident fatalities we experience; we don't, however, know how many we prevent. And the latter is where the good news stories are found. But, we, as an Army, can do better in both areas.

Every day and everywhere I go, I see firsthand engaged Leaders making a positive impact in the lives of Soldiers, Families and Civilians. Where I believe we experience a breakdown is at two critical points: the level of understanding and the magnitude of our engagement strategy.

Allow me to explain: Several research institute surveys define cultural generations by categorizing groups based on various criteria and expectations. Researchers allow different generation groups to select from a defined list those criteria they believe best categorize and define their age groups. This simplification of generations provides Army Leaders with a window of clarity to gain a basic understanding of our Soldiers.

For brevity, let's use the "2008 World of Work" survey results discussed in the *Kansas City Star* on July 7, 2008. This survey samples a segment of the U.S. population based on character traits and ages. In my opinion, there is no set of criteria that is completely descriptive of any generation, but the likenesses I see in our Army's culture are amazingly similar.

The characterization of generations by age, matched against the top five traits chosen from 31 character traits, are:

Gen Y-ers (born 1980 - 1990)
- Make personal friends at the workplace
- Sociable
- Think out of the box
- Open to new ideas
- Friendly

Gen X-ers (born 1965 - 1979)
- Confident
- Competent
- Willing to take responsibility
- Willing to put in the extra time to get the job done
- Ethical

Boomers (born 1946 - 1964)
- Strong work ethic
- Competent
- Ethical
- Ability to handle a crisis
- Willing to take on responsibility
- Good communication skills

Mature (born 1925 - 1945)
- Strong work ethic
- Ethical
- Committed to the company
- Competent
- Confident

Why is any of this important and why do I take you through this exercise? I consider this instructional in crafting solutions to lessen the losses of our Generation Y Teammates. Further, our Generation Y brothers and sisters are, according to the number of recorded deaths our Army has experienced, our most vulnerable Teammates.

How do we target the Generation Y-ers who seem to be in the majority of the Army's accidental fatalities? Generation Y Soldiers' expectations are defined and developed by past influencers (Family, church, media, etc.). To forcibly change and positively adjust their lifestyles without degrading what they bring to the fight is tough work. Another approach I suggest and ask you to explore involves Generation X-ers and Boomers using some "out of the box" thinking themselves.

This non-conventional approach may put you out of your comfort zone, but the chances that it will widen the possibility for success are high. At the very minimum, we will increase our awareness of this target-rich environment for change. Maybe the Generation X-ers and Boomers, not the Generation Y-ers, are the ones who need to adjust their approach and think "out of the box" to create messages and solution sets that transcend the communication barrier between them and the Generation Y-ers.

Each generation is unique and Generation Y-ers are no different. But Generation X-ers' and Boomers' ability to crack the code on the mechanics of what makes the Generation Y-ers unique holds unexplored possibilities of preventing losses. Our efforts surely will create a positive change as we, Leaders, grow based upon our enhanced understanding of Generation Y-ers who seem to be the most vulnerable.

Army Safe is Army Strong !!

William H. Forrester
Brigadier General, USA
Commanding

BEST PRACTICES FROM OUTSIDE THE BOX

> "When they **KNOW** their **FAMILIES** are **SAFE**, **SOLDIERS** can focus on the **MISSION** at hand, thereby actually **ALLOWING** Soldiers to **OPERATE** safer."

As we start September, school is back in session for most of our children. Take a couple of extra seconds to look before backing up and slow down as you move out through areas with children. The safety of Family members is as important to the Army as the safety of our Soldiers. We have known for years the impact Family members have on the retention of quality Soldiers, but they also have a higher propensity to join the military than any other demographic group in America. When they know their Families are safe, Soldiers can focus on the mission at hand, thereby actually allowing Soldiers to operate safer.

I'm always looking for new ideas and ways to promote safety that I can pass on to others. I recently had the opportunity to visit an installation safety day held on Fort Campbell, Ky. The Home Safety Council, Residential Communities Initiative (RCI) partners, Actus Lease Lend and Winn Residential teamed with post officials to sponsor the Great Safety Adventure (GSA). The GSA is an award-winning "field trip on wheels" that brings home safety to neighborhoods. Out of all the safety exhibits featured throughout the event, the traveling exhibit was clearly the big hit with the children.

Home Safety Council President Meredith Appy explained that the organization has two safety adventure trucks, one traveling the East Coast and one the West Coast, teaching home safety to school-age children. During the interactive tour of the exhibit, children and their parents were able to explore the animated home. Trained safety experts called Safety Rangers and Rover, the Home Safety Hound, led the tour, identifying common home safety hazards that are typically overlooked. Rover and the Safety Rangers focus on the five leading causes of home injuries: (1) falls, (2) poisoning, (3) fires and burns, (4) choking and suffocation and (5) drowning. Led by Safety Ranger Kristy, I took the tour with a group of 6-year-old children from one of the installation's child development centers and found it an informative, as well as enjoyable, experience.

A high-tech way to promote safety utilizes the instant, around-the-world communication capabilities provided by the World Wide Web. Information-savvy Soldiers, and, in most cases, Leaders are aware of the "broadcast yourself" Internet phenomenon known as YouTube. But did you know that you could find safety information on YouTube? Bridgestone-Firestone offered a $5,000 scholarship under its Safety Scholar program. To compete for the scholarship, teens shot and submitted original 20- to 50-second safety videos intended to message their peers. Fort Bliss' 11th Air Defense Artillery Brigade has duplicated the program. Col. Forrest E. Smith, who has since departed Fort Bliss, and Command Sgt. Maj. Henry Hurd held a similar safety video contest. The command team selected the best videos from the unit and aired the winning submissions via the on-post command information channel.

What a novel idea – peers messaging peers to make a difference. The Family Morale Welfare and Recreation Command and the U.S. Army Combat Readiness/Safety Center are preparing to conduct an Armywide video contest with the same aim in mind, and I look forward to seeing videos demonstrating positive safety behavior from the perspective of Soldiers keeping Soldiers, and Families, safe.

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

SAFE WINTER FLYING

PAULA ALLMAN
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Before the first snowflake falls, Soldiers and aircrew members need to prepare for the harsh winter conditions ahead. Proficiency training in winter operations should already be on every crewmember's agenda because the warm days of summer will soon give way to snow, ice and freezing winds.

Operating and maintaining aircraft in cold weather can be physically demanding and hazardous. Regardless of winter's adverse environmental conditions, the Army must continue to defend our nation's interests around the world and train future warfighters. To do so safely requires taking cold weather training seriously and applying composite risk management (CRM) effectively.

Now is the time to start brushing up on winter flying techniques. Review CRM worksheets for known hazards associated with cold weather operations, identify any hazards specific to the unit's mission or area of operation and develop effective control measures that will mitigate the risks. Advance preparation and effective CRM won't

> "When an aircrew is **INVOLVED** in a **WHITEOUT** during an approach or experiences **SPATIAL DISORIENTATION** over a snowy field, **IT'S TOO LATE TO TALK ABOUT TRAINING.**"

keep the snow from falling or the cold winds from blowing, but it will help prevent costly accidents and cold weather injuries when winter arrives.

Preparing for cold weather isn't a complicated process; aircrews should have a plan and a contingency, said Lt. Col. Scott Kubica, Air Task Force director for the U.S. Army Combat Readiness/Safety Center.

"We should be prepared for winter flying conditions — such as dramatic changes in temperature, blowing snow conditions and potential icing. Aircrews should also ensure they carry appropriate survival gear for their mission," Kubica said. "While assigned in Korea, one of our units was scheduled to fly a UH-60A mission the following morning. We normally hangared the aircraft the night before; however, due to other mission requirements, we were unable to put it in the hangar. The following morning, during the predawn preflight, the aircrew found snow on the fuselage and blades. They removed all the snow, but they didn't discover the ice on the blades because of the darkness. When they started the aircraft, black ice shed from the blades and punctured a hole in the aft pylon, resulting in Class C damage."

Units that haven't reviewed training in cold weather flying should do so immediately. When an aircrew is involved in a whiteout during an approach or experiences spatial disorientation over a snowy field, it's too late to talk about training.

Inexperience and lack of recent training are frequent contributors to snow-related accidents. If new to an area with frequent snows, aircrews should get into Field Manual (FM) 3-04.203, *Fundamentals of Flight*, as well as all the local standing operating procedures. They should also ask questions — lots of questions — of local safety officers and instructor pilots.

Even if they have lots of winter flying experience, a few months in temperate weather can erode winter flying proficiency. Remember, overconfidence can lead to an accident just as surely as inexperience. Consider the following recent accidents:

- During night vision goggle (NVG) flight, the UH-60A crew of four briefed a landing to the center of a mountainous, snowy, confined area, utilizing a single reference point to the left of the aircraft. During approach to landing, the crew experienced whiteout conditions at about 20 to 40 feet above ground level (AGL) and drifted into trees, damaging the main rotor blades, tail rotor blades, stabilator and engine deck.
- During a snow landing to an unimproved landing area, the CH-47D right aft landing gear struck a boulder that was covered in snow and detached from the aircraft. The aircraft was brought to a hover and the landing gear was secured with straps to the ramp. The aircraft returned to base, where it landed on pallets and mattresses. The aircraft was shut down and jacks were placed underneath to help secure it. No further damage occurred to the aircraft.
- An OH-58D(I) crew experienced whiteout while conducting night/NVG snow-qualification training. During final approach to a snow-covered landing zone (LZ), a snow cloud engulfed the aircraft. The pilot continued to hover in the snow cloud and became disoriented; consequently, the aircraft drifted right, spun 180 degrees and impacted several small trees. The rotational momentum continued as the main rotor blades disintegrated. The aircraft came to rest in a level, upright attitude, sustaining significant damage. The crewmembers received minor injuries.
- A UH-60A crew had planned to take off through a large gap between two groups of trees and then down a ravine, using only 5

DID YOU KNOW?

The mountainous regions in north and northeastern Iraq, which include the cities of Mosul and As Sulaymaniyah, receive heavy snowfall each winter, especially during December, January and February. Afghanistan experiences much harsher winters than Iraq. More than 49 percent of Afghanistan is made up of mountains at least 6,500 feet high. Afghanistan experienced record snowfall and cold temperatures in the early months of 2005, with nighttime temperatures in Kabul dropping to -64 F!

percent more than hover power. On the instructor pilot's second takeoff, he came to a 10-foot hover to check his power and then pulled in additional power, causing the snow cloud to increase. As a result, the crew lost sight of the trees, drifted left and the main rotor blade struck the trees.

▪While air-taxiing into a tactical parking area, the pilot in command made a decision to execute a blowing snow approach (without a visual, fixed reference point) to a location close to another aircraft operating at engine idle in its assigned parking point. The main rotor blades of the two aircraft meshed.

A primary rule in any aircraft movement under winter conditions is to think before acting. This environment demands a thoughtful approach to every task. For example, an aviator does not bring the helicopter to a hover and then determine where to go. This will usually result in a whiteout, mandating an instrument takeoff (ITO)-type maneuver to climb above the snow cloud and return to visual meteorological conditions. On an airfield, this results in traffic complications and a safety hazard. Each phase of flight requires a plan, which is announced to the other crewmembers, utilizing sound aircrew coordination techniques. Crewmembers clearly establish and announce intentions before executing.

Hovering in snow can quickly result in a complete and persistent whiteout requiring the aviator to execute appropriate ITO procedures. The essential rule is to expect the worst when preparing to hover in snow conditions. Always assume a whiteout will result from your actions. This mindset, coupled with proper preparation, will make for a safer flight. A takeoff should be performed into the wind, as this will assist in keeping any snow cloud to the rear of the aircraft.

Aircrews can use the following procedures from FM 3-04.203 to overcome depth perception difficulties:

▪Use terrain features (trees, vegetation and large rocks) as references. Knowing the approximate dimensions of these features produces a more accurate estimate of height and distance.

▪Improve depth perception by viewing terrain through the side window and comparing this perspective to the view through the windscreen. Maintaining a good scan pattern, similar to that used in night flight, is essential.

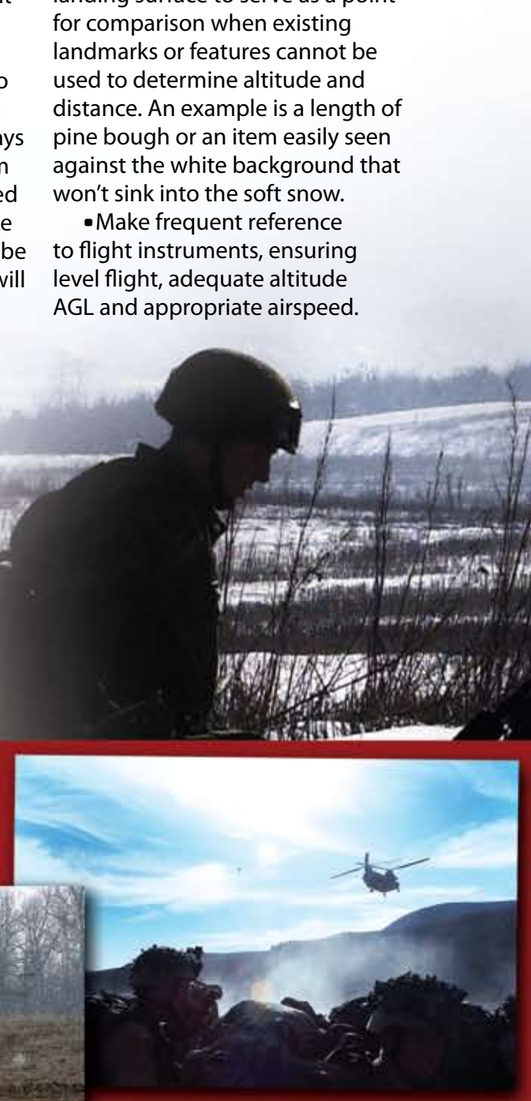
▪Drop something on the landing surface to serve as a point for comparison when existing landmarks or features cannot be used to determine altitude and distance. An example is a length of pine bough or an item easily seen against the white background that won't sink into the soft snow.

▪Make frequent reference to flight instruments, ensuring level flight, adequate altitude AGL and appropriate airspeed. The information is correlated with current visual information. This continual process requires aviators to scan inside and outside the cockpit.

▪Use aircraft landing lights to assist in depth perception. Lights are adjusted to reduce the reflection off the snow.

Summary

Since the dawn of Army aviation, winter weather has presented challenges to aircrews. Unfortunately, nothing can be done to change the weather. However, the very predictability of changing seasons gives aircrews time to plan training for the different kinds of flying concerns each season brings. Units tasked to deploy to a cold environment should, in addition to reviewing appropriate FMs and training manuals, seek guidance and necessary information to train and prepare their personnel by contacting appropriate units. Units with experience operating in these cold weather conditions have established training programs and 3000-series tasks not included in individual aircrew training manuals which are essential to mission accomplishment. If you haven't already done so, get refresher training, review FM 3-04.203 and be alert to the hazards associated with winter flying.



LANDING SURFACE

Aviators should consider what is beneath the snow during all landings. While the snow appears level, the ground beneath could be sloped or covered with rocks, logs, holes and other hazards. Treat all landings as possible slopes and be prepared if one side or both breaks through the surface. Snow-covered frozen bodies of water have the appearance of a good landing zone.

The Cold, Hard Facts

1ST LT. ERIK JOHNSON
Indiana National Guard
Indianapolis, Ind.

Exposure to the elements is an occupational hazard that is familiar to all Soldiers. As Leaders, we must be aware of the difficult circumstances the junior ranks often find themselves in. Whether in the field or in garrison, it's the corporal – not the commander – who is outside in the cold while on patrol or setting pickets. However, proper awareness and implementation of appropriate control measures can help prevent these Soldiers from becoming cold weather casualties.

Clothing

Normally, Soldiers who suffer cold weather injuries are not dressed properly. All Soldiers must be issued the full complement of cold weather gear, including insulated boots, gloves and a field jacket liner. Soldiering often requires intense physical exertion, causing body heat to be lost through perspiration. Clothing dampened by sweat or environmental elements such as sleet or rain provides no insulation against the cold and actually increases the risk of injury.

Once a Soldier's clothing becomes drenched in sweat, the layers stick together and prohibit warm air from being trapped between them. Therefore, Soldiers must dress as lightly as possible for the conditions to reduce the hazard of excessive perspiration. Clothing should be worn loose and in layers so it can be vented at the neck. Garments that fit too tight restrict circulation and reduce insulation and ventilation in the covered areas, providing an environment for cold injury.

The changing of socks and wearing of proper footgear is also important in the prevention of cold weather injuries such as trench foot or immersion foot. Additionally, Soldiers should wear gloves with inserts in cold weather. Head protection is also necessary to prevent heat loss.

The uniform should be kept as dry as possible, for reasons mentioned above. Finally, Soldiers should always use the buddy system. In other words, each Soldier should observe his or her counterpart in the field for early signs of cold weather injuries.

Nutrition and Hydration

Good nutrition is another important measure to prevent cold injury because it provides the body with fuel to produce heat. The number of calories needed to maintain normal bodily function generally increases as the weather gets colder. However, adequately clothed and protected Soldiers in cold climates don't require more than the usual ration of 3,600 to 4,600 calories they're provided every day in Meal, Ready-To-Eat packages or dining facility meals.

One of the most important precautions Soldiers can take to stave off a cold injury is to stay properly hydrated. Leaders can help their Soldiers stay hydrated by providing them with liquids they'll actually drink. Lukewarm drinks with some flavoring taste better than cold, tasteless drinks in the winter. However, Leaders should remember coffee, tea, hot chocolate and soda are diuretics and can actually increase fluid output and lead to dehydration.

Proper Training

It is known that well-trained Soldiers suffer less from the cold than others. The absence of a cold weather officer at the unit level leaves Leaders without a focal point to ensure first-line supervisors are properly trained to implement cold injury preventive measures. The potential consequences of command inattention to cold weather training are numerous and dangerous.

Though it may seem obvious, Leaders must also remember to use weather data when planning cold weather missions. Knowing what hazards are forecast allows for more informed and effective mission planning. But, fundamentally, troops should all be trained how to prevent, detect and give first aid for cold weather injuries if a mission plan is to be truly sound.

Likewise, all troops must be disciplined in their behavior for any mission plan to have a real chance at success. Soldiers should not consume alcohol or use tobacco products just before or during operations. Although alcohol may give a sensation of warmth, it actually decreases the core body temperature and increases the risk of hypothermia. Tobacco causes constriction of blood vessels (which bring nutrients and warmth) to the extremities. For safety's sake, it's best to stay away from both alcohol and tobacco products.

Conclusion

Cold weather is a threat to successful operations. Fortunately, there are effective countermeasures to these threats. It's never too early to start planning for cold weather. Prior planning enables units to effectively employ these cold weather countermeasures and may help prevent your Soldiers from suffering an injury this winter.

FYI

The following cold injuries require immediate medical attention, so don't delay if you or your buddy exhibit 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 a burning sensation 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.

a "SPORTiNG" CHANCE for RiDERS

BOB VAN ELSBERG
U.S. Army Combat Readiness/Safety Center
Fort Rucker, Ala.

You see them all the time – flashy sportbikes coupling tremendous acceleration with incredible agility. The fastest ones will nudge 200 mph – a road-sizzling 300 feet per second! And did you notice the steep angle of the front forks? That makes steering ultra sensitive. Twitch at high speed and you change lanes. Sneeze and you're two counties over. Even the rider is part of the performance package. Crouched low over the tank to reduce wind resistance, they're part of the streamlining.

Costing a fraction of the "tuner" cars popularized in "The Fast and the Furious" movies, the quickest of these bikes can smoke anything on the road. However, while the price tag offers an unbeatable dollar-per-horsepower ratio on the street, there are other costs. Bred for the controlled environment of the track; on the street, sportbikes can get ahead of their riders, eliminating their options before they realize it.

The Army knows that. So does the Motorcycle Safety Foundation (MSF). Soldiers ride all kinds of motorcycles, and sportbikes are very popular. To keep Soldiers alive so they can enjoy the next ride, the MSF has teamed with the U.S. Army Combat Readiness/Safety Center (USACRC) to create the Military Sportbike *RiderCourse*SM (MSRC).

"We worked with the Army very closely to develop a three-hour classroom course that helps riders assess their own risk management," said Charlie Fernandez, MSF general manager and a sportbike rider. The goal, he explained, is to get riders to accurately assess their skills and measure them against the risks they're willing to take. The key word is "accurate." However, getting riders to that point involves a gradual learning process. And this is no lecture class – riders are expected to uncover the truth for themselves. That's important because many riders overrate their skills, said Glen Picklesimer, a contractor who trains MSRC *RiderCoaches*.

"When they walk in, we have them tell us on a scale of one to 10 where they think their skills are," he said. "Generally, if they've been riding a couple years, they think their skills are pretty high. They'll think they're a seven, an eight or a nine."

Getting students to take a more objective view of their abilities takes a process of discovery during the classroom sessions. Separated into teams and grouped with *RiderCoaches*, riders are presented situations they might encounter and asked, "How would you handle this?" There's no "answer key" and the *RiderCoaches* aren't going to tell them what to do. Riders are expected to present their best answer and be willing, with the input of other students and *RiderCoaches*, to talk through it. There are no "bad" answers – just opportunities to learn. It has to be that way for riders to open up without feeling intimidated.

Picklesimer explained the course isn't how your hands and feet handle the controls, it's about how your brain handles the decisions. It's about your attitude when you swing your leg over the seat. Do you really know your skills? Do you really understand the risks? Do you search for risks and plan to avoid them? It's all "mental" stuff – just like composite risk management – but it's designed to save your butt.

> "YOU can PREACH to PEOPLE all you want, but UNLESS you MODIFY their BEHAVIOR, you're NOT going to CHANGE ANYTHING out there."

Once the students have talked through handling road situations such as cornering, braking and swerving and straight-line braking using techniques reflecting their machines' handling, they get to practice on the course. Seeing is believing and the demonstrations immediately got the attention of Sgt. Shawn M. Redondo, an air traffic controller assigned to Fort Rucker's Company B, 1st Battalion, 11th Aviation Regiment.

As a Honda CBR 600 rider, Redondo said, "The main thing that opened my eyes was the braking demonstration we did." He explained that from 25 mph it took nearly 60 feet to stop – a sobering thought when a rider's biggest concern isn't how fast his bike can go, but how fast it can stop.

As the riders performed the various maneuvers, they were taught advanced techniques tailored for their machines. Redondo had paid close attention to the discussions on cornering that morning in the classroom.

"We were trained to lean upward and in when we're going around a turn to balance the bike a lot better," he said. He added that he'd always favored his right side in turns, finding it harder to turn left. One of the other students had the opposite problem. "We discussed how to position our bodies, thinking maybe that was what was causing us not to lean far enough to the right or left."

Through this kind of discussion between students and their *RiderCoaches*, the riders became able to measure themselves and their skills more accurately. When they were given the chance to reassess their skill level at the end of the day, the answers were a more realistic "two, three or four," Picklesimer said.

"They realize there's a lot more to learn and they're not necessarily 'king of the hill' anymore," he said. Picklesimer added the students often realize they're more vulnerable than they thought. He explained this was the course's golden nugget – getting riders to know themselves and their bikes and to choose to ride within what they can safely handle. That it is "their" choice is essential, according to Picklesimer. "You can preach to people all you want, but unless you modify their behavior, you're not going to change anything out there," he said.

That got through to the riders. Redondo ended the day with a changed perception of himself. He no longer rated himself a seven, eight or nine rider. He'd learned he had a ways to go to reach those levels, but he now had a better chance of living to get there.

"I definitely gained a lot more respect for the bike – a lot more trust with my skills and my bike's capabilities," he said.

The young Soldier had reached the course's goal, according to Picklesimer.

"The difference between a good rider and a great rider is knowing where you stand," he said. "It's being able to determine what your skill set is … knowing how far you can (safely) 'push it.' You realize, as you get better, you're going to 'push it' less and less."«

FYI

For more information on this new training, contact the Driving Task Force at the U.S. Army Combat Readiness/ Safety Center at 255-3034, DSN 558-3034 or e-mail drivingtaskforce@crc.army.mil.

READY FOR THE COMMUTE?

BOB VAN ELSBERG
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Fort Rucker, Ala.

Can't wait to face the rush-hour traffic to work? How about the "leisurely" commute home with drivers itching to be somewhere else? Truth be told, your chances of taking a detour to the hospital peak during commuting hours. Recognizing that, the Network of Employers for Traffic Safety (NETS) has declared Oct. 6-10 "Drive Safely to Work Week."

You say you're a better-than-average driver. Are you sure? Or, have you gotten so used to the rat race on the highways that you have become complacent to the dangers? Think about your commutes during the last month. Have you had an "uh-oh!" on the road? Was it something you accidentally did, or did some other driver nearly take you out and you didn't see it coming? With a traffic accident occurring every five minutes, it's clear many drivers are making mistakes on the road.

So, what can you do? Here are a few tips from the folks at NETS to keep your daily commute from taking a detour to the hospital:

- **Pay attention! Hang up the phone and focus on the job at hand.**
- **Keep a proper following distance. More space means more time to react when things go wrong on the road.**
- **Drive at the proper speed. Speed limits are based upon safety concerns that go beyond just yourself and your car. And if it's raining cats and dogs, you might want to slow down. Just because the speed limit is 70 mph doesn't mean you should plow the water like a speedboat.**
- **Pay attention to traffic signs and signals. Avoid the green means "go" and yellow means "go faster" mindset at intersections.**
- **Look before backing. It's not fun when things go bump in the night – or during the day, for that matter – behind you.«**

This Ain't Your Father's Oldsmobile

ALFRED RICE
The Joint Staff
Washington, D.C.

Mine Resistant Ambush Protected (MRAP) V-shaped hull transport vehicles are now being fielded successfully in theater. The MRAP is well designed for the missions of operating in environments with improvised explosive devices and provide significant protection for Soldiers. However, the vehicle does have some safety challenges. Driving an MRAP is not like driving a HMMWV. In other words, "This ain't your father's Oldsmobile."

Training

An up-armored HMMWV weighs 6 to 7 tons, while an MRAP can weigh more than 25 tons. Compared to a HMMWV, the MRAP has very different steering, handling and maneuvering characteristics. If the MRAP were a commercial vehicle driven on public roadways, it would require the driver to have a commercial driver's license.

Reports from the field indicate that although the MRAP is a big vehicle, it has good acceleration, and the power steering and air brakes make it easy to drive. But Leaders in theater recommend additional training requirements such as day and night hands-on driving on unimproved roads, backing with ground guides from the ground and from the turret, and rollover drills.

As with all new equipment, MRAP training should include all the hazards associated with the vehicle. Those include crushed-hand injuries from the doors closing when not parked on even terrain, sharp metal edges around the door frames, vehicle recovery procedures and limitations, antenna and power line safety, as well as all the other warnings and cautions listed in the operator's manual.

Stability

So, how does the MRAP's stability compare to other fielded vehicles? The U.S. Army Research and Development Command has compared extensive MRAP test data with other tactical

vehicles and determined testing results do not indicate the vehicle has stability or rollover performance issues. The MRAP exhibits similar stability and handling characteristics to other similar-sized vehicles such as the Family of Medium Tactical Vehicles, Medium Tactical Vehicle Replacement or the Heavy Expanded Mobility Tactical Truck. However, again, it handles much differently than a HMMWV. With the MRAP being a heavier vehicle, it also requires greater stopping distances than the HMMWV.

Rollovers

All types of vehicles can roll over, including the MRAP. Taller, narrower-wheel-base vehicles that have higher centers of gravity are more susceptible to rollovers if involved in a single-vehicle crash. Although it may have good stability and rollover characteristics, MRAP operations require particular vigilance to prevent rollovers, as the vehicles also pose some unique challenges.

Rollovers have been categorized by the following types: maneuver-initiated (swerving to avoid a pothole or other object or taking a corner too fast); impact-initiated (hitting a curb, median or pothole); or fall-initiated (a soft shoulder or the ground gives way). Fall-initiated rollovers often occur from unimproved roads that may be near bodies of water, where the road shoulders are soft.

The weight of the MRAP and the road conditions in theater have resulted in a number of fall-initiated-type rollovers. To date, nearly half the MRAP rollovers have been fall-initiated from operating along roads near ditches or on bridges and culverts incapable of handling the weight of the vehicle.

Minimizing the Risk

Some of the tactics, techniques and procedures (TTPs) that are recommended to help prevent MRAP mishaps include:

> **"REPORTS** from the **FIELD** indicate that although the **MRAP** is a big vehicle, it has **GOOD ACCELERATION**, and the **POWER STEERING** and **AIR BRAKES** make it **EASY TO DRIVE."**

- **Rollover drills.** MRAP crews should practice rollover drills to standard. Be proficient and learn to work as a team.
- **Composite risk assessments.** Incorporate the potential for rollovers in risk assessments by assessing bridges and terrain along the route. Be alert and always use caution on roads close to canals. Always consider allowing greater clearance when traveling along the edge of the road. Consider the probability of the road surface collapsing and pitching the vehicle. Also assess the potential for low-hanging power lines. Ensure these hazards are briefed before the missions and brief your options for alternate or bypass routes.
- **Crew restraints.** Vehicle commanders should enforce the use of crew restraints and protective headgear and ensure all loads are secure. According to a U.S. Army Center for Health Promotion and Preventive Medicine study, the risk of suffering a fatal injury is three times greater for Soldiers who fail to wear a seat belt during tactical vehicle operations. Seat belts secure the driver in a position from which to stabilize an out-of-control vehicle. Gunner restraints should be worn to prevent the gunner from being ejected from the interior and crushed by the vehicle. Interior occupants can also sustain injuries from flying equipment, which makes securing loads particularly important since objects inside the cab will become deadly flying missiles should a rollover occur. Wear your helmet and other protective equipment at all times. This will protect vital parts of your body if they do come into contact with hard surfaces in the vehicle.
- **Steering.** Many rollovers occur when drivers overcorrect their steering as a panic reaction to an emergency or even to a wheel going off the pavement's edge. At highway speeds, overcorrecting or excessive steering can cause the driver to lose control, which can force the vehicle to slide sideways and roll over. Sudden vehicle maneuvers are particularly risky since the speed and load shift can make the vehicle unstable.
- **Know proper maneuvering.** If the vehicle leaves the pavement edge, reduce speed. Gradually and firmly steer the vehicle onto the roadway. Slight steering inputs back onto the roadway reduces the risk of pinching the tire sidewalls against the edge of the road or inducing a flex in the sidewall that could cause the vehicle to veer out of control while transitioning from the shoulder to the road. Also, reduce speeds when negotiating turns and avoid sudden vehicle maneuvers, overcorrecting or excessive steering that can result in loss of control.
- **Use caution on rural roads.** When a vehicle goes off a rural road, it can overturn when it strikes a ditch or embankment or is tripped by soft surface terrain. Road shoulders in Southwest Asia do not meet U.S. standards and may collapse under the weight of the MRAP. Nearly 75 percent of all rollover crashes occur in rural areas, so practice caution when driving on rural roads. Also, use caution when crossing bridges that are unrated (get prior guidance from combat engineers).
- **Tire pressure.** Improperly inflated and worn tires can be especially dangerous because they inhibit the ability to maintain vehicle control, the most important factor in reducing the chance of rollover. Worn tires may cause the vehicle to slide sideways on wet or slippery pavement, sending the vehicle off the road and increasing the rollover risk. Improper inflation can accelerate tire wear and even lead to tire failure. It's important to maintain tire pressure in accordance with the operator's manual and replace tires when necessary.

Implementing these TTPs and understanding the characteristics of the MRAP will minimize mishap risks. These are best arsenals for tactical vehicle drivers and occupants to preserve this awesome warfighter asset.

FYI

For more information, visit the U.S. Army Combat Readiness/Safety Center's Driver's Training Toolbox at https://crc.army.mil/drivertrainingtoolbox/mrap.aspx.

OLD HABITS ARE HARD TO BREAK

COMPILED BY THE KNOWLEDGE STAFF
U.S. Army Combat Readiness/Safety Center
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A recent accident in a new aircraft reminds us that old habits are hard to break. This particular accident happened to a master aviator during a daytime training flight. The pilot in command (PC) was a standardization pilot (SP) conducting readiness level progression training on an aviator with minimal experience.

The crew had been performing various practice maneuvers leading up to the time of the accident. Because the UH-72 does not have skid shoes, it is restricted from performing running landing maneuvers to hardened improved surfaces. This requirement led crews in this unit to perform running landings to the sod west of the runway. There were two precision approach path indicator (PAPI) lights near the southern end of the west sod. Because the best area for landing was just north of the PAPI lights, it was common for pilots to use the lights as a reference point for initiating maneuvers and for judging where to land. This flight was no exception. The PC on the controls came to a 150-foot hover over the PAPI lights and demonstrated Task 1072 from the aircrew training manual (ATM), *Respond to Engine Failure at Out-of-Ground Effect (OGE) Hover*, further described as one engine inoperative (OEI) OGE with landing.

After demonstrating the first iteration of the maneuver to the ground, the PC climbed back up to 150 feet above ground level (AGL) and positioned the aircraft with the PAPI lights visible in the chin bubble, which, in fact, placed the aircraft about 150 feet behind the lights.

The PC then initiated the second iteration of the maneuver by retarding the No. 1 engine to idle and making a substantial collective reduction. The PC also applied forward cyclic to achieve an approximate 20-degree nose-low attitude, as required by the ATM. The PC noticed the vertical rate of descent seemed excessive, so he adjusted his nose-down attitude to less than 20 degrees. As the aircraft reached about 50 feet, the PC began to level the aircraft, but it did not transition to forward flight as it was supposed to do.

The UH-72 uses an instrument display called the first limit indicator (FLI) that summarizes indications from engine speed, temperature and torque. The PC increased collective to FLI 11 with single-engine power. He then pitched the nose upward in a decelerative attitude and increased the collective to the maximum FLI 14 as he reached 25 feet AGL. Because of the nose-high attitude, the tail rotor made contact with one of the PAPI lights, shredding the tail rotors and breaking the driveshaft. This impact forced the nose of the aircraft to pitch down and forward to where the right skid made contact with the ground. The aircraft bounced back into the air and, due to the loss of tail rotor thrust, the nose spun around to the right one complete turn before impacting the ground again in a level attitude.

> "As the **AIRCRAFT REACHED** about **50 FEET**, the PC **BEGAN** to **LEVEL** the aircraft, **BUT** it did **NOT TRANSITION** to **FORWARD** flight as it was **SUPPOSED TO DO**."

The PC recognized the loss of tail rotor thrust and retarded both engines to idle during the rotation. The left skid broke because of the rotational forces and the forward momentum at the time of impact. The aircraft impacted the ground a second time and came to rest upright with the left underside fuselage on the ground. The PC executed an emergency shutdown and both crewmembers egressed without any injuries.

So What Went Wrong?

According to the rotorcraft flight manual for the aircraft, the equivalent of an operator's manual, the correct procedure for this maneuver is to retard one engine to idle while simultaneously adjusting the collective to between FLI 11 and 12 to maintain rotor RPM within limits, and lower the nose approximately 20 degrees to gain airspeed. Once the aircraft has gained 30 to 45 knots of airspeed, the pilot should transition to a level attitude and continue a shallow approach to a running landing.

The PC initiated the maneuver with a rapid reduction of the collective while simultaneously retarding the No. 1 engine to idle. The rapid collective reduction resulted in an OEI FLI 8, which resulted in an excessive vertical rate of descent and placed the rotor system in an autorotational state rather than a thrusting state. The aircraft was basically experiencing a hovering autorotation from 150 feet. The PC did not increase the collective to FLI 11 until about

50 feet. At about 25 feet, both pilots recognized an excessive rate of closure with the ground. The PC on the controls adjusted the attitude of the aircraft to about 25 degrees nose-high, while increasing the collective to FLI 14, as if conducting a deceleration and applying initial collective during an autorotation in some other Army aircraft. The nose-high attitude allowed the tail rotor to impact the PAPI lights, resulting in a subsequent tail rotor failure.

This scenario is very typical of habit interference or negative habit transfer, which can occur when an aviator has more experience and flight time in one type aircraft and very little in another. In this scenario, the aviator may have reverted to the way he would have normally responded to an emergency situation in the aircraft in which he had the most experience. Couple his transition to a new aircraft with a long period of nonflying duty due to deployments and a change of duty stations and we have a classic case of habit interference.

How Can We Avoid Training Habit Interference?

First, we must have well-developed and detailed standards. Then we have to train to those standards. We have to know the procedures in the operator's manual and commit the underlined portion of emergency procedures to memory. Unfortunately, the only real way to cure negative habit transfer is many repetitions of the correct performance of the task. It requires repetitive training of procedures correctly performed to a standard. One Web site on the subject stated that it can take up to 2,000 repetitions when learning a new task before the brain completely replaces the "old way" of doing the task. This problem is intensified when a pilot has been away from flying for a while or regularly changes from one aircraft to another. Even experienced pilots can inadvertently revert to their previous training. As they say, "Old habits are hard to break." Pilots who fly more than one type or series of aircraft, or who transition into a new aircraft, have to remain focused on the aircraft being flown and cognizant of the risk of negative habit transfer. «

A CLOSE CALL IN IRAQ

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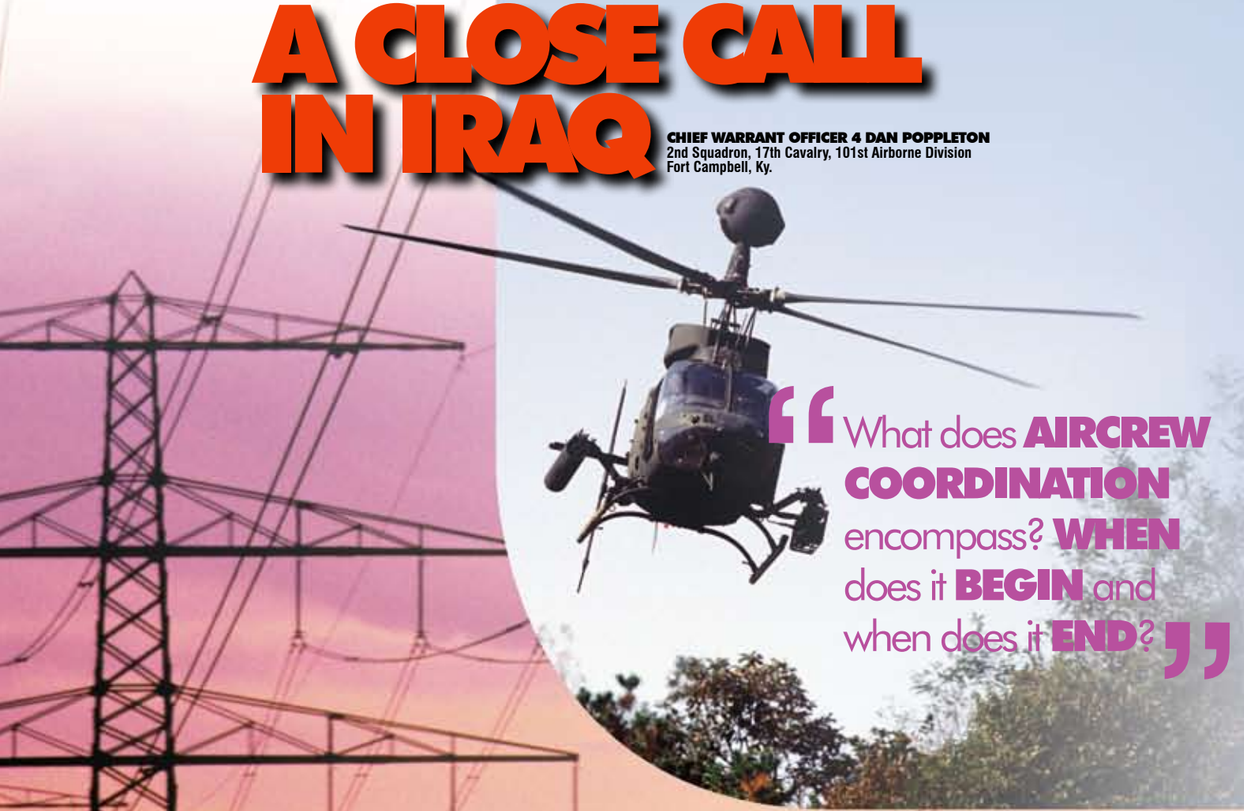

"What does **AIRCREW COORDINATION** encompass? **WHEN** does it **BEGIN** and when does it **END**?"

We had just taken off on a four-hour night vision goggle airfield security mission. I was the pilot in command and air mission commander for a team of two OH-58Ds. We were just weeks from going home, so to lower our risk of losing anyone to an accident, our company safety officer had recently coordinated several training classes emphasizing aircrew coordination.

Airfield security was a mission we had done a hundred times before; however, this time, there were problems right from the start. As soon as we took off, one of the radios broke squelch and wouldn't stop. I couldn't understand my co-pilot or my wing man. A minute later, we were at mission airspeed and altitude. A few seconds later, we were flying over a well-lit area that washed out our goggles. At this point, I felt I was experienced enough to recognize that we were maneuvering into a classic accident situation, so over the radio noise I told my co-pilot, "You fix the radio, call off with OPS and I'll fly the aircraft." Unable to understand his response, he gave me a thumbs up.

Even though I was concentrating on basic flying, I realized I was rapidly getting behind the aircraft with the radio hissing and washed-out goggles. In all the confusion, I heard one word, "wires." My wing had calmly and clearly transmitted that one word and, for whatever reason, it sliced through the interference. I didn't see any wires; nevertheless, I immediately initiated a smooth, 500-foot-per-minute climb. A few moments later, the radios cleared and we passed about 50 feet over a huge set of wires.

The rest of the mission went smoothly. Hours later at the chow hall, I realized I had learned a valuable lesson. Even though the crews had more than 9,000 hours of total flight experience in both cockpits during this close call, my wing was the only pilot with total situational awareness. He recognized that accidents are a chain of related events and broke the chain with one simple word. By doing so, he prevented what could have been two fatalities and a destroyed aircraft. Aircrew coordination suddenly became much more than a required class to improve Army aviation operations.

So, what does aircrew coordination encompass? It's not only for your aircraft, but also extends to the other aircraft in the flight, ground element, air traffic control and others. When does it begin and when does it end? It starts at the mission brief and ends in the chow hall. I had both questions answered in a close call while in Iraq. «

Road Rage
ALONG FOR THE RIDE

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It's hard to drive today without occasionally being exposed to some form of road rage. Impatient drivers motoring down congested highways sometimes take their anger out on those around them. When you're behind the wheel, you can choose not to engage and try to get away from an aggressive driver. However, what about when you're a passenger? In this story, the author considers the role he, as a passenger, could have played in keeping a highway confrontation from turning into a crash.

After dinner one night at a local restaurant, three friends and I decided to head home. I sat in the right-front passenger's seat while one of my friends drove us down a limited-access highway. As we neared our exit, another driver approached us rather aggressively, tailgating our vehicle and flashing his high beams. Our driver quickly became annoyed and, in the same aggressive spirit, intentionally slowed down as we moved toward the off-ramp.

As we exited the highway and merged onto a two-lane road, the other driver also sped up.

We were going between 80 and 90 mph when our driver swerved and lost control, sending us off the road and other driver sped by us on the right. Our driver, who was furious by this point, decided this was unacceptable and mashed the accelerator pedal. We had almost caught up to the other vehicle when our driver crossed the double solid lines into the oncoming lane to pass. As we did, the straight toward a tree. Fortunately, when we hit, the impact was off center and the car spun and wrapped itself around the tree. Had we hit it dead-center with our front bumper, I doubt any of us would have survived. After the accident, our driver claimed the other driver swerved toward us, but I disagree. I was the passenger with the best view of what happened and I know better.

> "I LEARNED from this THAT WE, as PASSENGERS, are also RESPONSIBLE for SAFETY ON THE ROAD."

If there was anything good about this accident, it was the fact that we all survived. Miraculously, I suffered only a sprained foot and a bruised chest. Had it not been for my seat belt, I would have suffered more serious injuries.

But what was my role in this accident? Where did I fail to be a diligent passenger? I failed because not once during the entire sequence of events did I try to discourage my driver from acting out his anger. When he took off after the other car, I said nothing about the danger he was putting us in. When he illegally crossed into the oncoming lane, I kept quiet and went along for the ride. When he swerved and went off the road, there wasn't time to say anything. I'd gone from being along for the ride to being along for the crash. I could, and should, have compelled our driver to reconsider his confrontational actions. But I'd missed that opportunity.

I learned from this that we, as passengers, are also responsible for safety on the road. Even though we may not be in control during a dangerous situation, we should never underestimate our influence on others – even from the passenger seat. A few timely words of sound judgment can prevent a lifetime of pain, or worse, a season of mourning.

DEALING WITH AGGRESSIVE DRIVERS

If you drive, sooner or later you will be confronted with an aggressive driver who tailgates, honks, cuts you off or makes rude gestures. Your first reaction might be to respond in kind, but that could soon escalate into a full-blown road-rage incident. There are better ways to respond to these incidents so that you and your passengers don't become the victims of someone else's anger or your own. The National Highway Traffic Safety Administration offers the following tips for defusing these situations:

- **Make every attempt to safely move out of the aggressive driver's way.**
- **Do not challenge an aggressive driver by speeding up or attempting to "hold your own" in the travel lane.**
- **Always wear your seat belt. It will hold you in your seat and behind the wheel in case you need to make an abrupt driving maneuver, as well as protect you in a crash.**
- **Avoid eye contact with the aggressive driver.**
- **Ignore gestures and refuse to return them.**
- **Report aggressive drivers to the appropriate authorities by providing a vehicle description, license plate number, location and, if possible, direction of travel.**
- **If you have a cell phone and can use it while driving safely, call the police. Many have special numbers such as 911.**

Light My Fire

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For Soldiers, working and training outdoors is just part of the job. As another winter approaches, some Soldiers will choose to kill the chill with space heaters and stoves. While heaters may do a good job warming a tent on a cold winter's night, they also significantly increase Soldiers' exposure to fires and carbon monoxide (CO) hazards.

Did you know fire can engulf a tent in just 10 seconds and destroy it in 60 seconds? That gives Soldiers little time to react. In an effort to combat the risk of tent fires, the product manager, Force Sustainment Systems, manages a family of space heaters authorized for use by Army units. Units alerted for deployment should assess their environmental requirements versus on-hand space heaters and order the required heaters before deployment. Approved and tested Army personnel heaters include:

- **H-45 space heater (NSN 4520-01-329-3451):** The H-45 replaces the old potbelly M-1941. The H-45 will heat general purpose and TEMPER tents and burns liquid and solid fuels.
- **Arctic space heater (NSN 4520-01-444-2375):** The Arctic heater replaces the gasoline-burning M-1950 Yukon heater and is a lightweight, portable heater for five- and 10-man Arctic tents. The Arctic heater burns liquid and solid fuels.
- **Small space heater (NSN 4520-01-478-9207):** The small space heater is ideal for use in smaller tents such as the four-man Soldier/crew tent. It burns liquid fuel and has a built-in tank, precluding the need for an external fuel can and stand.
- **Convective space heater (NSN 4520-01-431-8927):** The convective space heater provides forced hot air for tents and shelters. This heater generates its own power and recharges its battery.
- **Thermoelectric fan (NSN 4520-01-457-2790):** The thermoelectric fan is a compact, self-powered unit that fits on top of any military tent heater. The fan uses some of the heat to turn the fan blades, which circulates heated air, improves comfort and saves fuel.

DID YOU KNOW?

From fiscal 2004 to 2007 in Iraq, the Army lost more than $1 million of equipment due to electrical fires. To prevent electrical fires, use Underwriters Laboratory (UL)-certified electrical products, don't overload electrical circuits and conduct regular fire inspections to search for and correct electrical hazards.

FYI

The fire safety regulation has been changed. Army Regulation (AR) 420–1, *Army Facilities Management*, **Feb. 19, 2008, supersedes AR 420-90,** *Facilities Engineering, Fire and Emergency Services*, **Dec. 10, 1997. Units and safety personnel, update your fire and safety checklist!**

Another hazard associated with tent heaters is CO, a poisonous, colorless, odorless and tasteless gas. It is produced as a result of the incomplete burning of natural gas and other carbon-containing materials such as kerosene, oil, propane, coal, gasoline and wood. When breathed into the body, CO enters the blood and deprives the heart, brain and other vital organs of oxygen.

Low levels of CO can result in shortness of breath, mild headaches and nausea. These symptoms are often confused with food poisoning, influenza and other illnesses. At moderate levels, individuals exposed to CO may experience tightness across the chest, severe headaches, dizziness, drowsiness and nausea. Prolonged or high exposures may result in vomiting, confusion, muscle weakness, collapse and even death. Leaders must ensure Soldiers are trained to recognize potential sources of CO and the symptoms of CO poisoning.

Before using a space heater or stove in a tent, keep the following tips in mind:

- All heaters and stoves should be operated in accordance with the applicable technical manual.
- Have a fire guard when heating shelters at night.
- Place stoves in sandboxes when heating tents with wooden floors.
- Even in extreme cold, do not operate heaters at full capacity.
- In the event of a tent fire or suspected presence of CO, first and most importantly, evacuate the tent.

Freezing temperatures can make sleeping in a tent a miserable experience. By following the proper precautions when using space heaters or stoves, Soldiers can ensure they'll stay warm and safe on the coldest of nights.

The call of the wild

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Hunting season is here again and not a moment too soon. There is nothing quite like getting out in the woods and touching, smelling and being a part of nature. Even if you don't hunt, just being surrounded by the sights and sounds of the forest calms the soul. However, whatever your reason for being there, the great outdoors can be a dangerous place if you are not properly prepared.

Most hunters have their favorite "spots" and know the lay of the land. Their private hunting grounds are just a short distance away, with their stand not far from the lodge. But for others, hunting in wildlife management areas or remote-access locations can take you several miles into some pretty rugged country. Whichever type hunter you are, having the proper survival gear can be the difference between life and death should you encounter any unexpected problems.

Most accidents involving hunters are either self-inflicted or caused by poor planning. Both can be deadly. A simple walk 300 yards into the woods can be as dangerous as a four-mile hike through backcountry if you're not prepared. Hypothermia, blood loss, shock and trauma can all pose a deadly threat to hunters. Before heading out, take the Boy Scout motto to heart – "Be Prepared."

By following a few simple safety guidelines, your hunting trip can have a happy ending. That way, you can live to tell your grandchildren stories of that 30-point buck you see every year. Keep these tips in mind when planning a hunting trip:

- Always let someone know exactly where you are hunting, who you'll be with and when you'll return. Leave a map with your hunting "spots" inside your vehicle so help can find you if you don't come home on time. Carry a cell phone or two-way radio.
- Always carry a survival kit in your backpack and restock it every season before opening day.
- Know how to survive. Take a course or read a book on techniques unique to your location. Know how to obtain water, food and shelter, with water being the most important. The smallest tip could save your life. Play the "what-if" game.
- Learn first aid and know how to use it on yourself if necessary. Practice self-administered first aid. You'll have a better grasp on your limitations and be able to react instinctively when seconds count.
- If using a treestand, make sure you understand and follow the manufacturer's instructions. Select a live tree with a diameter that matches the requirement for your treestand. Before each use, inspect the treestand for loose, missing or broken parts. Also, always wear a safety harness when climbing or in a treestand.
- If using an all-terrain vehicle (ATV), be sure you have taken a course in ATV safety, wear all necessary personal protective equipment and slow down so you have control. According to the Consumer Product Safety Commission, there were more than 8,100 ATV-related fatalities between 1982 and 2006.
- Always maintain safe hunting practices and make sure your buddies do likewise. Leave the alcohol at home. It has no place in the field.
- Treat every gun as if it were loaded and practice safe gun handling every time you touch a gun. Never climb while holding a gun. Always keep the safety in the "ON" position until you are ready to fire.

Finally, most states require hunters to attend a safety course before they can be issued a hunting license. If you have children who will be hunting with you this year, consider attending the course with them. Doing that together builds a special bond that is priceless. You also just might learn something in the process. I know I did.

FYI

Before heading out to bag your trophy buck, make sure you bring along a survival kit. A good survival kit should fit inside a fanny pack and weigh just a little more than 4 pounds. A good fanny pack or a pocket in a backpack is all you'll need. Here are some items your kit should include:

- A lightweight nylon sweatsuit (be prepared should you have to spend the night)
- Waterproof matches or lighter
- Compass or GPS
- A sturdy, sharp knife
- Duct tape
- Water purification tablets
- Collapsible water bottle
- High-calorie food (candy bars) or beef jerky
- Nylon string or parachute cord
- Signal mirror
- Large handkerchief
- Ax, hatchet or portable saw
- Flashlight and back-up batteries
- Multipurpose tool

Is Army Aviation Prepared to Respond to a CONUS Disaster?

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Hurricanes, tornados, wildfires, mudslides and earthquakes are some of the large-scale recurring natural disasters our nation has faced historically and will, no doubt, face again.

These disasters aren't the only threat we Americans face on our own soil. Top-level government officials, including the President of the United States and directors of national security and the Federal Bureau of Investigation, have warned that terrorists want to strike America again.

All these disasters require the unique capabilities possessed by the military, but this doesn't mean the Army will be the sole responder. However, Army aviation needs to be proactive and prepared to respond and seamlessly integrate with other responders to assist our citizens.

In 2006, borne out of an analysis of the Hurricane Katrina response, the U.S. Government Accountability Office (GAO) issued a statement of record on terrorism, unconventional threats and capabilities to the U.S. Senate Committee on Armed Services and U.S. House of Representatives House Armed Services Committee regarding the military's need to have better plans to respond to natural disasters.

Whether responding to a natural or manmade disaster (e.g., hurricane or terrorism), the requirement to respond as effectively and safely as possible is paramount in preventing loss and preserving Soldiers' lives and equipment.

Part of an Army aviation commander's responsibility is to ensure the corrective actions/controls to improve performance are included in unit standing operating procedures (SOP) as specified in Department of Army Pamphlet (DA Pam) 385-90, *Army Aviation Accident Prevention Program*, paragraph 1-4 (j) (11). Commanders should consider reviewing and revising unit SOPs and safety programs to ensure they synchronize with the National Response Plan (NRP). President George W. Bush issued Homeland Security Presidential Directive-5 to create and implement the NRP. The NRP doesn't create new authorities. Instead, it unifies and enhances incident management capabilities and the resources of several individual agencies and organizations acting under their own command structure during response to a vast array of potential threats and hazards. The overall purpose of the NRP is to align federal capabilities and resources into a unified, all-disciplines approach to the management of domestic incidents.

Some specific issues to consider in planning are how to integrate with large numbers of personnel from different commands; how command, control and communications will be conducted; and how situational awareness will be acquired through performing preliminary damage assessments.

Addressing problems identified in lessons learned reports, before disaster strikes, will assist you in effectively assessing and controlling risk during impromptu large-scale incidents involving multiple federal, state, local and non-governmental organizations.

The GAO Report and NRP referred to in this article are available at the links to the right. The links provided are not the only references you should review, but they will be a good place to start.

FYI

Government Accountability Office (GAO) Report: http://www.gao.gov/new.items/d06808t.pdf

National Response Plan (NRP): http://www.dhs.gov/xprepresp/committees/editorial_0566.shtm

National Response Team (NRT): "Collaborative Communications During Emergency Response," http://www.au.af.mil/au/awc/awcgate/nrt/jic-model.pdf

DoD Instruction 2000.18: "Department of Defense Installation Chemical, Biological, Radiological, Nuclear and High-Yield Explosive Emergency Response Guidelines," Dec. 4, 2002, http://www.dtic.mil/whs/directives/corres/pdf/200018p.pdf

Defense Support of Civilian Agencies (DSCA) Handbook: http://www.au.af.mil/au/awc/awcgate/army/dsca_handbook.pdf

European Agreement Concerning the International Carriage of Dangerous Goods by Road (ADR) 2001, Chapter 7: "Managing the Consequences of Domestic Weapons of Mass Destruction Incidents," DoD Annual Report to the President and Congress, http://c21.maxwell.af.mil/dod/adr01-ch7.pdf

Center of Excellence in Disaster Management and Humanitarian Assistance: http://www.coe-dmha.org/

National Domestic Preparedness Office (NDPO): "On-Scene Commander's Guide for Responding to Biological/Chemical Threats," http://www.au.af.mil/au/awc/awcgate/ndpo/oscg_ndpo.pdf

ROOM to live

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Do you have room to live? What does that mean if you're in your vehicle on the highway? The simple answer is your vehicle was designed to provide a protected living space – room to live – to help you survive an accident. The problem is, far too many people choose not to wear their seat belts and are thrown out of that room during a rollover crash. Afterward, a family member will often say, "I can't believe he wasn't wearing a seat belt. He always wore one."

Do people wear their seat belts as often as they say, or is life so cruel that the one time they don't, they're ejected in a rollover crash?

While having a crash might be an accident, surviving it doesn't have to be. If you're going to survive, you need the following things working in your favor. If even one of these doesn't, you will not be having a good day.

- Container
- Restraints
- Energy absorption
- Environment
- Post-crash factors

In today's vehicles, the container is designed to provide you with a survivable living space during a crash. However, that only works if restraints are used – specifically, your seat belts. Your car is designed to absorb the energy of a collision while protecting you inside the occupant compartment. If seat belts aren't used, then the environment comes into play as you're slammed against your windshield, dash and other parts of your vehicle's interior. And don't count on air bags – great as they are – to save you. If unrestrained, you'll simply slide around them, possibly increasing the chance of being thrown from the vehicle. Finally, post-crash factors are what happen when you survive being ejected, only to land in the road and become a speed bump.

> "While **HAVING** a **CRASH** might be an **ACCIDENT**, **SURVIVING** it **DOESN'T** have to be."

You often hear about this happening during single-vehicle accidents. The driver goes too fast around a corner, loses control and rolls the vehicle. As the vehicle rolls, the unrestrained driver is thrown from the vehicle into a pole or tree or some other immovable object. You look at the accident picture and see the crashed car with a body lying nearby. As you look closely at the car, you wonder, "Was there room to live? Did the victim die needlessly because they didn't wear a seat belt this (one) time?"

In these accidents, dying is the "easy" part; it's living with that loss that can be unbearable. Families are left not only to mourn their loss, but to ask the unanswerable question – "why?"

As Soldiers, we have adapted to accept a level of risk most others cannot understand. However, that shouldn't cause us to be reckless. We need to wear our seat belts – not just sometimes, but all the time. If not for ourselves, we should do it for our Families. Every time we get behind the wheel, we have a choice of which "room" we want to be in. We can either choose room to live inside our car, or room to lie inside our casket. Which suits you better? Which would your Family prefer? «

CASE IN POINT

Take a look at the car below. From the outside, it looks pretty mangled. Now take a look at the photo of the car's interior. Although the roofline was smashed down a bit on the driver's side and the door pushed in against the seat, there was plenty of room to live. Notice the air bag? It deployed as advertised.

Everything that could be engineered into the car to protect its driver during this accident functioned properly. But the driver didn't survive. Going too fast around a curve, he lost control, went off the road and struck a telephone pole. The impact flipped his car and ejected him into a tree, where he died.

The driver's parents thought he always wore his seat belt – they'd told him to plenty of times. Was this the only time he ignored their advice? We'll never know. All we know for sure is he'll never do it again.

ASG-QATAR RECEIVES SAFETY AWARD

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Area Support Group-Qatar Public Affairs Office
Camp As Sayliyah, Qatar

CAMP AS SAYLIYAH, Qatar – Area Support Group-Qatar (ASG-QA) was named the best garrison safety program in the Army for fiscal 2007. Lt. Gen. Jim Lovelace, U.S. Army Central commanding general, recently presented the Secretary of the Army and Chief of Staff of the Army Exceptional Organization Safety Award to Col. David G. Cotter, ASG-QA commander. The command facilitates base operations services and security at Camp As Sayliyah.

« Lt. Gen. Jim Lovelace, U.S. Army Central commanding general, presents the Secretary of the Army and Chief of Staff of the Army Exceptional Organization Safety Award to Col. David G. Cotter, Area Support Group-Qatar commander.

Robert East, the installation safety manager at Camp As Sayliyah, was also recognized. Lovelace presented East with the Individual Award of Excellence in Safety, contractor category. Commonly known as "Safety Bob," East reaches out to tenant units and organizations trying to construct and implement effective safety programs.

Each year, Army officials commend installations, units and individuals for accident prevention efforts and safety-minded service. They strive to identify Army components that clearly reflect dedicated service in supporting Army readiness and mission success. For a more detailed list of the fiscal 2007 awardees, see the June issue of *Knowledge* online at https://crc.army.mil/knowledge_online. «

» Lovelace presents Robert East the Army Individual Award of Excellence in Safety, contractor category.

THERE'S A NEW TOOL IN TOWN . . .

GRAT

GROUND RISK ASSESSMENT TOOL

RICHARD SCOTT
U.S. Army Combat Readiness/Safety Center
Fort Rucker, Ala.

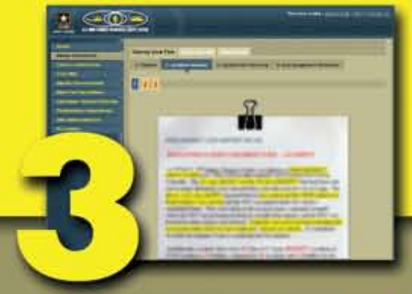
The U.S. Army Combat Readiness/Safety Center (USACRC) has developed a new risk assessment tool to assist Leaders and Soldiers in identifying accident hazards and controls for a variety of ground operations and off-duty activities.

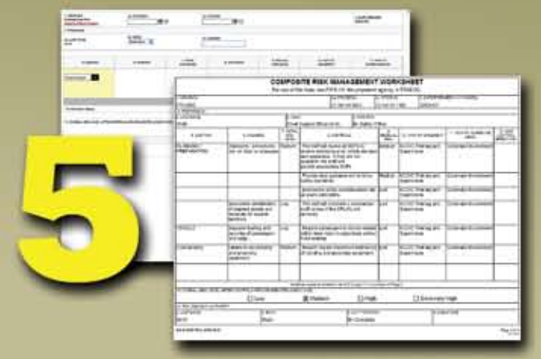
The Ground Risk Assessment Tool (GRAT) is designed to assist Leaders in gathering information to aid in applying the composite risk management (CRM) process. GRAT helps users capture hazards and controls they may not have considered and produces a CRM worksheet (DA Form 7566) for a specific mission or task. The tool contains a user-friendly list of regulations and publications from which information can be obtained to assist with building the worksheets.

GRAT is formatted in five integral pieces – each of which will quickly enhance the user's ability to obtain information required for worksheet completion.

- Part one allows the user to review statistical accident data.
- Part two displays accident vignettes related to the user's selected mission, task or activity.
- Part three allows users to review the most recent accident summaries related to the task they selected.
- Part four contains a list of Army regulations and technical bulletins, along with training circulars and tactics, techniques and procedures from units in the field. These are provided to heighten awareness of hazards faced in the field and controls that have worked.
- Part five is an automated interactive CRM worksheet that is based on user input or selection of existing accident hazards and controls. Users can print and update the worksheet even after it is saved or e-mailed.

GRAT is designed to help commanders and their staffs in the risk management process. The USACRC will continuously update the tool with current, relevant information from Army units around the world, which will help Soldiers save time, learn from others' mistakes and integrate CRM into their thought processes. Using GRAT in concert with the military decision-making process will help Army Leaders at all echelons achieve success in their missions and make safety an integral part of their planning. «





AVIATION

AH-64

CLASS C D Model

During aircraft run-up, the crew experienced an auxiliary power unit (APU) failure and subsequent fire. The crew activated the onboard fire extinguisher system. With the help of the local fire department, the fire was successfully extinguished with minimal damage to the aircraft.

CH-47

CLASS A D Model

While hovering over a sling-load, the load began rolling along the ground caused by rotor wash from the hovering aircraft. A ground crewmember was fatally injured when the load rolled over him.

WAS THE LOAD RIGGED AND CERTIFIED IAW THE FM?

MH-47

CLASS C E Model

The aircraft experienced loss of oil pressure in both engine transmissions during a post-phase maintenance test flight (MTF) stop. A maintenance discrepancy is suspected.

WAS MAINTENANCE DONE USING THE PROPER STANDARDS?

OH-58

CLASS B D(I) Model

The aircraft mast-mounted sight upper shroud separated from the aircraft during an MTF.

UH-1

CLASS C V Model

The aircraft contacted vegetation during upslope training. Suspected mast bumping occurred as the skids became entangled in the vegetation.

UH-60

CLASS B L Model

On final approach during a daytime training instrument landing system (ILS) procedure, the aircraft experienced a lightning strike. The crew experienced a stabilator auto mode failure audio warning and master caution light. The crew terminated the ILS and conducted a roll-on landing. Late report.

CLASS C

The aircraft contacted a tree during landing, damaging the underside, to include No. 1 FM antenna and stabilator.

DURING APPROACH TO LANDING, DID THE CREW CONDUCT A LOW-LEVEL LZ RECON FOR SUITABILITY, IDENTIFYING OBSTACLES AND ELECTING THE PROPER LANDING AZIMUTH?

UC-35

CLASS C

Lightning strike damage was identified during postflight inspection. The crew reported only moderate turbulence and hail during the flight and completed the mission without experiencing any further damage.

UAS

MQ-5B

CLASS A

The UAS drifted off course during student training and impacted hilly terrain. The UAS was destroyed.

RQ-11A

CLASS C

The air vehicle operator (AVO) experienced loss of computer link with the UAS shortly after launch. The UAS was tracked for 500 meters until the signal was lost. The UAS was not recovered.

CLASS C

Controllers lost video feed link with the UAS during flight and landed in a river. The UAS was not recovered.

RQ-11B

CLASS C

The AVO experienced loss of video link with the system during flight. The UAS was not recovered.

While flying reconnaissance operations, the UAS was 34 minutes into flight when the battery started losing voltage about one volt every couple of seconds. The battery soon lost the ability to power the motor and the UAS crashed into a building. The UAS was not recovered.

RQ-7B

CLASS B

The UAS experienced an electrical malfunction during the launch sequence and crashed shortly after becoming airborne.

The controller lost computer link with the UAS shortly after takeoff and crashed into a nearby river. The UAS was deemed a total loss after recovery.

ARMY AIRCRAFT LOSSES

Fiscal 2002 to Present

as of August 5, 2008

AH-64A/D	11/51
U/MH-60A/L	9/28
C/MH-47	8/18
OH-58D	11/30
TOTAL	39/127

ARMY GROUND LOSSES

Fiscal 2008

through July 31, 2008

AMV	17/14
ACV	7/6
PERSONNEL INJURY includes weapons handling accidents	36/30
FIRE/ EXPLOSION	3/3
PROPERTY DAMAGE	5/0
TOTAL	68/53

The UAS was force-landed to the drop zone during training. The recovery chute was deployed, but the UAS touched down in a non-level attitude and contacted the ground wing first.

CLASS C

The UAS was launched on a routine mission. During the climb to altitude, the UAS's engine temperature elevated, resulting in an RPM fluctuation and subsequent engine failure shortly after launch. The recovery chute was deployed and the UAS landed with damage.

The UAS was launched on a routine mission when, about 25 feet above ground level (AGL), the TALS system issued a "cut engine" command and the vehicle's engine responded accordingly. The UAS sustained damage, but was repaired and returned to service.

GROUND

ACV

CLASS A

A Soldier serving as the gunner in an M1117 Armored Security Vehicle (ASV) was killed when the vehicle overturned during a convoy security mission. The driver of the ASV was maneuvering through narrow streets and crowded areas when he lost control of the vehicle.

CLASS B

A Soldier broke his leg when his ASV overturned. The vehicle crew was in the process of towing an M1114 HMMWV at the time of the accident.

AMV

CLASS A

A Soldier was driving a Light Medium Tactical Vehicle when the brakes locked up, causing it to enter the opposing lane and collide with a civilian privately owned vehicle (POV). The driver of the POV was fatally injured.

Personnel Injury

CLASS A

A Soldier drowned at a beach when he attempted to save two minors on a float who were being pulled out to sea by a rip tide. The Soldier's body was recovered the next morning.

A Soldier was fatally wounded by his M9 weapon following a unit mission. The Soldier had laid the weapon down in his quarters and it fell to the floor. When his roommate picked up the weapon to return it, it fired, striking the Soldier in the torso.

A Soldier was killed when he fired a weapon he didn't realize was loaded and suffered a gunshot wound to the head. Alcohol was a factor in the incident.

DO YOUR SOLDIERS UNDERSTAND THAT MIXING ALCOHOL AND AMMUNITION WHEN HANDLING A FIREARM IS A RECIPE FOR A DEADLY ACCIDENT?

A Soldier was killed in a hit-and-run accident while attempting to cross an intersection on foot.

A Soldier was running on railroad tracks while listening to his mp3 player when he was struck from behind by a train. The engineer sounded the train's horn and attempted an emergency stop, but was not able to avoid the Soldier, who was killed on impact.

CLASS B

A Soldier suffered a permanent partial disability injury while trying to clear a blockage from the grass chute on his lawnmower. The Soldier failed to turn off the lawnmower before he removed the safety cover and put his hand inside the area where the blades are located, resulting in the amputation of his right index finger.

DO YOUR SOLDIERS APPLY COMPOSITE RISK MANAGEMENT TO ALL THEIR OFF-DUTY ACTIVITIES?

DRIVING

POV

CLASS A

A Soldier was driving his vehicle with four other Soldiers riding as passengers when a civilian pickup truck cut him off at an intersection. As the Soldier attempted to avoid the pickup, his vehicle went out of control and rolled over. One of the Soldiers riding as a passenger was killed.

A Soldier was driving his vehicle with two friends riding as passengers when it overturned on a rural road. The Soldier suffered a permanent total disability.

POM

CLASS A

A Soldier was operating his motorcycle at high speed while passing other motorists when he lost control and crashed. The Soldier suffered fatal injuries.

A Soldier was participating in a sanctioned sportbike race when the biker in front of him suddenly slowed. As the Soldier attempted to avoid a collision, he struck a wall and suffered a permanent total disability injury.

A BARRIER BETWEEN LIFE AND DEATH

Stopping for a minute could keep you from dying in a second.

Recently, a Soldier died in a privately owned vehicle accident when he attempted to cross railroad tracks and was struck by a train. The warning signals at the crossing were activated and the gates were down. The train hit the passenger side of the vehicle. The Soldier and his passenger were both pronounced dead at the scene.

A Soldier was operating his motorcycle when he struck a curb while turning and was thrown from the bike and into a tree. The Soldier suffered fatal injuries.

A Soldier was operating his newly purchased motorcycle when he lost control while negotiating a curve. The Soldier was thrown from the motorcycle and killed.

DO YOU KNOW WHEN ONE OF YOUR SOLDIERS BUYS A MOTORCYCLE? DO YOU ENSURE THAT SOLDIER HAS BEEN TRAINED TO RIDE SAFELY?

A Soldier was operating his motorcycle when he collided with a civilian vehicle after proceeding through a yield sign at an intersection. The Soldier was fatally injured.

A Soldier was killed while operating his motorcycle when he failed to negotiate a curve and struck a fence.

A Soldier was operating a borrowed motorcycle when he lost control, went off the highway and down a steep embankment. The Soldier suffered fatal injuries.

A Soldier was operating his motorcycle when he ran a stop sign and broadsided a pickup truck that was proceeding through the intersection. The Soldier suffered fatal injuries.

ALCOHOL PLAYED A ROLE IN THIS TRAGEDY. HAVE YOU STRESSED TO YOUR SOLDIERS THE IMPORTANCE OF NOT DRINKING AND RIDING?

A Soldier was operating his motorcycle en route to duty when he collided with a van that pulled into his path. The Soldier was wearing his personal protective equipment, to include a full-face helmet, but died from his injuries.

ATV

CLASS A

A Soldier had been operating his all-terrain vehicle (ATV) at a state park when he was later found on the ground unresponsive by another rider. The Soldier had apparently fallen from the ATV. He was transported for treatment but died four days later.

Editor's note: Information published in the accident briefs section is based on preliminary loss reports submitted by units and is subject to change. For more information on selected accident briefs, e-mail knowledge@crc.army.mil.

MAKE SOUND RISK DECISIONS.
REDUCE ACCIDENTAL LOSS.
INCREASE COMBAT POWER.

GRAT
GROUND RISK ASSESSMENT TOOL

https://crc.army.mil/grat

The Ground Risk Assessment Tool is designed to aid in mitigating risk by reinforcing the five-step composite risk management process and providing users with potential accident hazards and controls. Using this tool in concert with the military decision-making process will help Army Leaders achieve success in their missions and make safety an integral part of their planning. Visit the USACRC Web site today and try it out for yourself.

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https://crc.army.mil

ARMY SAFE IS ARMY STRONG

Planning is key to a safe, enjoyable vacation. Make sure your Family, vehicle and home are all prepared to enjoy stress-free travels.

safety begins with Teamwork

You're ready to get on the road - is your vehicle ready?

- Do a pre-travel vehicle inspection to avoid costly and inconvenient repairs.
- Check the battery and cables, tire inflation and tread, fluid levels and belts and hoses.
- Make sure child safety seats are properly installed and all seat belts are in working order.

Did you check and double-check?

- Use a packing list to help you remember everything you need for your trip.
- Prepare for an emergency – have your cell phone, charger and list of important numbers.
- Make sure at least two other people know your travel plans and daily itinerary.

While you're relaxing, could burglars be hard at work in your home?

- Ask a neighbor to watch your house and provide them with emergency contact information.
- Lock all doors and windows and secure garage doors, sheds and gates.
- Avoid the empty-house look – stop mail, arrange for lawn care and use auto timers on lights.

TRAVEL RISK

TRiPS

PLANNING SYSTEM

https://crc.army.mil

Remember, if your travel plans put you in the driver's seat, you need to access the Travel Risk Planning System (TRiPS) to receive valuable hazard and risk mitigation information. TRiPS expands leadership engagement by providing supervisors and chain of command visibility of subordinates' travel plans and potential risks.

U.S. ARMY

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https://crc.army.mil

ARMY SAFE IS ARMY STRONG

101 CRITICAL DAYS OF SUMMER

26 May – 1 Sept 2008

Don't leave the pier without it!

101 CRITICAL DAYS OF SUMMER

26 May - 1 Sept 2008

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ARMY SAFE IS ARMY STRONG

RIDING THE RANGE: CREATING A MOTORCYCLE TRAINING PROGRAM p. 28

KNOWLEDGE

VOL 2 OCTOBER 2008

OFFICIAL SAFETY MAGAZINE OF THE U.S. ARMY

TRAIN FOR THE WEATHER p. 5

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KNOWLEDGE
OFFICIAL SAFETY MAGAZINE OF THE U.S. ARMY

contents

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Mission statement: USACRC supports our Army by collecting, storing, analyzing, and disseminating actionable information to assist Leaders, Soldiers, Families, and Civilians in preserving/protecting our Army's combat resources.

We welcome your feedback. Please e-mail comments to **knowledge@crc.army.mil**.

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A CHANGE IN THINKING

"The **GREATEST** paradigm **SHIFT** occurred due to a **CHANGE** in **THINKING** – **NOT** in **WHAT** Soldiers **THINK**, but in **HOW** they **THINK.**"

Safety is an intangible. We can't count it to determine how much we have or how much we need. We can't issue it to Soldiers to keep them safe. Yet every Leader in our Army is responsible for protecting Soldiers, as well as instilling in them a sense of personal responsibility for their safety. What a daunting task.

For the last two years, it has been my distinct honor and privilege to serve as the director of Army safety and commanding general of the U.S. Army Combat Readiness/Safety Center. In my time here, I have had the opportunity to see, and participate in, the ongoing transformation of Army safety from a reactive culture to a proactive and predictive culture.

Leaders and Soldiers have changed the Army's safety culture. The greatest paradigm shift occurred due to a change in thinking – not in what Soldiers think, but in how they think. You have taken the way we think about safety to the next level. So what have we, as an Army, accomplished to promote safety?

We have made great strides in reaching Soldiers by targeting influencers and making them part of the safety solution. We also targeted safety messages to specific demographic groups and developed user-friendly delivery methods for ease of use. Soldiers are Soldiers 24/7, and, beyond deployments, the bulk of their time is spent outside the oversight of Leaders. Keeping Soldiers safe while off duty is a challenge that requires out-of-the-box thinking and new approaches.

Understanding the influence of spouses and Family members, we expanded our safety team to include those who support the Soldier 24/7. No one knows the habits, thought processes and reactions of a Soldier better than his Family. With the Post-Deployment Family Engagement and BOSS Safety Factor kits, the Army enlisted the support of

Soldiers' loved ones. Both kits educate Soldiers and Families, make them aware of potential hazards and empower them to act as a positive safety influence in their Soldier's life.

Peer influence is another powerful tool. On a one-to-one basis, the "looking out" for a battle buddy has kept many a Soldier from harm, both on and off duty. Multiply this effort throughout the Army and you form a force truly comparable to a Band of Brothers. Young Soldiers might have difficulty recognizing risky behavior among their peers until they see the negative results firsthand. The injury or death of a brother in arms is not the way we want Soldiers to learn how to conduct themselves safely.

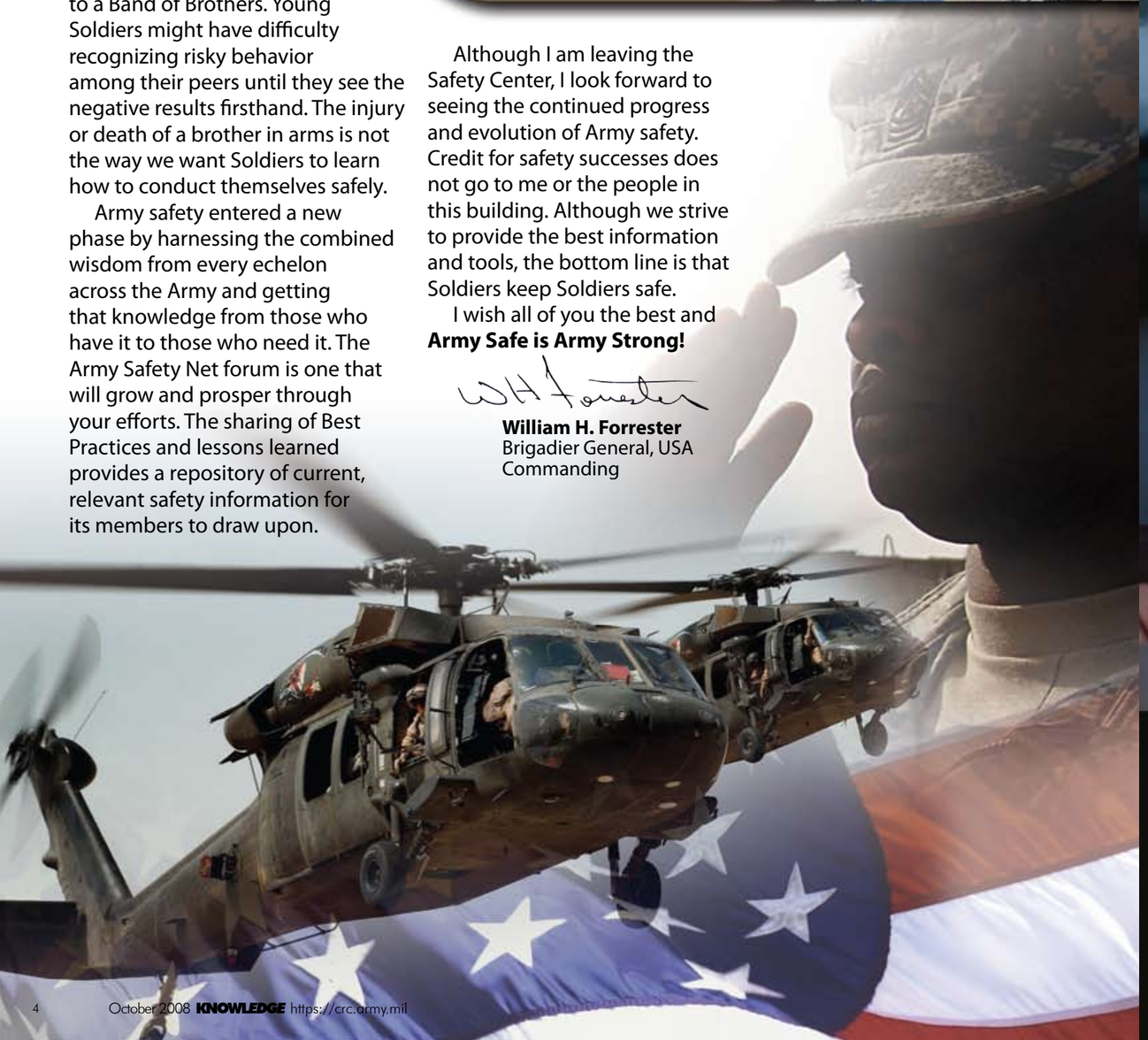
Army safety entered a new phase by harnessing the combined wisdom from every echelon across the Army and getting that knowledge from those who have it to those who need it. The Army Safety Net forum is one that will grow and prosper through your efforts. The sharing of Best Practices and lessons learned provides a repository of current, relevant safety information for its members to draw upon.

> "ARMY SAFETY entered a NEW PHASE by HARNESSING THE combined WISDOM from every echelon ACROSS the ARMY."

Although I am leaving the Safety Center, I look forward to seeing the continued progress and evolution of Army safety. Credit for safety successes does not go to me or the people in this building. Although we strive to provide the best information and tools, the bottom line is that Soldiers keep Soldiers safe.

I wish all of you the best and **Army Safe is Army Strong!**

William H. Forrester
Brigadier General, USA
Commanding



Every year, winter weather road conditions cause the loss of lives and serious injuries to Soldiers and civilians. To prevent this loss of personnel and equipment, we must be prepared to conduct operations in adverse conditions before winter begins.

TRAIN for the WEATHER

MICHAEL WOOD
U.S. Army Combat Readiness/Safety Center
Fort Rucker, Ala.

The Accident

An Army Motor Vehicle (AMV) was operating in snow and icy road conditions when the driver lost control and crossed into oncoming traffic. The AMV struck two vehicles, killing a civilian, injuring two Soldiers and destroying an Army vehicle.

What Happened?

A unit was tasked to refuel two AMVs and provide driver's training to a unit Soldier. To accomplish the mission, the Soldiers would travel on local roadways. They were given orders to clear the snow from their vehicles and conduct Preventive Maintenance Checks and Services (PMCS) and were briefed on the proper speeds for the winter road conditions.

The roads were clear, but a light snow started to fall as the operation began. The snowfall continued to increase and the roads became covered with snow. As the driver crested a hill, the instructor/assistant driver advised the Soldier to slow down. The inexperienced driver pressed the brake pedal and the vehicle lost traction. The rear of the AMV jackknifed into the oncoming traffic lane, struck the rear of a civilian vehicle and then collided with a second civilian vehicle. The civilian driver of the second vehicle was killed in the collision. The Soldiers were wearing seat belts and suffered only minor injuries; however, the AMV was destroyed.

How Could the Accident Have Been Prevented?

Before vehicle operations, Leaders must know the weather and road conditions for the

mission route and always use composite risk management in mission planning. Other tips include:

- **Licensing and Training.** Ensure all drivers are trained and licensed and their licenses (OF 346) and driving records (DA 348) are properly annotated. Soldiers must have winter driver's training before operating a piece of equipment in winter weather conditions.
- **PMCS.** Train Soldiers to conduct proper PMCS on equipment they will operate. Ensure tire chains are packed on the vehicle and Soldiers know how to install them. After an accident, it is far too late to think about what you could have done to prevent it.
- **Braking.** Braking procedures are different for vehicles equipped with antilock brake systems (ABS). Check your -10 to see which type of brakes are on your vehicle. Also, ensure Soldiers understand how the system operates. Tips for braking vehicles with ABS and non-ABS are below.
  - **ABS.** Do not pump the pedal. Rather, keep constant pressure on the pedal. You may experience a slight vibration, which is normal. Continue to hold the pedal down. Letting up on the pedal will deactivate the ABS and prevent it from working properly when you might need it most.
  - **Non-ABS.** Keep your heel on the floor between the brake pedal and the accelerator. Use your toes to press the brake pedal until the vehicle's tires lock up, and then ease off the brake pedal until you reach the point where the tires are no longer locked up.
- **Skidding.** When your vehicle is involved in a skid, ease your foot off the accelerator or brake pedal, avoid slamming on the brake, downshift if you have a manual transmission, look and steer in the direction you want the vehicle to go and do not oversteer. Make necessary steering adjustments smoothly and gradually. If you overcorrect at first, be prepared for a skid in the opposite direction. Again, remember to look and steer where you want the vehicle to go. Continue to steer until your vehicle recovers from the skid. Once the vehicle is under control, adjust your speed to the road conditions.

Road conditions are also an important factor when driving in winter weather. One of the most dangerous conditions is black ice, which occurs when ice forms on an asphalt surface. The conditions are right for black ice if you have to scrape frost or ice from your vehicle's windshield. If you find yourself on a patch of black ice, don't panic. Take your foot off the gas pedal and steer gently in the direction you want the vehicle to go. Don't slam on the brakes, which will only make the situation worse, and don't make quick turning maneuvers.

Certain areas of roadways – such as bridges, overpasses and underpasses – can also present challenges. Adjust your speed for bridges and overpasses, which freeze before other road surfaces because of the airflow both over and under the structure. Learn how to recognize the hazard. A good rule is to slow down when approaching bridges and places where the road is in the shade, especially late in the afternoon and after dark, when temperatures are lower.

The most important measure drivers can take is to drive defensively. Pay attention to the actions of other drivers; anticipate what they could do wrong and plan what actions you might need to take to avoid involvement. The most common mistakes drivers make in bad weather are driving too fast for conditions and underestimating stopping distances. The best advice for driving during winter is to slow down and concentrate on safe, cautious driving.

When you're planning your daily trips or convoys this winter, be sure to train and document the training on the driver's record and license. The U.S. Army Combat Readiness/Safety Center's (USACRC) Driver's Training Toolbox has a series of winter driving presentations which can assist you in conducting training. It can be found on the USACRC Web site at https://crc.army.mil/drivertrainingtoolbox.«

THE THREE P'S

CHIEF WARRANT OFFICER 5 ROBERT REYNOLDS
Third Army/U.S. Army Central Command
Fort McPherson, Ga.

Winter weather conditions can challenge the best drivers. Before hitting the road, make sure you know the three P's of safe winter driving.

PREPARE

- **Maintain your vehicle.** Check your battery and tire tread; keep your windows clean and clear of debris; put no-freeze fluid in the windshield washer reservoir; and check your antifreeze.
- **Make an emergency kit.** Stock your kit with a flashlight, jumper cables, abrasive material for traction (sand, kitty litter or even floor mats), shovel, snow brush and ice scraper, warning devices (such as flares and warning triangles) and blankets. For long trips, carry food, water, medication and a cell phone. If stranded, stay with the vehicle; place bright markers on the antenna or windows; and turn on the dome light. If you run your vehicle, make sure you clear the exhaust pipe. Run the vehicle just enough to stay warm.
- **Plan your route.** Allow plenty of time to reach your destination (check the weather and leave early if necessary); be familiar with the maps and directions; and let others know your route and arrival time.
- **Practice cold-weather driving.** During daylight, rehearse maneuvers slowly on the ice or snow in an empty parking lot. Steer into a skid. Know what your brakes will do. Press firmly on antilock brakes and pump non-antilock brakes. Remember, stopping distances are longer on water- and ice-covered roads. Also, don't idle the vehicle for a long time with the windows up or in an enclosed space.

PROTECT

- Buckle up and use child safety seats properly.
- Never place a rear-facing infant seat in front of an airbag.
- Keep children 12 and under in the back seat, where it is much safer.
- Sit back at least 10 inches from an airbag.

PREVENT

- Never mix drugs and alcohol with driving.
- Slow down and increase your following distances.
- Keep your eyes open for pedestrians walking in the road.
- Avoid fatigue – get plenty of rest before the trip, stop at least every three hours and rotate drivers whenever possible.

Don't let winter weather turn you into a driving statistic. Follow the three P's of safe winter driving so you can safely make it to your destination.«

GRAVEL Bites!

WARRANT OFFICER 1 ROGER KOSS
3rd Armored Cavalry Regiment,
66th Military Intelligence Company
Fort Hood, Texas

Whether it's a convoy operation or a trip to another city with your Family, it's always a good idea to do a map or route recon. You'll have the advantage of locating rest stops, places to fill up or, just maybe, some possible road hazards. But I didn't do that during a winter ride from my home in Colorado Springs to Woodland Park, and it literally proved to be my downfall.

I opened my garage and rolled my bike out into a beautiful winter day, the snow around me capped by a dazzling blue sky. I looked over my bike, making sure I checked my lights, tire pressure and fuel just as I had been taught in my Motorcycle Safety Foundation (MSF) training. I put on all the required personal protective equipment (PPE), to include a full-face helmet and a thick canvas riding jacket, and headed on my way.

My route would take me through Colorado Springs on Powers Boulevard and then onto Highway 24. There, I would exit and drive through the city of Manitou Springs before getting back onto Highway 24, headed toward Woodland Park.

The ride through Colorado Springs was uneventful until I reached the onramp for Highway 24. As in many other cities that experience heavy snow, crews spread a mixture of rock salt and gravel to help improve road conditions. When the ice and snow melts, the city sends out street sweepers to push the remaining gravel to the side of the road. Sometimes, they don't quite get it all.

I started onto the onramp for Highway 24. The onramp included a series of curves that went first to the right, then to the left and back to the right before merging onto the highway. I maneuvered into the curves the way I was taught in my MSF training – entering the first curve on the outside (away from the curve and near the line dividing the lanes) then cutting inside on the right curve and outside on the left curve as I prepared to merge onto the highway. Unfortunately, it didn't quite work out as planned.

As I leaned into the final curve, I noticed some gravel directly in my path. I tried to straighten up the bike and ride through it, but I didn't have enough time. The rear tire suddenly slid out from under me, sending my bike and me sliding down the pavement. However, instead of being on top of the bike, I was on the bottom, "cushioning" the bike's slide with my body! As I slid, I stuck out my right arm to keep my helmet from hitting the pavement.

I was fortunate not to suffer any serious injuries. My "battle scars" amounted to a section of road rash about the size of a quarter on my right elbow, along with some minor road rash on my right leg. And, although sticking out my right arm had saved my helmet from hitting the road, I had a very sore shoulder. Still, things could have been a lot worse and I was grateful that I was wearing my PPE that day.

Looking back, while I did a lot of things right that day, I made an assumption that later failed. Because the roads were typically cleared of gravel, I let down my guard. I didn't completely plan for all of the potential hazards in my environment. I assumed the roads would be cleared of gravel because they normally were. In my case, a map recon, at a minimum, would have helped me identify my potential hazards and improved my situational awareness. The good news is that although my bike and I took a good beating, I walked away from this one with a lesson learned. Thanks to my PPE, I am still able to go out and enjoy the road.

Take a few minutes to learn from my mistake. Plan for the hazards in your route before you hit the road. In the process, leave yourself a little extra margin for life's "little" surprises. When your hide suddenly becomes your bike's "traction patch" on the road, I can tell you from experience – "gravel bites!"«

> "PLAN for the HAZARDS in your ROUTE before you HIT the ROAD."

FIRE AND COMPLACENCY

AN EVER-PRESENT THREAT TO ARMY AVIATION

COMPILED BY THE KNOWLEDGE STAFF
U.S. Army Combat Readiness/Safety Center
Fort Rucker, Ala.

Fire is a threat we must consider in many aspects of our lives; however, in aviation operations, the possibility of a fire can be intensified by the quantity and the close proximity of fuel onboard the aircraft, the materials the aircraft components are made of and the limited ways we have to egress the aircraft. Couple these intensifiers with flying, and aviation becomes exponentially more dangerous.

Let's examine a scenario involving fire in a MEDEVAC UH-60A. Fortunately for the aircrew involved, this accident happened on the ground before they took off for their training mission and injuries were minimal. We'll also look at what led to the accident, what happened, what should have happened and what we can learn from the experience.

It was a perfect day for a training flight. The aircraft and crew were "first-up" for their military assistance to safety and traffic (MAST) mission and were approved for a routine night vision goggle crew proficiency/collective training flight during their 24-hour standby period. For the MAST mission, each aircraft was configured with the crashworthy external fuel system. The weather was agreeable, the preflight looked good and the crew mix seemed right for the mission. The pilot in command (PC) had more than 2,000 hours of flight time and over 800 hours in the UH-60A. The pilot (PI) had about 240 hours of flight time and more than 150 hours in the UH-60A. Both the crew chief (CE) and flight medic (MO) were senior in their experience with the aircraft and unit mission.

What Happened?

It was a typical day; the crew showed up at the hangar to assume their first-up duties according to the company standing operating procedures. The CE preflighted the aircraft and found no discrepancies. Later in the evening, the crew received the weather briefing, and the PI conducted a preflight of the aircraft and also noted no discrepancies. Both the CE and PI visually verified during their preflight that there were no leaks or evidence of fluids anywhere on the aircraft.

The crew performed

a crew brief and pushed the aircraft out of the hangar for run-up. During run-up, the PC was on the controls and the PI was on the checklist. Since this was the first flight of the day for this aircraft, the pilot started the engines with the fuel system selectors in the CROSSFEED position, as required by the checklist. With the fuel control levers in CROSSFEED, the PI started the No. 1 engine without issue and then started the No. 2 engine. With both engines at idle, and approximately one minute after engine start, the PC noticed the No. 2 fuel pressure caution warning panel light had illuminated. She turned the No. 1 fuel boost pump switch ON, which extinguished the No. 2 fuel pressure caution warning light. Without any mention to the crew regarding the No. 2 fuel pressure caution warning panel light, the PI continued with the checklist and the PC continued to hold the controls and monitor the instruments. At the conclusion of the run-up, the crew placed the fuel system selectors in the DIRECT position and proceeded with the health indicator test (HIT) without incident.

Following the HIT check, the next step on the checklist was "Fuel boost pump switches as required." The PI announced the step and turned both fuel boost pump switches ON. Subsequently, the crew conducted the external fuel tank transfer check, and the MO in the back left gunner's seat identified a high volume of fluid running out of the cabin ceiling gust lock access cover and onto his medical gear. The MO notified the CE directly, who verified the leak as fuel and announced the fuel leak to the pilots. The pilots immediately acknowledged the announcement of a leak; however, they never understood that it was a fuel leak or the large quantity of fuel that was leaking. Without any clarification as to the amount or type of leak, the PC elected to do a normal shutdown of the aircraft. When the PC turned on the auxiliary power unit (APU) to shut down the aircraft, the fuel ignited. The crew in the back announced "FIRE!" and immediately began to evacuate the aircraft while the PC continued to shut it down. Crash/rescue personnel extinguished the fire within 15 minutes. Unfortunately, 15 minutes of fire destroyed the UH-60A.

What Went Wrong?

Let's start from the beginning. When the No. 2 fuel pressure caution light illuminated, the PC failed to announce the presence of this caution light to the crew and further failed to announce her actions when she turned on the No. 1 fuel boost pump. Later, during the run-up sequence, the PI turned on both boost pumps without announcing his actions. Additionally, when the nonrated crewmembers in the back discovered the leak, the pilots didn't understand the emergency. The MO recognized the leak and the CE acknowledged the leak and determined it was fuel; nevertheless, the pilots never understood fuel was leaking in their aircraft or how much fuel had leaked.

These are classic examples of failures in crew coordination. But what about the fuel boost pumps? Should aviators turn them on or off? First, let's look at the requirements for flying with the fuel boost pumps in the ON position, according to the operator's manual:

(1) When using JP-4 or equivalent and flying at or above 5,000 feet mean sea level (MSL)

(2) As required during an emergency procedure

(3) When operating in crossfeed at any altitude and using JP-4

(4) During external extended range fuel system operations (engine bleed air only) and regardless of fuel type.

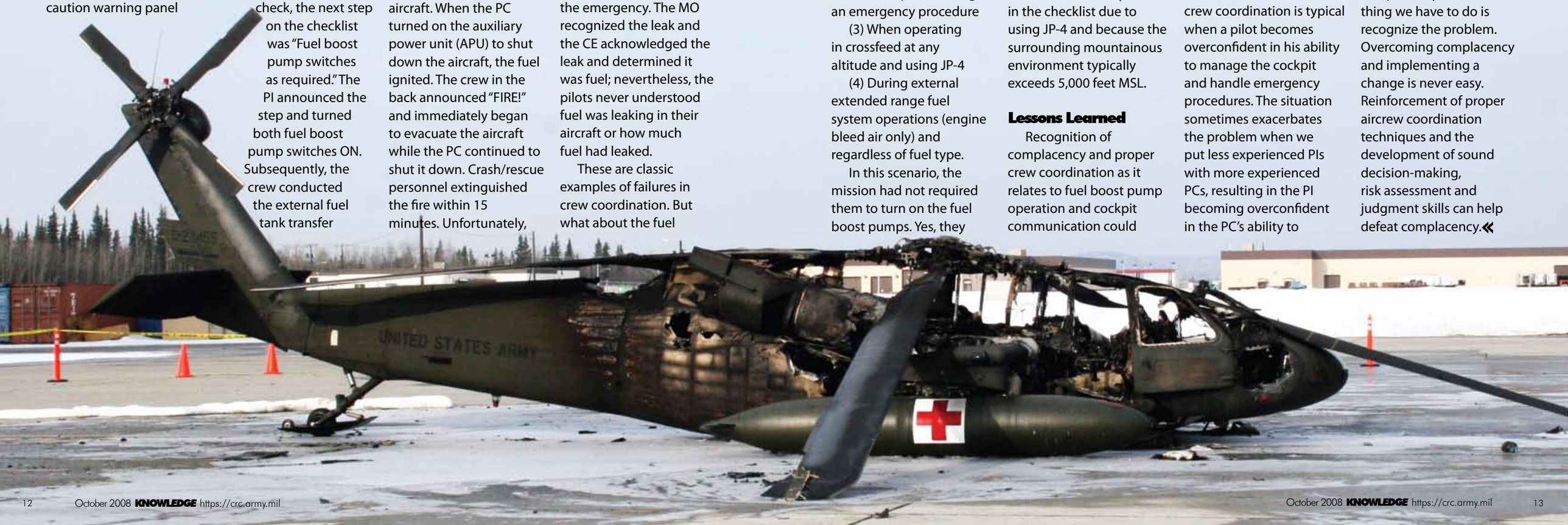
In this scenario, the mission had not required them to turn on the fuel boost pumps. Yes, they were using JP-4, but they were not above 5,000 feet MSL. The PC normally operated with the fuel boost pump switches in the OFF position unless she knew she was going to fly above 5,000 feet MSL. Conversely, the PI had been trained by unit instructor pilots to turn the fuel boost pump switches on at this point in the checklist due to using JP-4 and because the surrounding mountainous environment typically exceeds 5,000 feet MSL.

> "**REINFORCEMENT** of proper aircrew coordination techniques and the development of sound **DECISION-MAKING**, **RISK ASSESSMENT** and **JUDGMENT SKILLS** can help defeat complacency."

Lessons Learned

Recognition of complacency and proper crew coordination as it relates to fuel boost pump operation and cockpit communication could have prevented this fire. An estimated 4 gallons of fuel would not have been pumped onto the deck of the aircraft had the boost pumps not been turned on. Instead, because the UH-60A has a negative fuel pressure system, any fuel system integrity issues would have caused the engine to flame out. The error in crew coordination is typical when a pilot becomes overconfident in his ability to manage the cockpit and handle emergency procedures. The situation sometimes exacerbates the problem when we put less experienced PIs with more experienced PCs, resulting in the PI becoming overconfident in the PC's ability to execute the duties as the PC of the aircraft.

Complacency is difficult; however, as supervisors, PCs of aircraft and/or supervisors of maintenance operations, we have to be constantly on the lookout for crewmembers that show complacency and poor crew coordination techniques. How can aircrew members avoid overconfidence and complacency? The first thing we have to do is recognize the problem. Overcoming complacency and implementing a change is never easy. Reinforcement of proper aircrew coordination techniques and the development of sound decision-making, risk assessment and judgment skills can help defeat complacency.



if it ain't broke...

CHIEF WARRANT OFFICER 4 DAVID MUEHLEISEN
U.S. Army Combat Readiness/Safety Center
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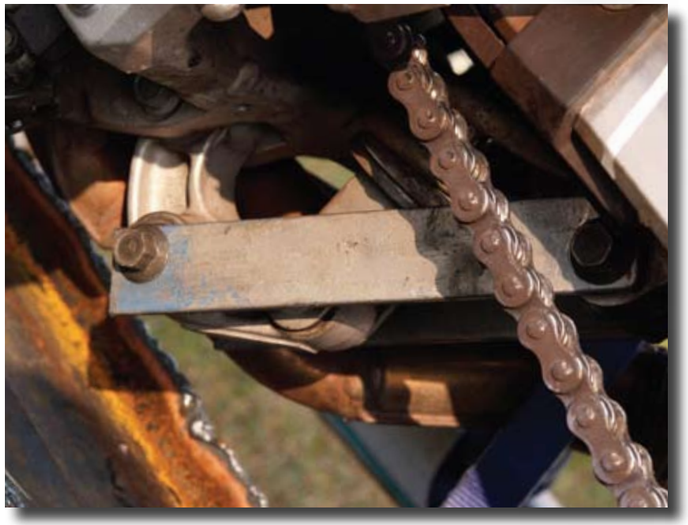
Editor's note: Ever notice how some people can't resist tinkering with something until they break it? In the pursuit of "cool," some riders take a perfectly good motorcycle and mess with it until it's thoroughly FUBAR. Gone are the precision handling and performance characteristics the engineers designed into the bike. What remains is a "Franken-cycle" — a collection of mismatched parts that, like the monster of old, can't quite do anything right. That is, except, maybe kill people.

I hadn't ridden since 1997, but I was getting the "itch" to ride again. I kept checking out the "Lemon Lot" on post, looking for something that would catch my eye and fit my wallet. Persistence paid off when my wife and I went by one day and I spotted a yellow and black Honda CBR 600 F4 at a fair price. I told her that was what I wanted. So I pulled out my cell phone and tried to call the owner, but no one answered. What a bummer! A few days later, I came home early to get ready for school that night. When I opened the garage door, there the bike was, sitting with the keys in the ignition. My wife had bought it for me as a surprise present. I was thrilled!

I hopped on the bike and just cruised around the neighborhood a few times. I noticed the bike sat really low – so low, in fact, that my toes would drag when I took slow, tight turns. I also noticed the torque seemed really excessive on the low end of the throttle.

I found out the previous owner, a young guy I had never met, had modified the bike to make it look cool and produce more low-end torque. For example, he'd lowered the front forks about 2 inches. This almost eliminated the gap between the front fender and the headlight fairing and shortened the fork travel to where I felt they'd bottom out under normal riding conditions. There was no question I needed to return the bike's front forks to their stock condition.

The rear shock was the really scary part. The previous owner had replaced the original dog bones with fabricated steel slats that he drilled and bolted into place. The replacement dog bones were about 2 inches shorter and one-sixteenth of an inch thinner than stock ones. I took off these "replacement" dog bones and looked at them. I noticed they were bending at the middle hole and the metal was stretching and slightly bent. To me, it looked like they were in the process of failing. I can just imagine the catastrophic failure that would have happened if that weak metal snapped at 65 mph!



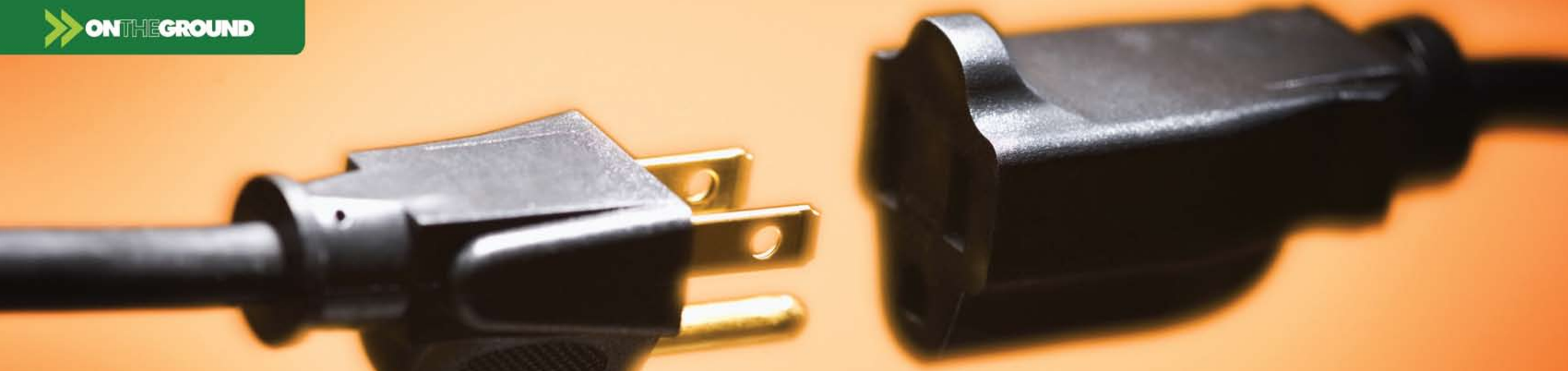
The picture above shows a "shade-tree" lowering modification for a rear shock on a sportbike.

It wasn't just the suspension the former owner had altered. He'd also changed the sprockets to make the bike look cool and produce more low-end torque. That's why the throttle response didn't seem to feel right when I rode the bike.

Those changes completely altered the bike's stock handling and performance. I read some blogs and spoke to some experienced riders about the changes. They told me lowering the bike's suspension changed its handling characteristics and if you didn't know what you're doing, you could be in for a big surprise the next time you went into a corner. The stock CBR 600 looked cool enough to me – I didn't need these dangerous alterations. I decided to return the bike back to its original configuration. So back inside the garage the bike went.

Restoring the bike to the original configuration was, for the most part, an easy task. I returned the front forks back to their stock condition and torqued them down to factory specs. I replaced the rear shock dog bones and sprockets with original equipment manufacturer (OEM) parts. Going back to the OEM sprockets made the speedometer read accurately again. It also corrected the excessive low-speed torque and the over-revving at highway speed. When I put the suspension back to stock, I realized the kickstand was 2 inches too short, so I ordered a used one and replaced that, as well. While I had the bike torn down, I replaced all the brake pads for good measure. Now the bike was ready to ride just like Honda intended.

Since returning the bike to its stock configuration, I can tell a big difference in every aspect of riding. Compared to the way it cornered before, it now turns less aggressively. When I take off, the transition when shifting from gear to gear is smoother and much less punishing on the chain and sprockets. Even when parking on the kickstand, the bike now sits properly. The bottom line is I know the bike is configured exactly the way it was engineered to be. I don't have to worry about parts snapping and falling off or dragging my toes in the corners. And that makes me feel a lot more confident – and safe – as a rider.



Playing with FIRE

1ST LT. ERIK JOHNSON
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Due to the winter chill, Soldiers will remain indoors much more than when the weather is sunny and pleasant. In some cases, this means many appliances and electronic devices will remain plugged in and running for long periods of time. This greatly increases the risk of an accidental fire.

Electrical hazards are the most common fire risk Soldiers face and can result from the improper use of extension cords, appliances, "daisy-chained" power strips, overloaded outlets and light fixtures. To help reduce electrical fire hazards, inspect the rubber or plastic insulation wrapped around extension cords. If this protective wrap is cracked, frayed or in any way damaged, replace it immediately.

Keep in mind that extension cords are intended for temporary use only and should be unplugged after every use. Never consider an extension cord as part of an appliance's factory-supplied power cord. Also, look at the male and female ends of the cord. Stamped on one or both ends should be the Underwriters Laboratories (UL) symbol, which is considered the "safety seal of approval." Electronic goods without this stamp or sticker should not be trusted.

Another common mistake that creates a fire hazard is "daisy chaining" power strips (plugging one power strip into another). This is often done in a misguided attempt to operate multiple appliances off one outlet. This technique causes a reduction in the amperes flowing into dependent appliances, which could result in overheating and lead to a fire. One outlet is manufactured to supply power to one power strip. Operating two or more power strips off a single outlet creates an unacceptable hazard.

Light fixtures such as lamps and track lighting can also create a fire hazard. Lights should never be placed where they touch curtains or drapes. In addition, never cover the top of a lampshade, as heat from the bulb must be allowed to escape. If the heat cannot escape, it can intensify and perhaps cause a fire. It's also a good idea to keep appliances clean. Remember to never cover an appliance's ventilation ducts, as lack of ventilation causes heat and, as we all know, heat can cause fire.

Although electrical hazards may dominate this list, they're not the only threat. As for smoking hazards, do not empty ashtrays or cans into the trash without first dousing the hot ashes with water. More importantly, remember to never smoke within 50 feet of any fuel point or fuel tanker truck. Also remember that candles and gas grills are fire hazards. Barbeques and burn barrels must be kept a safe distance from all buildings and decking, and a fire should never be left unattended.

One last word on housekeeping practices: do not cover emergency light fixtures with clothes, linens or anything. Also, never block exits with furniture and do not obstruct access to breaker boxes either inside or outside of billeting structures. If you have any questions or concerns about fire safety, direct them to your safety officer or the fire department. And remember, fire hazards have countermeasures. Employ them!

HOT-WIRED FOR DISASTER

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Hunter Army Airfield, Ga.

The mission began as a routine night vision goggle (NVG) aerial refueling proficiency mission. The MH-47 crew of six preflighted, briefed and filed their crew packet and flight plan with operations. The aircraft was ready, as was the crew.

In accordance with standing operating procedures, the crew chief carried an aircraft mechanics toolbox with the necessary tools for repair and maintenance of the MH-47. The toolbox was stored securely on the floor in front of the 800-gallon Robertson auxiliary fuel tank in the forward cabin area. In the toolbox were two 14.4-volt DC batteries and a drill driver used for removing panel screws. The toolbox had foam inserts, neatly cut out to account for and secure the tools and the two batteries. With the exception of the odds and ends that crew chiefs carry to complete those minor unscheduled maintenance tasks, the toolbox also included assorted common cotter pins, nuts, washers and a spool of .020-inch safety wire.

The crew departed shortly after the end of evening nautical twilight and had about 45 minutes of en route time before the air refueling control time (ARCT). The ARCT is a "hard" time where the receiver, in this case the MH-47, and the tanker, an MC-130, must join up for the aerial refueling.

About 20 minutes into the flight, while still low level, one of the pilots reported smelling smoke. After a short discussion, the pilots realized the aircraft was flying over an area that was conducting a controlled forestry burn. However, the smell increased in intensity and the crew began looking for the source of the smoke. The pilots immediately turned back to base.

The crew chief in the forward cabin area followed the odor to the vicinity of the toolbox. When he raised the lid of the toolbox, the tray holding the spool of .020-inch safety wire was glowing red and producing fumes and light smoke. The red glow when viewed through NVGs amplified the scene and he reported "FIRE!" on the internal communication system (ICS). The cry of "FIRE" on the ICS ranks right up there with "WIRES!" on a pilot's least favorite things to hear.

Immediately following the cardiac episode, the pilots began a descent and prepared for an emergency landing. What the crew chief had seen was a spool of .020-inch safety wire resting against the terminals of one of the 14.4-volt DC batteries for the drill driver. The spool was smoking, glowing red and melting the plastic surrounding the terminals on the battery. The crewmember calmly reported the clarified version of what he saw to the rest of the crew and the pilot aborted the landing and turned the aircraft back to base. The crew chief then carefully pushed the safety wire away from the battery, but it came to rest on the other battery and began to glow and smoke exactly like the first. With one more attempt, he was able to separate the safety wire from the battery and remove the source of smoke and fumes. After a hectic minute or two, the crew was able to relax and again changed course to resume the route back to the tanker for their aerial refueling mission.

This crew was lucky they found the fire source in time. The hazard of storing a spool of safety wire in close proximity to the drill driver battery could have resulted in a fire and/or explosion. The 800 gallons of JP-8 conveniently placed within a foot of the toolbox presented a ready fuel source. This could have easily resulted in a destroyed aircraft and possible fatalities.

The remedy was extremely simple. In our case, we moved the safety wire to another drawer in the toolbox, away from the conductive material in the batteries. This was a valuable lesson learned.

LOOKING AHEAD: FISCAL 2009 OBJECTIVES

BILL ZAHARIS
U.S. Army Combat Readiness/Safety Center
Fort Rucker, Ala.

On June 16, 2008, the Secretary of the Army and Chief of Staff, Army, approved the Army Safety and Occupational Health Objectives for fiscal 2009. The guidance was distributed to all Army Headquarters commanders for dissemination and development of subordinate plans to meet four basic objectives, which are presented below.

Safety Climate and Culture

Evaluate your programs to ensure you are addressing the climate of your organization in both depth and breadth. How well are you communicating your message and how far down in the organization does it go? Our goal is to change the safety culture of the Army to be proactive and predictive. Use the tools available to you such as the Army Readiness Assessment Program or Individual and Leader Accident Risk Assessments to assess climate and culture and develop plans to target those areas where you have gaps.

Off-Duty Loss Reduction

Our goal for fiscal 2009 is to reduce off-duty accidental loss from fiscal 2008 by 20 percent. Each command is unique, but the basic premise of reducing off-duty loss applies to all Soldiers, civilians, Family members and contractors. Each member of our team is important. While most off-duty reserve component, Department of the Army civilian and contractor losses aren't counted in our statistics, they're felt in our formations and workspaces. We owe it to all the men and women professionally affiliated with our Army to provide the tools and advice they need to make wise risk decisions. Take a holistic look at your environment and seek out ways to engage those who can influence our team members while away from their place of duty. Every post, camp and station is a hometown with adjacent communities full of untapped resources. Evaluate which local organizations or businesses may be able to influence our Soldiers and engage those who are willing to help.

Sustainment

For fiscal 2009, our on-duty goal is to sustain the more than 40-percent reduction from fiscal 2006 numbers while shifting focus to off-duty reductions. While striving to achieve the off-duty

goal, it is imperative we sustain our gains in reducing on-duty accidental loss over the last two years. During fiscal 2008, we asked you to target your programs at your command's greatest loss areas. Continue to support those on-duty programs that have produced success and continue to foster the composite risk management mindset in all you do.

Best Practices

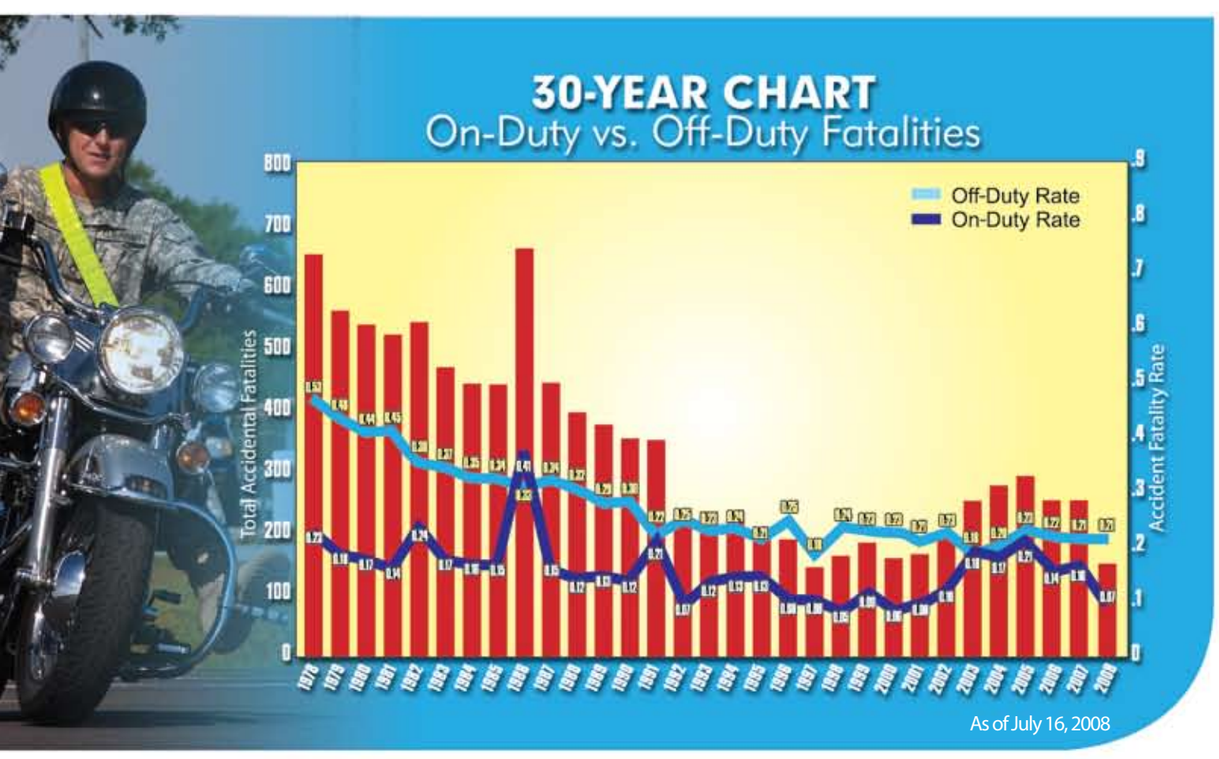
As our safety culture continues to grow and improve, many of your organizations have reported some new and innovative ideas that are proving to save lives. We can learn a tremendous amount from each other by sharing our successful programs. Last year, we asked you to capture Best Practices in your commands and to be prepared to report by the end of the fiscal year. This year, we ask you to publish those Best Practices you have identified through various command and safety channels. The U.S. Army Combat Readiness/Safety Center will assist you in capturing and publishing those great programs across the Army.

For the past few months, staff officers at all echelons have been building plans unique to their organizations to meet the goals set by our senior Leaders. Now is the time to begin executing those plans and looking ahead to a year where we make significant headway in reducing our losses to accidents. Some of you may wonder why the shift in focus to off-duty accident prevention when what we do in the Army is significantly more dangerous than what we do in our off time. The truth is we are much safer on duty than off duty.

The chart below depicts our on- and off-duty Soldier fatality numbers and corresponding rates per 1,000 Soldiers. You can see that for the last 15 years, the off-duty fatality numbers and rate has remained relatively flat. During the same period, we've had great success in forcing the number of on-duty fatalities down both pre-9/11 and again following a spike during the beginning of the Global War on Terrorism.

When we just look at fiscal 2008 numbers as of July 16, with nine and a half months behind us, you can see that 75 percent of our accidental fatalities occurred off duty, as depicted in the chart to the right. (The chart compares Army fatalities for fiscal 2008 to the same time period last year. If a slice of the pie is green, we have fewer fatalities in that category than in the previous year.)

Of the 114 Soldiers lost, 84 percent (96) were related to driving a privately owned vehicle (POV) or motorcycle. Most of these accidents did not occur because of a lack of training, road conditions or the fault of another motorist. They happened because of indiscipline – whether it's not wearing a seat belt, failing to wear a helmet on a motorcycle or just going too darn fast with either.



At the same time, as of July 16, we had exceeded our total motorcycle fatalities for all of last year with more than two months of prime riding season left in the fiscal year. Of the 39 motorcycle fatalities, 27 involved known acts of indiscipline. All the reports aren't in yet, but we expect many of the remaining 12 will include indiscipline, as well.

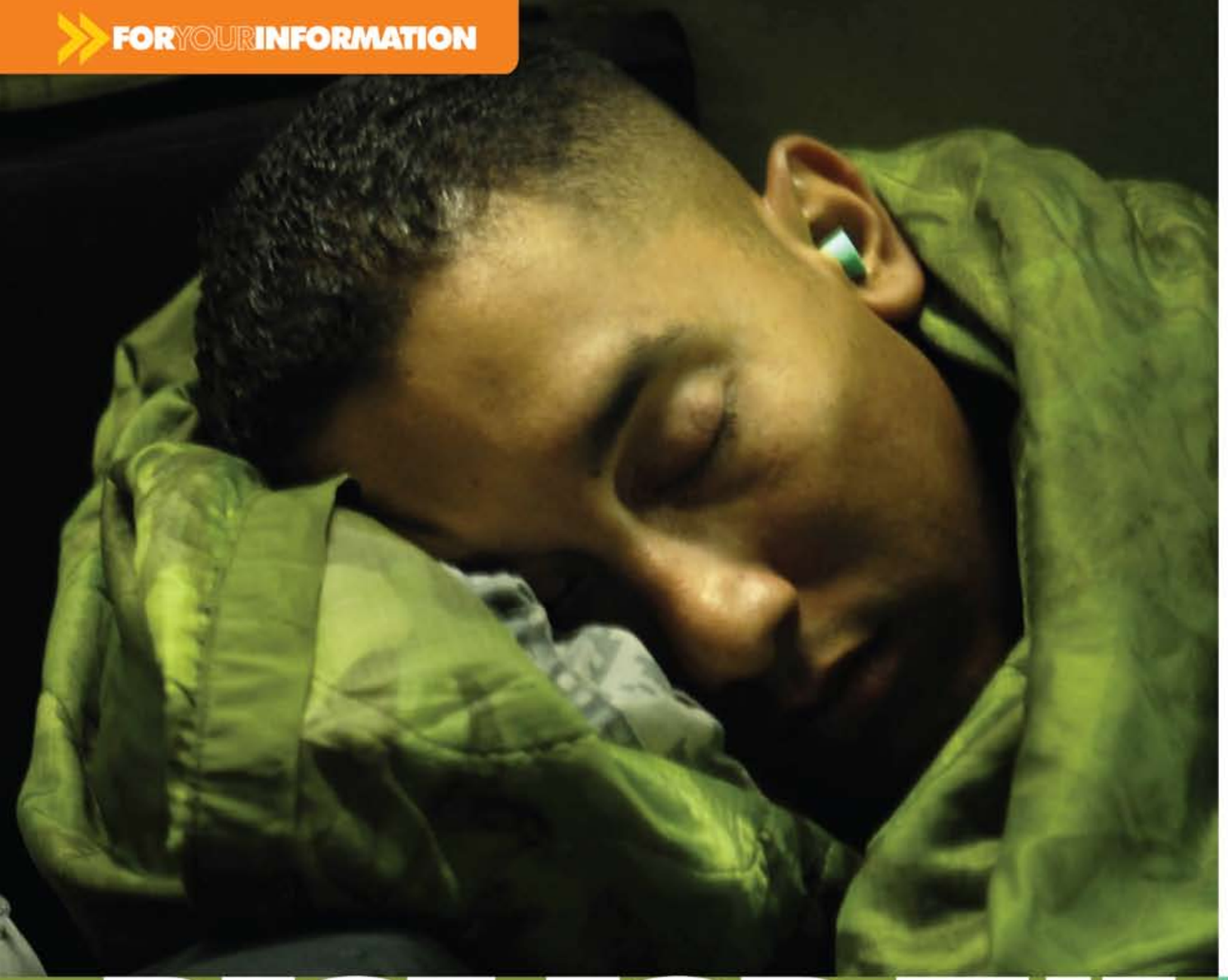
You can make a difference. The Army has been successful in lowering the number of on-duty fatal accidents through strong, caring leadership. We can do the same with off-duty loss if everyone gets engaged. It doesn't matter whether you are a Soldier, civilian, Family member or contractor; all play an important role in the ability of our Army to accomplish the mission. Any loss hurts the team and requires others who are already fully committed to take on more.

So what can you do? Read over the objectives again. Think about different ways you or your organization might be able to influence a member of the team who is taking unnecessary risks. Who in your sphere of influence could be considered high risk? Have you looked hard and given it more than just a cursory thought? Do you have access to on- and off-post traffic violations? Who can help you get access? Have you engaged them?

Can you be the first to tap into a local resource that no one else has thought of or just didn't think would work such as Family Readiness Groups, Better Opportunities for Single Soldiers (BOSS), local law enforcement, car or motorcycle dealers, veterans groups, clubs or social networking Web sites? If you have found something, have you shared it with others who could benefit and maybe use the same approach? Send an e-mail, blog or text message. Write an article for your unit newsletter, post paper, magazine, etc. If you don't like to write, talk with someone who does and let them capture what it is you think will make a difference.

For 15 years, we've been unable to make a significant positive change in reducing off-duty fatalities. Everyone knows that "hope is not a method." Yet, expecting different results while using the same methods, tools or procedures you used in the past amounts to relying on nothing more than hope or, worse yet, plain old luck. It's going to take fresh, innovative ideas and strong leadership to break the pattern and change off-duty behavior.

Changing behavior and reducing human error accidents is hard work. We begin the fiscal year with a clean slate, so what we write as history at the end of fiscal 2009 is up to you. Our senior Leaders know you can make a difference in curbing off-duty risky behavior and have given you the direction to move out. Good luck! No, correction. Luck has nothing to do with it.



REST FOR THE WEARY

CADET CHARITY MASAITIS
U.S. Military Academy
West Point, N.Y.

Fatigue is a common stressor that challenges Soldiers at all levels. Both Leaders and Soldiers must be aware of the effects of fatigue on their bodies. Failure to prevent it could result in Soldiers making mistakes that have disastrous consequences.

Fatigue is the state of feeling tired, weary or sleepy that results from extended periods of mental or physical work, prolonged periods of anxiety, exposure to harsh environments or loss of sleep. Work-related factors such as long hours on the job, strenuous physical or mental activity, shift work, inadequate rest between work periods, excessive stress or a combination of these can contribute to fatigue. Unfortunately, all these factors are common in our military.

With a number of Soldiers experiencing multiple deployments, as well as extended deployment lengths, many in our Army experience the effects of fatigue. Fatigue affects the body in many negative ways. When individuals are fatigued, they tend not to think as clearly and, therefore, have slower reaction times. This can pose a dangerous situation because Soldiers must be alert and aware of their surroundings to make good, quick decisions. Prolonged periods of fatigue can also cause various health problems such as obesity, diabetes, heart problems, depression, loss of concentration, slower reaction times and an inability to remember things.

While assigned to the U.S. Army Combat Readiness/Safety Center at Fort Rucker, Ala., for a summer internship, I had the opportunity to participate in a three-day fatigue study at the U.S. Army Aeromedical Research Laboratory. On the first day, another participant and I in-processed and then went home to sleep to prepare for the next two days. The following morning, we returned to the lab for the period of sleep deprivation. About every four hours during this period, our cognitive processing and reaction times were tested using the EST 2000 (an indoor shooting range) and short computer games.

By the end of the two days of sleep loss, the

effects of fatigue were evident in both of us. I felt extremely tired, and it was hard to think clearly and normally. I had a difficult time doing the simplest tasks and my body's reaction time had slowed. It took me longer to react during the computer game tests than at the beginning of the study, and I made many more mistakes. Seeing the effects fatigue had on my own body helped me realize it can play a major role in decision-making and lead to errors and, possibly, a preventable accident.

There are several ways a person can prevent the effects of fatigue, such as improving sleep habits. According to the National Sleep Foundation, the best way for a person to improve sleep habits is to establish a consistent sleep and wake schedule, even on weekends. It's important for Soldiers to keep their sleep patterns consistent each night. Creating this routine prepares the body for sleep, and keeping this routine consistent can help maintain the body's circadian rhythms.

Finding the time to sleep while deployed is one of the greatest challenges Soldiers and Leaders face. It can be difficult for a Leader to fit a suitable rest plan into current operations, so Soldiers might not have the luxury of eight hours of sleep. The stress of the day might also cause some Soldiers to have a hard time sleeping even if they do have adequate time for rest. There are things Soldiers can do to encourage sleep such as exercising every day. However, they should try to avoid exercising three hours before bedtime. Soldiers should also try to refrain from eating at least two to three hours before bedtime. If nothing else, Soldiers should avoid caffeinated or alcoholic beverages, as well as tobacco products, before going to bed.

Soldiers are under extremely high levels of stress, and fatigue is a major factor that continues to plague them whether deployed or at home. Therefore, Leaders need to ensure their Soldiers are having their basic needs met in order for them to perform to the best of their abilities. By teaching Soldiers the effects fatigue has on their bodies and how to recognize the symptoms, Leaders might help prevent a needless accident.

FYI

Sleep deprivation may lead to drivers falling asleep at the wheel, failing to recognize a threat or reacting too slowly; impaired thinking and reasoning abilities, leading to bad decisions; and an overall degradation in alertness and ability to function properly. The following tips can aid with sleep management:

- **Maintain a nutritious diet and try to avoid too much caffeine, sugar and tobacco.**
- **Do not eat or drink too much before bedtime.**
- **Exercise regularly – but not within three hours before bedtime.**
- **Avoid activities that are mentally or physically stimulating before sleeping.**
- **Avoid over-the-counter "sleep aids," which can cause grogginess, not actual sleep.**
- **When sleeping, minimize noise and light by wearing earplugs and blackout shades.**
- **Maintain a disciplined work/rest cycle.**

PREDICTING SOLDIER MENTAL READINESS

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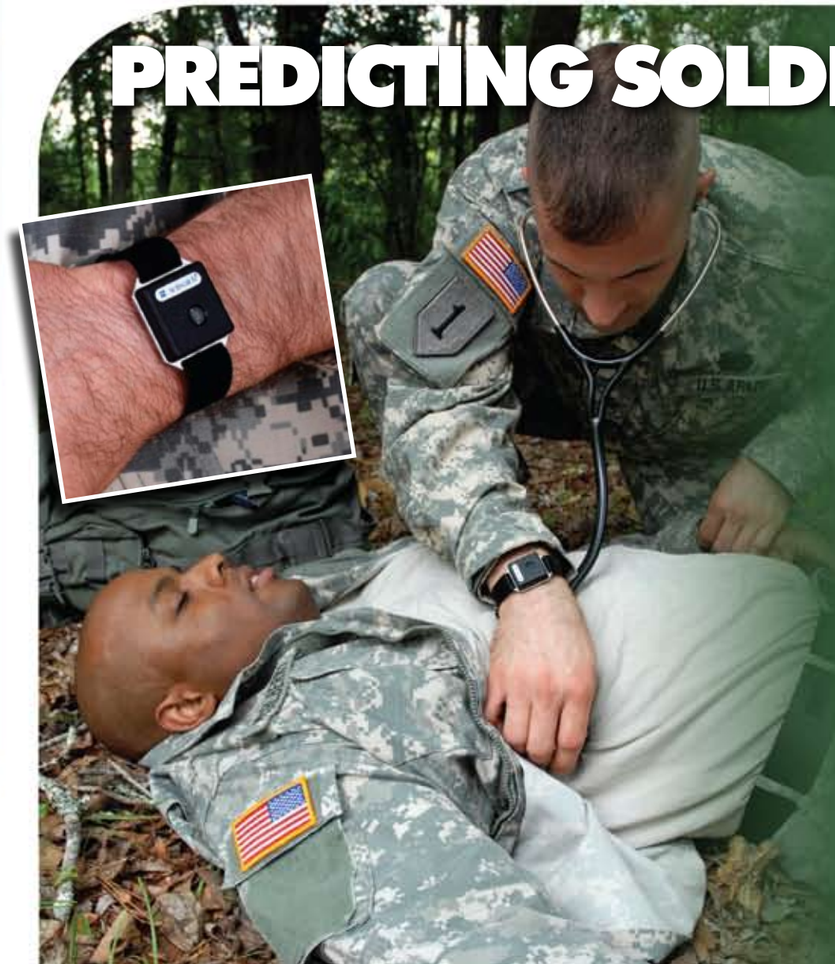
U.S. Army Aeromedical Research Laboratory
Fort Rucker, Ala.



You don't need a scientist to tell you that fatigue has detrimental effects on a Soldier's physical and mental performance. The Army is a tough profession with a high operational tempo that sometimes dictates the amount of rest Soldiers get, especially in wartime conditions.

As more advanced and complex technology reaches the battlefield, warfighting requires not only peak physical performance, but also greater levels of mental performance. There are times when everyone is tired, yet Leaders must make candid decisions to assign Soldiers to specific tasks or missions.

So, under such difficult conditions, how do Leaders select the most mentally able Soldier to accomplish a specific mission? Would it be the Soldier having the best training, the most experience, the highest academic background or the least recent activity? You might think these important factors would be the best predictors of mental performance; however, a recent study by the U.S. Army Aeromedical Research Laboratory suggests otherwise.

The study used wrist-mounted monitors to track activity levels of warrant officer candidates and noncommissioned officers undergoing military training. The data from the activity monitors were compared to several tests of mental performance with surprising results. Independent of the Soldiers' academic backgrounds, the type of military training, their recent activity or the exam content, it was the amount of sleep over the previous two nights that was most predictive of their mental performance. The results also indicated that Leaders in the field could easily and unobtrusively collect useful real-time information regarding the readiness of their Soldiers and aircrews by simply using the activity monitors. Such easily obtained data may one day improve military decision-making, as well as potentially save lives and equipment.

For more information, contact Arthur Estrada at (334) 255-6928 or e-mail arthur.estrada@us.army.mil.

RIDING THE RANGE

Motorcycle training programs are always a hot topic this time of year, especially as the Army continues to experience an increase in motorcycle accidents and fatalities. In an attempt to be helpful, many Soldiers often volunteer to become a Motorcycle Safety Foundation (MSF) *RiderCoach*. While the Soldier's dedication is admirable, *RiderCoach* duties are often misunderstood. *RiderCoaches* must teach to remain certified, and that teaching must be done under the auspices of the MSF's Rider Education Recognition Program (RERP). When this is understood, the requirements and the challenges for those wanting to become MSF *RiderCoaches* become more apparent.

EARNIE EAKINS
U.S. Army Combat Readiness/Safety Center
Fort Rucker, Ala.

There are some issues that must be worked out before a Soldier can become a *RiderCoach*. Soldiers must have their installation's approval to teach because that is where the RERP responsibility resides. Also, legal constraints and the requirement to teach within a RERP precludes *RiderCoaches* from being trained exclusively to support Motorcycle Mentorship Programs. Soldier *RiderCoaches* are becoming increasingly rare because of the Army's need to keep all its Soldiers in the fight. However, Soldier *RiderCoach* qualification remains an option if there is a need at the installation level.

Army installations should answer two fundamental questions before deciding to begin a RERP. First, is a motorcycle training program at your location in the best interest of the Soldier and the Army? Second, are you willing to comply with Department of Defense, Army and MSF requirements in creating your program? If you are, the first step is to identify where you will conduct the training.

FYI

A location with 160 feet by 260 feet of free area will support a standard range. Nonstandard-sized ranges can be used, but they will limit the number of students that can be trained and the type of classes that can be taught at a location. Contact either the U.S. Army Combat Readiness/Safety Center (USACRC) at ArmyRERP@crc.army.mil for details on nonstandard ranges, or have an MSF *RiderCoach* help you review the MSF's Rider Education and Training System Online Resource Guide. That guide is online at https://www.retsorg.org/login.aspx?ReturnUrl=%2fDefault.aspx.

Select a Range Location

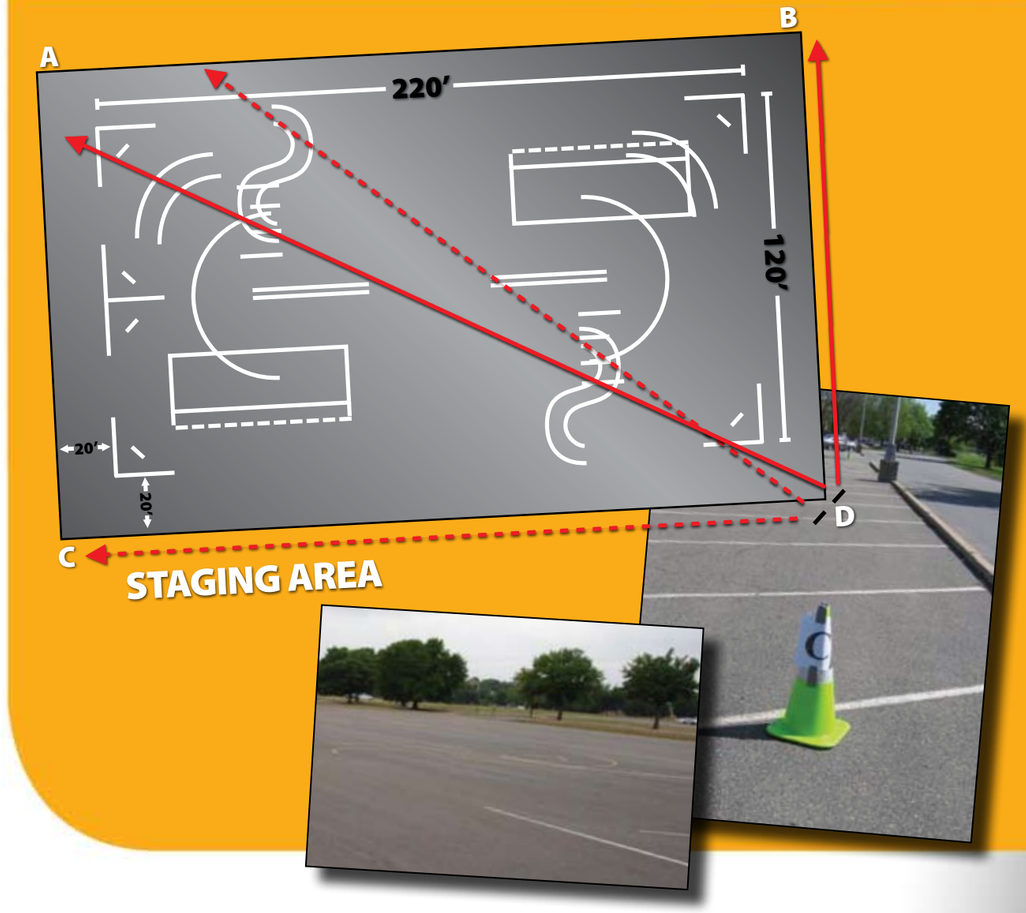
Good sites have a well-maintained, even surface with no raised impediments (curbs, poles, pedestals and drains are considered impediments). The site must be flat, have good drainage and be able to be completely closed to traffic during classes. The best sites will have an obstacle-free paved area 160 feet by 260 feet.

While the most common choice is a parking lot, it is important to remember that it must be free from traffic during motorcycle training. In addition, range choices should reflect the number and type of classes required to support active-duty Army, U.S. Army Reserve (USAR) and Army National Guard (ANG) commands or installations.

There may be ways to support motorcycle training without implementing a RERP at your location. Before making the decision to set up a motorcycle training program, make sure you make the right contacts. Active-duty Army installations should contact their regional safety manager. For USAR organizations, the proper contact is the command safety office, while ARNG organizations should contact their state safety officer and the National Guard Bureau Safety Office. Once the decision is made, the Driving Task Force (DTF) at the U.S. Army Combat Readiness/Safety Center (USACRC) will be more than happy to help get you started.

To help you set up motorcycle safety training at your location, we have information available online at https://crc.army.mil/home/. Click on the DRIVING/POV button and then key in "RERP" in the search box. That will take you to a link that will provide the information you'll need, including an approved RERP application.

Submit your RERP application with your range application if you are beginning a new program. Established RERPs aren't limited to the number of associated training ranges as long as MSF requirements are satisfied. Range information forms are required for each range and photos must be made according to the instructions below.



Guidelines for Range Photographs

We recommend that you refrain from painting your range until it has been formally recognized by the MSF.

- Submit digital photographs enclosed in a PowerPoint presentation only. (No cell phone pictures, please.)
- Before taking photos of the range, place visible markers at the four corners to designate where the range will be located.
- Include the range and run-off areas in each photograph.
- Take two photographs from each corner's perspective: one should give a view of the long side of the range and the other should show the short side. (See the diagram to the left and attached pictures for reference.) You should send at least eight photos to the MSF.
- Label each photograph accordingly, using A, B, C and D to designate the corners of the range (e.g., C. Long Side, C. Short Side).
- E-mail the entire application (forms and photos) to ArmyRERP@crc.army.mil.

Contact the DTF at (334) 255-3034 if you have questions requiring an immediate response. Your careful attention to completing all the steps for submitting your packet will shorten the application process and speed the approval of your RERP/range request. Once the MSF receives the complete application, response time is generally three to four weeks.

Ghouls Night Out

SGT. KELISA FOLK
Headquarters, 2nd Battalion, 104th Aviation (GSAB)
Fort Indiantown Gap, Pa.

Halloween is a night of excitement and ghoulish charm, but it should be celebrated with caution. Children are four-and-a-half times more likely to be hit by a car on Halloween than on any other night of the year. However, the leading causes of Halloween-related injuries among children are not vehicle-related, but from falls. Many result from long, baggy or loose-fitting costumes, oversized shoes and vision-restricting masks. With a little forethought and creativity, parents and guardians can keep their little ghouls and goblins safe.

Adults should always supervise children under the age of 12 when they head out to haunt the streets in search of treats. Children should only visit well-lit houses and remain outside at all times, while adults stay as close to the home as possible. A flashlight will make trick-or-treaters more visible to motorists, so make sure they carry one. Also, stay on the sidewalks and off streets and lawns.

Halloween is a great opportunity to teach children how and where to safely cross the street. Always use crosswalks or street corners to cross streets, and never cross between parked vehicles. Don't forget to teach your child to always look left, right, left before crossing. As for all the drivers out there, be extra vigilant for the sudden appearance of witches and ninja warriors. It's a good idea to slow down because you never know what may pop out in front of you.

For your child's costume, consider using nontoxic face paint (read the label) instead of a mask. Dress them up in brightly colored clothing and add some reflective tape to make them even more visible to passing motorists. Costumes should only be loose enough so warm clothes can be worn underneath if necessary. Accessories such as swords, knives and magic wands should be made from flexible plastic or cardboard. Also, give your children light-colored goodie bags with reflective tape for added visibility.

To discourage goodie-bag looting before returning home, feed children before taking them trick-or-treating. Make it a rule that all candy will be inspected by you before a single piece is eaten. Once you get home, inspect the candy carefully and wash any fruit thoroughly. Cut fruit into small pieces before serving to children and ration out the candy. When in doubt, throw it out.

For older children, set ground rules and a curfew. Know what routes they'll be taking and who they'll be with. Just in case you get separated, younger children should know their home phone number. It's also a good idea to pin a piece of paper with your child's name, address, contact names and phone numbers to their costume.

Finally, don't forget about Fido. All the unusual activity may frighten pets and cause a normally docile animal to react aggressively, so keep them under control. On the flip side, remember what might be cute and cuddly behavior to you may frighten small children. Also remember to keep treats and decorations out of your pet's reach.

Halloween should be a time of fun and excitement for both children and adults. By following the proper precautions before taking your children out for goodies, you'll have a safer Halloween and create memories that will last forever.

FYI

As witches, pirates, ghosts and goblins prepare to descend on neighborhoods in search of treats, the American Red Cross offers parents some safety tips to help prepare their children for a safe and enjoyable Halloween.

- Walk, slither and sneak on sidewalks, not in the street.
- Look both ways before crossing the street to check for cars, trucks and low-flying brooms. Cross the street only at corners, and don't hide or cross the street between parked cars.
- Wear light-colored or reflective-type clothing so you are more visible.
- Plan your route and ensure children have adult supervision.
- Carry a flashlight to light the way.
- Keep away from open fires and candles. (Costumes can be extremely flammable.)
- Only visit homes that have the porch light on.
- Accept your treats at the door and never go into a stranger's house.
- Use face paint rather than masks or things that will cover your eyes.
- Be cautious of animals and strangers.
- Have an adult inspect treats before eating. And don't eat candy if the package is already opened. Small, hard pieces of candy are a choking hazard for young children.

For more Halloween and pedestrian safety tips, visit the Web sites of the American Academy of Pediatrics, the Centers for Disease Control and Prevention and the National Safety Council.

TRY iT before you BUY iT

KRISTINA MCCARTHY-MARTIN
Corpus Christi Army Depot
Corpus Christi, Texas

When it comes to chair comfort, one size definitely does not fit all.

"Ergonomically designed" does not always mean it was designed with your application in mind. This concept can apply to a plethora of applications, including use in offices, industrial manufacturing settings and/or anywhere a person works. Wouldn't it be great if you could walk into a place and borrow a chair or a tool and take it back to your workplace to see if you like it before purchasing it? The Corpus Christi Army Depot (CCAD) has developed the Army's first ergonomics center, which allows you to do just that.

The journey toward the development of the CCAD Ergonomics Center began with a benchmarking trip to Boeing's St. Louis Ergonomics Lab. Boeing-St. Louis produces fixed-wing commercial and military aircraft. The facility has implemented a very successful ergonomics program onsite.

In December 2006, a team of engineers and lean analysts from CCAD toured the Boeing facility and learned about its ergonomics program. Following this visit, the idea for CCAD's own ergonomics center began to grow legs. In concept, the CCAD Ergonomics Center would be a vital tool in CCAD's overall safety program, providing education and a resource for problem solving regarding ergonomic issues. The facility

opened its doors Sept. 27, 2007.

The mission of the CCAD Ergonomics Center is to improve work methods and increase efficiency through better tools and training to aid in the reduction of shop floor injuries and illnesses. Increasing productivity is also integral to the center's core mission.

Mission objectives are accomplished via the practice of offering all employees the opportunity to receive hands-on demonstrations of equipment, training aids, alternative tools and personal protective equipment. Many items, including kneeling pads, chairs, stools and ErgoMates™, can also be checked out for a trial period. After evaluating the effectiveness of these items, the staff can assist in their purchase. The staff is also available to assist in the redesign of work areas and office spaces.

One key element to making any ergonomics program a success is a commitment to training and an awareness of the unique issues surrounding ergonomics. Informal training is essential to the success of any ergonomics program and is conducted every time a person enters the CCAD Ergonomics Center.

More formalized training is also conducted by the staff on general ergonomics principles and to empower supervisors to carry out CCAD's ergonomic objectives. Educating the workforce is valuable to identifying potential problems and assisting in the correction of respective workspace ergonomic concerns. This aids in the acceptance of the changes and brings about employee ownership of the redesign. Volunteer temporary staffing is provided by the different directorates on a weekly basis. This practice aids in the operation of the center while providing volunteers with valuable training in all things ergonomics. Once the volunteers complete their week-long duties, they return to their work center with additional knowledge in ergonomics while also serving as a source of information concerning the CCAD Ergonomics Center for their co-workers.

In addition to the ergonomics center, CCAD has also developed an organization-wide stretching program. The program's goal is to alleviate some of the same types of injuries the study of ergonomics focuses on. By increasing the health and wellness of employees via the CCAD Ergonomics Center and stretching program, the depot is raising awareness concerning prevention of injuries in our workforce. The stretching program is currently being implemented throughout the depot on a shop-by-shop basis.

The CCAD Ergonomics Center and the stretching program are resources that will reduce the potential risk of fatigue, error and unsafe acts by creating a healthier, more capable workforce. The multifaceted CCAD Ergonomics Center, via comprehensive education and design, should show a cost savings to the government through the reduction of injuries and the sustainability of a healthy workforce. These savings will allow CCAD to meet its mission in supporting the nation's warfighters by providing them support from a depot workforce that is healthy, fit and ready to go the extra mile.

DID YOU KNOW?

The Human Factors and Ergonomics Society has designated October as National Ergonomics Month (NEM). The purpose of NEM is to create awareness of human factors and ergonomics through grassroots, community-based activities at colleges and universities, high schools and corporations.

LOST

AVIATION

AH-64

CLASS C D Model

■ Upon completion of flight and while taxiing, ground maintenance personnel informed the aircrew that the No. 2 engine door was open. The aircrew inspected the nacelle door and found damage to three support spars. Maintenance replaced the door and the aircraft returned to flight.

CH-47

CLASS A D Model

■ While in flight, the aircraft rotor system contacted an unidentified obstacle and descended into a ravine, resulting in Class A damage.

CLASS C

■ While sitting on a 15-degree slope during slope operations training, the aft right landing gear separated.

OH-58

CLASS A D(R) Model

■ The crew identified a chip caution message on the multifunction display, followed by a loud noise and an uncommanded 20- to 30-degree left yaw. The pilot was able to autorotate to a secure area.

■ The aircraft crashed during a Phase 8 maintenance test flight. The aircraft was located a short distance from the airfield and both crewmembers were fatally injured.

UH-60

CLASS A L Model

■ The crew experienced heavy dust conditions while landing to a confined area and touched down hard. The aircraft came to rest on its side.

WOULD A GO-AROUND OR AN ALTERNATE LANDING ZONE HAVE BEEN A FEASIBLE CHOICE?

UAS

RQ-7B

CLASS C

■ The UAS experienced engine failure after it reached mission altitude and changed from points NAV to Knobs and executed a -42 degree change in roll attitude. The FTS deployed, but the UAS sustained unrepairable damage.

GROUND

ACV

CLASS A

■ Three Soldiers drowned when their Mine Resistant Ambush Protected vehicle rolled over into a canal while they were performing a combat patrol mission.

WHAT CONTROLS DOES YOUR UNIT HAVE IN PLACE FOR OPERATING AROUND WATERWAYS, PARTICULARLY DURING LIMITED VISIBILITY?

AMV

CLASS B

■ An M997 HEMTT was damaged when a fire started near the fuel tanks. The crew was able to exit the vehicle without injury.

Personnel Injury

CLASS A

■ Several Soldiers were jumping into a river from a railroad bridge using an improvised rappelling rope. One Soldier was swimming for shore when he made a plea for help. His fellow Soldiers tried to assist him but were unable to get to him in time. The Soldier's body was found by divers the following day.

■ A Soldier died while participating in a land navigation course exercise.

■ A Soldier suffered a fatal gunshot wound as the result of a negligent discharge. The Soldier was at the residence of a fellow Soldier who was cleaning/loading his personally owned pistol when it fired.

DO LEADERS CONSTANTLY REINFORCE MUZZLE AWARENESS SO SOLDIERS APPLY IT TO BOTH ON- AND OFF-DUTY ACTIVITIES?

■ A Soldier was conducting a makeup Army Physical Fitness Test when he dropped out of the 2-mile run and collapsed. He was evacuated to a local medical facility, where he was pronounced dead.

ARMY AIRCRAFT LOSSES

Fiscal 2002 to Present
through Aug. 31, 2008

Hostile/ Non-hostile

AH-64A/D	11/51
U/MH-60A/L	9/32
C/MH-47	8/18
OH-58D	11/30
TOTAL	39/131

ARMY GROUND LOSSES

Fiscal 2008
through Aug. 31, 2008

Class A Fatalities

AMV	20/17
ACV	7/6
PERSONNEL INJURY includes weapons-handling accidents	43/36
FIRE/ EXPLOSION	3/3
PROPERTY DAMAGE	5/0
TOTAL	78/62

A Soldier suffered fatal wounds during combat engagement. Friendly fire is suspected.

A Soldier received substantial burns when a fire ensued during a generator refuel operation.

A Soldier died when he fell asleep in an unoccupied construction trailer, which later caught fire. The Soldier had been drinking earlier in the evening. The local fire marshal determined the Soldier was smoking when he fell asleep and started the fire.

CLASS C

A Soldier was conducting crew qualification training on an M2 .50-caliber machine gun when a cartridge exploded and sent a percussion blast back toward the feed tray cover of the weapon. The Soldier suffered a concussion and the weapon was irreparably damaged.

DRIVING

POV

CLASS A

A Soldier was driving his POV when he crossed the center line, left the road and struck a series of obstacles. The Soldier, who was not wearing a seat belt, suffered fatal injuries.

A Soldier was driving his POV when he ran off the road while in a curve. The vehicle became airborne and impacted the ground inverted. The Soldier, who was wearing a seat belt, died from his injuries at a hospital several days later.

A Soldier suffered fatal injuries when his POV was involved in a head-on collision with a vehicle traveling in the wrong lane. The Soldier was not wearing a seat belt.

A Soldier was driving a rental vehicle when he struck a street sweeper from the rear and then collided with a POV. The Soldier was killed on impact with the street sweeper. Seat belt use was not reported.

A Soldier was driving his POV when he was broadsided by another vehicle proceeding through an intersection. The Soldier was fatally injured. Seat belt use was not reported.

WHEN ALL ELSE GOES WRONG ON THE HIGHWAY, SEAT BELTS MAY BE A SOLDIER'S ONLY HOPE FOR SURVIVAL.

A Soldier was driving his POV when he struck a stone wall head-on. The Soldier was pronounced dead at the scene.

POM

CLASS A

A Soldier was operating his POM with another motorcyclist when he lost control, crossed the center line and struck a fence. The Soldier was pronounced dead at the hospital. The Soldier was wearing his full personal protective equipment (PPE).

POV DRIVING LOSSES

Fiscal 2008

through Aug. 31, 2008 — Class A accidents/Soldierskilled

CARS	48/48
SUV/JEEPS	9/9
TRUCKS	12/9
MOTORCYCLES	49/47
OTHER*	6/6

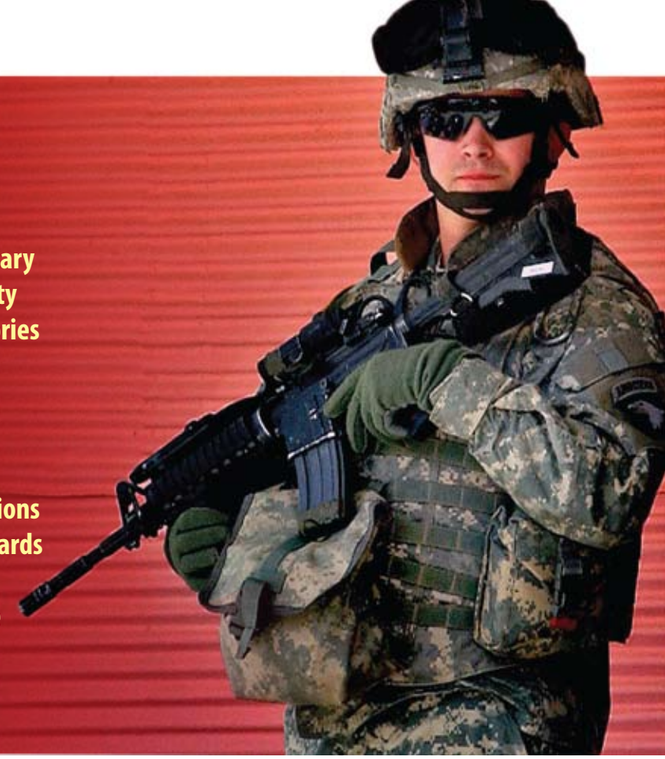
*Includes: vans and ATVs

119 TOTAL DEATHS

Fiscal 2007: 99 — 3 year average: 112

FYI

Did you know the deadline for submitting Secretary of the Army (SA) and Chief of Staff, Army (CSA), Safety Award nomination packets is Nov. 15? Award categories include the Army Headquarters Safety Award, Army Exceptional Organization Safety Award (Division, Brigade, Battalion and Garrison), Army Individual Award of Excellence in Safety (Officer, NCO/Enlisted, Civilian and Contractor) and Army Industrial Operations Safety Award. Information on the SA/CSA Safety Awards can be found in DA Pam 385-10 (Chapter 6), on the U.S. Army Combat Readiness/Safety Center Web site under Awards Program or by contacting the awards administrator at 703-602-3659 or DSN 332-3659.



A Soldier was operating a borrowed POM with another motorcyclist when they collided. The Soldier was thrown from his bike and into a steel barrier, suffering fatal injuries. The Soldier was wearing a helmet but was not licensed.

DO YOU UNDERSTAND LENDING YOUR SPORTBIKE TO AN UNTRAINED FRIEND SETS THEM UP TO BE A "FALLEN COMRADE?"

A Soldier was operating his POM as part of a local group ride when he lost control while negotiating a curve and struck a tree. The Soldier suffered fatal injuries. PPE use was not reported.

A Soldier was operating his POM when he left the road while negotiating a curve. The Soldier was thrown from the bike and suffered fatal injuries. The Soldier was wearing his PPE.

A Soldier was operating a POM on a highway when he struck another vehicle. The Soldier suffered fatal injuries. PPE use was not reported.

A Soldier was operating her POM when she lost control and struck a jersey barrier. The Soldier suffered potentially permanent paralysis from the waist down. The Soldier was wearing her PPE.

A Soldier was operating his POM when he struck another vehicle that was pulling out of a convenience store parking lot. The Soldier was thrown free of the bike and suffered critical injuries. PPE use was not reported.

Editor's note: Information published in the accident briefs section is based on preliminary loss reports submitted by units and is subject to change. For more information on selected accident briefs, e-mail knowledge@crc.army.mil.

Have fun while helping your battle buddy!

MMP

MOTORCYCLE MENTORSHIP PROGRAM

Mentoring can be fun and set up in various ways. Here are a few examples:

- *Unit-level one-on-one mentorship*
- *Unit-level riding groups*
- *Private organization*
- *Combination unit program and private organization at the installation level*
- *Non-Appropriated Fund Instrumentality*

Check out the USACRC MMP Web site for some examples of active mentoring programs:

https://crc.army.mil/mmp/

U.S. ARMY

ARMY STRONG.

U.S. ARMY COMBAT READINESS/SAFETY CENTER

ARMY SAFE IS ARMY STRONG

CREW COORDINATION: CAN YOU HEAR ME NOW? p. 12

KNOWLEDGE

VOL 2 NOVEMBER 2008

OFFICIAL SAFETY MAGAZINE OF THE U.S. ARMY

SAFE FOR THE HOLIDAYS p. 4

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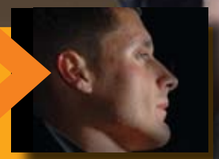
contents



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

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Mission statement: USACRC supports our Army by collecting, storing, analyzing, and disseminating actionable information to assist Leaders, Soldiers, Families, and Civilians in preserving/protecting our Army's combat resources.

We welcome your feedback. Please e-mail comments to **safe.knowledge@conus.army.mil**.

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"SAFETY is not a DESTINATION; it is a JOURNEY and, as such, must CONTINUALLY be ADAPTED to an EVER-CHANGING ENVIRONMENT."

PRESERVING OUR BAND OF BROTHERS

As the new director of Army safety and commanding general of the U.S. Army Combat Readiness/ Safety Center (USACRC), I am proud to have the opportunity to lead this team of dedicated professionals who strive every day to protect our Soldiers, Families and Civilians.

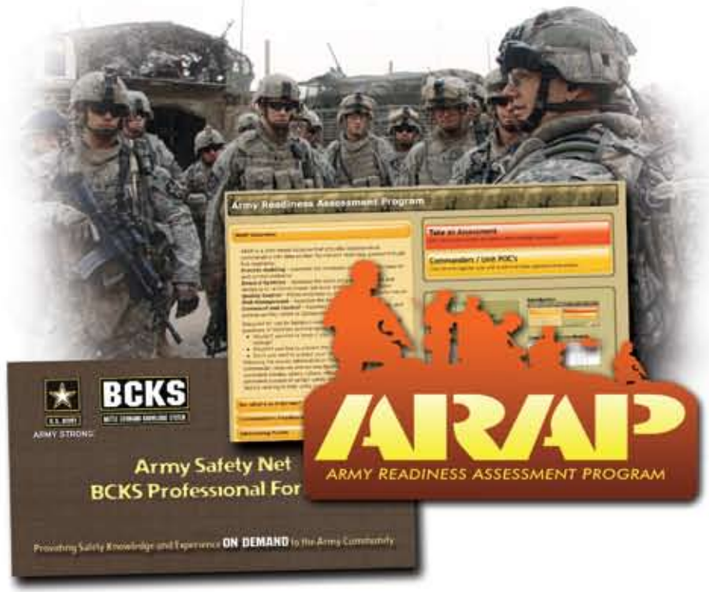
The transformation of the Army's safety culture has developed into a comprehensive and proactive approach to accident prevention. Leaders at every echelon have led this transformation in making the Army – both on and off duty – a proactive, prevention-based and accountable fighting force.

Brig. Gen. Bill Forrester has done an incredible job the past two years in focusing the efforts of the USACRC and helping Army Leaders understand that it takes a comprehensive approach to promote safety. The key to these efforts has been ensuring Leader engagement at every level of our Army.

At the Soldier level, by incorporating composite risk management into their decision-making process, our Soldiers have clearly taken greater responsibility for their personal safety, as well as mission success. While I'm not a fan of statistics, it is evident Soldiers and Leaders "get it" by the 46-percent decrease in on-duty fatalities across our Army in fiscal 2008 (compared to fiscal 2007).

While the Army closed this fiscal year with an overall 16-percent decrease in Soldier fatalities, there is still much that must be done to prevent off-duty losses (which have increased 6 percent and account for almost 75 percent of our losses). The many on-duty safety programs and policies that protect our Soldiers, our "Band of Brothers," in both combat and in garrison (on duty), must also be applied in our approach to off-duty safety. We must remember that our "Band of Brothers" does not dissolve when the day ends and we head home, nor is it limited to those who wear a uniform. It encompasses all the members of our Army team, 24/7.

Safety is not a destination; it is a journey and, as such, must continually be adapted to an ever-changing environment. Leaders must help their Soldiers navigate and manage risk, both on and off duty; it is our responsibility and our mission. Composite risk management must be inherent in every decision, and we, as Leaders, must remain vigilant to protect against risk and prevent accidents in order to sustain our "Band of Brothers."



Finally, communication is critical to the success of our safety programs and initiatives. We must continue to take advantage of information-gathering and sharing resources such as the Army Readiness Assessment Program and Battle Command Knowledge System. These tools provide Leaders valuable insight into the safety climate of their command and facilitate the flow of knowledge.

Promoting safety is a constantly evolving mission and Leaders must continue to employ outside-the-box thinking to communicate with our Soldiers, Families and Civilians. Your input provides us valuable information on areas we can improve in order to raise awareness and prevent accidents and fatalities. I ask Soldiers, Family members and Civilian employees to share with the USACRC ways we can improve the Army safety programs and join us in the journey to a safe, Army Strong team.

Again, I am proud and humbled to be serving as the director of Army safety and the commander of the USACRC. I look forward to visiting our formations and Soldiers across our Army. I thank you all for your efforts over the past year and ask for your continued help in protecting our most vital resource, our Soldiers, both on and off duty, in combat and back home, and preserving our "Band of Brothers."

William T. Wolf
Brigadier General, USA
Commanding

Safe for the Holidays

FRANK MCCLANAHAN
U.S. Army Combat Readiness/Safety Center
Fort Rucker, Ala.

The winter holiday season is a time of joy, hope, fellowship and giving thanks for our blessings. But it also involves activities that expose each of us to increased risk. Following these guidelines will help make your holiday season safer and more enjoyable.

Traffic Safety

Hazardous weather and road conditions, reduced hours of daylight, alcohol, fatigue and vehicle breakdowns, which are all common to the holiday season, can make operating vehicles an extremely dangerous undertaking. During the coming holidays, the likelihood of being involved in an accident on the highways and interstates is greatly intensified. Predominant factors are the increased use of intoxicants and the tendency to travel long distances during this season.

Fatigue and excessive speed can be natural byproducts of these factors. As a fatigued driver becomes less alert, his ability to judge distance, depth and speed is reduced. Accidents involving sleepy drivers are usually the most serious because a sleeping driver cannot exercise any degree of control. Fortunately, drivers can take measures to ensure their personal safety – and that of their passengers – by keeping these precautions in mind:

- Wear your seat belt and make sure your passengers buckle up. If you're involved in an accident, your chances of avoiding serious injury or death are significantly greater.

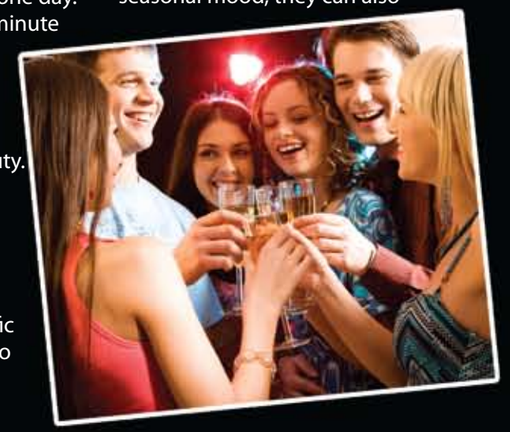
> "**DURING** the coming **HOLIDAYS**, the **LIKELIHOOD** of being involved in an **ACCIDENT** on the highways and interstates is **GREATLY INTENSIFIED**."

Furthermore, wearing a seat belt reduces the secondary impact of an accident, which is the collision between the passenger and the interior of the vehicle.

- Get adequate rest before and during the trip, and avoid driving more than eight hours in one day. Be sure to take short, 15-minute breaks every hour.
- Avoid night driving as much as possible and leaving for a trip after performing a full day of duty.
- Avoid alcohol before and during the trip. After consuming a few drinks, a driver is unable to accurately judge speeds and distances, follow traffic patterns or react quickly to hazards or emergencies.
- Maintain adequate ventilation in the vehicle at all times. This will reduce the possibility of carbon monoxide poisoning. Ensure the entire exhaust system is completely free of leaks.
- Operate your vehicle at speeds appropriate for weather and road conditions and avoid overdriving your field of vision.
- Have your vehicle inspected for proper operation of brakes, steering, windshield wipers, tires, heater and defroster, lights and the exhaust system. Mechanical safety of the vehicle is very important all year, especially in the winter as conditions demand more from your vehicle and you.

Holiday Decorations

Decorating for the holidays is a fun and exciting event. However, while decorations help set the seasonal mood, they can also



set the conditions for a disaster. If your family tradition calls for a live Christmas tree, be sure to select a recently harvested tree and store it outside until you're ready to set it up. Inspect the tree to make sure it's not too dry by bending the needles between your thumb and forefinger to see if they break. You can also bounce the trunk of the tree against the ground a few times to see if a large number of needles fall off. Cut the tree at an angle beginning at least 1 inch above the original cut, place the tree in a container of water and brace securely.

When you set up the tree, place it away from radiators, stoves or other sources of heat such as lighted candles. Ensure Christmas lights and wiring are Underwriters Laboratories (UL) approved and used for interior or exterior purposes as specified (outdoor equipment will be weatherproof). Discard frayed or worn wires and light sets before short circuits occur. Tree lights should also be checked daily to determine drying effects on needles. When needles begin to turn brown, take the tree down. As a preventive measure, unplug the lights on your tree and all other decorations every time you leave your home or go to bed.

Artificial, metallic-type trees have definite fire safety advantages over live trees. However, faulty wiring or light sets can energize the entire tree, causing a potentially deadly electrical shock or severe burn to individuals coming in contact with it. Illuminating the tree with off-the-tree spotlights or floor lights will virtually eliminate the danger of shock or fire. Lighted candles are an almost certain invitation to fires on any tree and should be kept a safe distance away. When decorating a tree, glass or metal decorations are recommended. Cotton, paper or celluloid decorations are a fire hazard and must not be used on or around trees. Also keep in mind that some decorative houseplants are poisonous. Keep plants such as holly and mistletoe out of the reach of small children and pets. Ingestion of these plants can be dangerous – possibly even fatal.

Children's Toys

As you make your toy purchases this year, be sure to read the safety assessments prepared by consumer advocacy groups. Some simple rules to remember are to avoid toys that shoot projectiles, have sharp edges or can strangle or provide an electrical shock to a child. Always buy a toy that is age appropriate (recommended age guidelines are typically printed on the package).

If you plan to put a new bicycle under the tree, don't forget to include the protective helmet. Remember that you have a responsibility to teach your child bicycle safety and test them on their knowledge and application of the "rules of the road."

Amid the chaos of the holiday season, we sometimes forget that we can never give safety a day off. Putting safety in the forefront of your celebrations will help ensure you and your loved ones are around to give thanks for years to come.

A WORD ABOUT THE BIRD

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There's nothing quite like the tastes and smells of the holiday season – roasted turkey, dressing and sweet potato casserole. Top it all off with a piece of pecan pie and you're in holiday heaven. Before carving your bird, however, make sure you follow the proper food safety guidelines.

You can go a long way to prevent the spread of food-borne illnesses by keeping in mind four simple steps: clean, separate, cook, chill. Wash your hands thoroughly with hot, soapy water every time you handle raw meat, poultry, seafood, vegetables and eggs, and keep these food items separate in order to prevent cross-contamination. (You should also keep these foods separate in your grocery cart and grocery bags.)

Clean your work surfaces and wash utensils, knives, cutting boards, sponges and towels in hot, soapy water after every use. If your cutting boards have developed scratches and cuts from extended use, discard them and purchase new ones. This will protect you and those you cook for from the bacteria that can hide within the scratches.

Use a thermometer to measure the internal temperature of food when cooking, and ensure the type of thermometer is appropriate for the method by which you cook. For example, you would choose an oven-safe bimetallic-coil thermometer if you were going to leave it in the food the entire time it cooks in the oven. The U.S. Department of Agriculture recommends the following as minimum safe internal food temperatures:

- Beef, veal, lamb, steaks, roast – 145 F
- Fish – 145 F
- Pork – 160 F
- Ground beef, veal and lamb – 160 F
- Egg dishes – 160 F
- Turkey, chicken and duck (whole, pieces and ground) – 165 F

Refrigerating foods is another important step in preventing food-borne illnesses. Once you arrive home with the groceries, immediately place the meat, poultry, eggs and other perishable items in the refrigerator or freezer. The Partnership for Food Safety recommends a refrigerator should be set at 40 F or lower and a freezer should be at 0 F or lower. The following steps are recommended for refrigerating foods:

- Divide large amounts of leftovers into shallow containers for quicker cooling in the refrigerator.
- Thaw frozen food in the refrigerator, cold water or microwave – never at room temperature.
- Marinate food in the refrigerator.
- Clean out the refrigerator and discard old food on a regular basis.

Food safety is a proactive measure. Adhere to the food safety guidelines above when preparing holiday meals and you'll leave food-borne illnesses out of your celebration.

FYI

After your food has been properly cooked, never place it on a plate or platter that previously held raw food and don't handle it with contaminated utensils.

Christmas Wishes

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November is here and you're wondering, "Hmmm ... what do I get my significant other for Christmas?" Well, if Santa is delivering a motorcycle this Christmas, or if there already is one in your garage waiting for the snow to melt, you might consider buying motorcycle protective gear. You say your special rider already has some gear? Well, maybe it's time for something new. Either way, you can't go wrong wrapping something designed to be worn by a motorcycle rider and placing it under the tree. Here are some ideas on what to buy.

Helmets

Helmets are always a good choice – all you need to know is if the rider wants a full-face, an open-face or a half helmet. For maximum protection, full-face helmets are the best way to go. Good helmets vary in price from about $90 to more than $700. Make sure the helmet meets Department of Transportation (DOT) specifications. Also, it doesn't hurt if it meets the Snell specifications, as well. Oh, yeah, you will also need to know what size noggin the rider has.

Already have a DOT/Snell helmet? Good. Does your rider have eye protection? When you purchase eye protection, it must meet or exceed the American National Standards Institute (ANSI) code Z87.1. There are far too many styles to go into any detail, but make sure your rider has a pair – whether they're goggles or glasses. That windshield on the front of the bike isn't enough to protect the eyes.

Footwear

This important item is often overlooked. Flip-flops or sandals are a definite "no-no." Good, sturdy, over-the-ankle protection is what a rider needs. Rubber soles with a good tread design and a low heel are best. Stay away from boots that have deep treads. These treads can get hung up on your foot pegs, making for some "exciting" moments when you try to brake or shift. Also, avoid hard-soled footwear, which can be very slippery and unexpectedly dump you and your bike when you put your feet down at a stop. Replacement parts for motorcycles aren't cheap and you'll lose lots of "cool" points if your foot slips and you drop your bike at the gas station. Does your rider own a cruiser or a sportbike? These are the two most popular types of motorcycles currently being ridden, and your rider will probably want footwear that complements the bike.

Jackets and Gloves

The best upper garment to wear is a jacket that is designed for a rider. Leather, textile or even mesh jackets will provide excellent protection against the elements. Hitting a bumblebee at 50 mph is painful – and anyone who has ever ridden knows what I mean. Many of these jackets have elbow, shoulder and spine protection in the form of pads, and leather is just plain tough. This type of protection will keep your skin from looking like raw hamburger should you go tumbling down the road.

Many riders have more than one pair of gloves, each tailored for the climate – whether it's hot, cold or wet. The bottom line is the glove should fit well and not interfere with controlling the bike. Many gloves also include extra padding on the fingers and knuckles. That helps protect a rider's fingers from painful "dings" when road debris is kicked up by traffic.

Cover Your "Six"

When it comes to pants, dress for the slide – not the ride. Like the jacket, pants should be designed for motorcycle riding. Pants are available that include knee and hip protection. Some riding pants are designed to fit over your regular pants. Chaps provide protection for the legs, but lack protection for your fourth point of contact. If your rider is "jump qualified," they'll know what I mean. If your rider owns a dirt bike or an all-terrain vehicle, then you'll want to add some knee and shin protection along with gloves featuring padded fingers and knuckles.

A good rain suit is a must. We get plenty of rain here in the South, and sometimes it comes down in buckets. One- or two-piece rain suits are available and are well worth the money. Quite a few years ago, I made the mistake of wearing my Army-issue rain gear on a ride. I paid dearly for my lack of judgment and suffered a terrible rash that took many days to clear up.

While a motorcycle dealer is a good place to look for gear, online shopping works, as well. Before you spend your money, ask plenty of questions and do some research. And while you're at it, buy some gear for yourself. Good riding gear is a gift that not only keeps on giving; it's a gift that helps riders keep on living.

THE IMPORTANCE OF THE CREW MISSION BRIEF

COMPILED BY THE KNOWLEDGE STAFF
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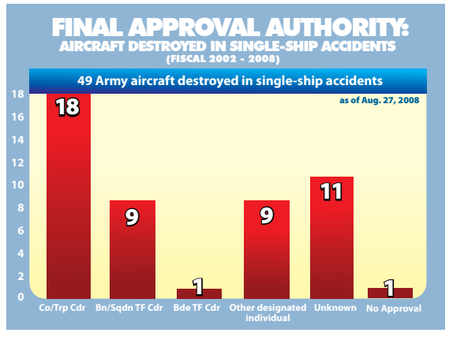
Do you know the importance of the crew mission brief? Army Regulation (AR) 95-1, *Flight Regulations*, paragraph 2-14, describes in detail the mission approval process and the duties and responsibilities of the crew, briefing officer and final approval authority. The following scenario places emphasis on the importance of understanding the mission approval process and the consequences if the aircrew isn't approved or briefed for a follow-on mission.

In this accident scenario, the troop commander and troop standardization pilot selected an OH-58D combat crew two weeks before the mishap occurred. The pilot in command (PC) had more than 400 total hours, of which over 300 were in the OH-58D. He had passed his PC evaluation and had a total of nearly 30 hours of PC time. The pilot (PI) had more than 350 hours, of which over 275 were in the OH-58D.

The crew was conducting high-altitude and desert environmental flight training in preparation for an upcoming deployment. The crew had previously conducted some high-altitude and desert environmental training; however, the PI had not completed all his training.

The weather conditions were pressure altitude (PA) 5,100 feet and temperature 25 C. The crew had computed their performance planning card (PPC) for PA 1,000 feet and temperature 14 C, which was the normal PA and temperature of their home duty station.

The actual mission briefed and approved by the TF commander was an air assault mission. The crew was part of a scout weapons team (SWT) consisting of OH-58D aircraft. The SWT crews received notice the mission was to take place in 24 hours; meanwhile, the TF operations officer issued a warning order followed by an operations order. A thorough air mission brief (AMB) was conducted the night before the mission by the TF operations officer and TF staff. The "accident" aircraft PC, the PI from the other SWT, the mission briefing officer and the troop commander were in attendance for the AMB. The SWT air mission commander (AMC) and PI of the "accident" aircrew did not attend the AMB due to crew rest.



On the day of the mission, the crew awoke and finished their final mission planning based on the AMB they received the night before. Since all crewmembers were not present at the AMB, they conducted a crew brief one hour before the combined arms rehearsal (CAR). It was at this time the SWT AMC received his AMC duties. The TF commander and his staff conducted the CAR. All crews, the briefing officer and the troop commander attended the CAR. Everyone knew their assignments and what they were supposed to do to complete this mission successfully. The mission was conducted as briefed with no incidents and was well planned and rehearsed.

Following the completion of the mission, the SWT AMC decided the team had time to conduct additional high-altitude and environmental flight training. The team departed the area and proceeded to the forward arming refuel point, discussing the additional training they wanted to do. They had not planned for any additional training; therefore, they had no real training plan or assigned tasks to conduct. The troop commander provided guidance that if they had additional time after the mission to go and do more environmental training. However, the TF commander who was the final approval authority for the mission had no knowledge of this additional training because these details were not documented on the risk assessment worksheet.

Upon refueling, the SWT departed for a training area they had used previously to conduct their high-altitude and environmental training. They arrived at this training area and began conducting dust landings and SWT target handovers. Several minutes later, they decided to go to another training area. While en route to this training area, the AMC spotted a canyon he thought would be a good place to conduct maneuver training. According to the AMC, the purpose of this training was to limit their exposure times as they proceeded through the canyon.

The AMC and his PI conducted the first set of maneuvers through the canyon while the "accident" aircraft positioned atop a mountain to observe the AMC's aircraft. After the AMC and his PI each made a pass through the canyon, the "accident" aircrew proceeded to the beginning of the canyon with the PI on the controls. The PI made his run through the canyon as the AMC had previously. The AMC provided overwatch from the same mountain vantage point as the accident aircraft had used previously. The AMC landed at the top of the mountain and filmed the "accident" aircrew as they made their two runs through the canyon.

Upon completion of the PI making his pass through the canyon, the PC took the controls and moved back to the start of the canyon. The PC was approximately 150 feet above the canyon floor as he maneuvered through the canyon. He was about halfway through his run when he noticed he was below his bucket speed (which is synonymous with max endurance airspeed). The PC applied forward cyclic to gain some airspeed; however, when he began to level the aircraft, it continued to sink and struck the canyon wall, destroying the aircraft.

What Went Wrong?

The actual cause of this crash was pilot error. Nevertheless, just as important, errors were also made in the mission brief and approval process for this mission. The mission was actually briefed and approved for only the first mission; however, the SWT decided to conduct an unplanned follow-on training mission at the last minute. The first mission was properly planned, briefed and rehearsed in accordance with AR 95-1, paragraph 2-14, and it showed by the conduct and success of the mission. Everyone knew their role and task to perform the mission.

The follow-on training had not been scheduled, briefed or approved. The risk assessment matrix did not provide any risk assessment for the training. In fact, the crew had not planned for the additional training that included high-altitude tactics and maneuver training. The "accident" aircrew PPC was incorrect for the mission as much as 4,000 feet PA and 11 C temperature. The PPC error did not cause the accident, but it demonstrated the inexperience of the accident crew.

Additionally, the only guidance or semblance of an aircrew brief the troop commander gave the SWT was to just go out and do some additional environmental training. He clearly did not brief or get approval in accordance with AR 95-1. Without a crew brief and a plan, the crew did just that. In doing so, the PC exceeded the aircraft pitch attitude limitations according to the -10 operator's manual. When he tried to recover the aircraft from the dive, it continued to sink and the PC failed to apply any control input that would correct the sinking. Also, the PI did not adhere to the aircrew coordination training and challenge the PC when he placed the aircraft in a steep dive and exceeded the aircraft pitch limitations. The PC and the PI actions showed crew inexperience operating in high-altitude desert terrain and as a combat crew. This was possibly due to lack of crew experience. They struck the canyon wall approximately 80 feet above the canyon floor, which sent the aircraft cartwheeling along the face of the canyon wall, striking the ground four times before it came to rest on its left side. The crew received non-life-threatening injuries; however, the aircraft was destroyed.

AR 95-1 is specific in the requirements and responsibilities of crewmembers, briefing officers and final approval authorities. This scenario shows that when a crew brief is properly conducted, the mission can be a success; however, when unapproved and nonbriefed training is conducted — it can lead to disaster.

can you HEAR me now?

CHIEF WARRANT OFFICER 4 DAVID MUEHLEISEN
U.S. Army Combat Readiness/Safety Center
Fort Rucker, Ala.

They're oversized, overweight and, ultimately, unforgiving. The fielding of Mine Resistant Ambush Protected (MRAP) vehicles provides Soldiers with greater protection against enemy threats than ever before. The hull design, armor enhancements and additional equipment in MRAP vehicles all offer extra defense on the battlefield. However, these advancements have come at a price for some vehicle crews who've had to cope with restricted outside visibility and altered vehicle handling. As the Army continues to field and improve its combat vehicles, the need for effective crew coordination is essential for Soldiers to safely and effectively complete their mission.

Vehicle crews are made up of Soldiers of varying skill levels. Training and understanding each member's role from the beginning makes all the difference in the outcome of combat operations. Two fatal MRAP accidents this year may have had different outcomes had the crews worked better together while navigating narrow roads near canals. The driver, vehicle commander and gunner needed to keep each other constantly informed on the vehicle's position on the road; however, they apparently did not understand this requirement.

Crew coordination defines each crewmember's basic duties and responsibilities in enhancing overall crew effectiveness. Some examples of these include:

- Communicating positively; ensuring the right message gets through.
- Directing assistance when vehicle crewmembers need it.
- Announcing actions, which ensures everyone is aware of what is happening.
- Offering assistance to a crewmember that is especially busy or needs help. This benefits the whole crew and is something all should be prepared to do without being asked.
- Acknowledging actions to ensure those taking them know everyone is aware. A "Roger" callout may be all that is needed to maintain crew situational awareness.
- Using plain or standardized terms and avoiding slang to ensure everyone understands what you're saying. Ambiguous words or phrases like "I have it" or "Right" can have more than one meaning and bring about an incorrect response.
- Providing vehicle control and hazard advisories. All crewmembers should be prepared to assist the driver in avoiding road hazards, traffic, canal edges or other things they may not see due to the reduced visibility in up-armored Army Motor Vehicles and Army Combat Vehicles.
- Coordinating action sequences and timing so crew actions mesh. Sequencing actions and timing can be critical during weapons engagements, loading of ammunition, turret movements and while maneuvering the vehicle in combat.

Standardized words and phrases, such as those used in radio transmissions, help crews avoid confusion and allow them to react more quickly and efficiently. Using words known by everyone in the crew also prevents them from having to be repeated. If the operators' manuals have a standard callout or term for a piece of equipment, get in the habit of using it, especially if a new crewmember joins the team. If someone doesn't understand what you have said, try saying it another way or in clearer terms instead of repeating it multiple times or raising your voice. Louder is not always clearer.

To ensure the whole crew maintains situational awareness, keep an open flow of information, especially in areas where the threat is elevated and the terrain is constricted. Conversations should be limited to mission-focused communications during critical times or events. The vehicle's intercom system should be used to enhance crew communications and checked before the mission to ensure it works. Be sure to clarify if what you said is not understood. Likewise, ask other crewmembers if you don't know what was said or is happening.

Crew coordination is more than open discussion while operating the equipment. Good, effective crews constantly work on improving their coordination and use after-action reviews (AARs) as a forum for future crew improvement. The entire crew acts as a team during mission planning, execution and AARs. These combat-proven techniques can help you better accomplish your missions and prevent accidents.«

I SHOULD'VE LISTENED

COMPILED BY THE KNOWLEDGE STAFF
U.S. Army Combat Readiness/Safety Center
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As I begin this story, you'll have to understand I grew up in Hawaii. You know what that's like – warm, sunny weather every day. Our summer temperatures typically run in the mid-to-high 80s, with winter cold snaps plunging the mercury into the mid-to-low 80s. My only previous winter driving was a couple of winters at Fort Rucker in the "polar" regions of southern Alabama.

I was excited about my first aviation assignment out of flight school. I was assigned as company executive officer (XO) for a unit at Fort Campbell, Ky. I arrived there in late February, just in time for some heavy snows. My commander phoned me early one day before physical training (PT) to tell me the roads were "Condition Black" due to heavy snowfall. He told me we didn't have to report until 1 p.m. I thought, "Wow, I'm being told to stay home because there's too much snow on the roads – I like this Army job!" A few days later, we were informed the area was expecting freezing temperatures the next morning. We were told there would be no PT and to come in at 9 a.m.

As the company XO, the company commander was my supervisor. We were the only commissioned officers and worked in the back half of the office along with the first sergeant. The orderly room clerks, a supply sergeant and Sgt. Morrison – an unforgettable mechanic who worked as the admin sergeant – occupied the front half of the room.

Recognizing I might not be up to snuff on winter driving, Sgt. Morrison approached me and asked if I was familiar with black ice. I told him no. He quickly explained what black ice was and, more importantly, recommended techniques on how to deal with it. Although this was more than 10 years ago, I clearly remember him saying, "Sir, the roads will look normal, but there will be a clear layer of ice (on them) that can kill you." He explained I needed to leave home a bit earlier, drive slower and allow more time and distance to brake. He particularly emphasized I needed to stick to the main roads and avoid back-road shortcuts.

> "Be **WILLING** to **LISTEN** to **ANYONE** who is **KNOWLEDGEABLE** about the **RISKS** you are facing and **UNDERSTANDS** how to use **CRM** to mitgate them."

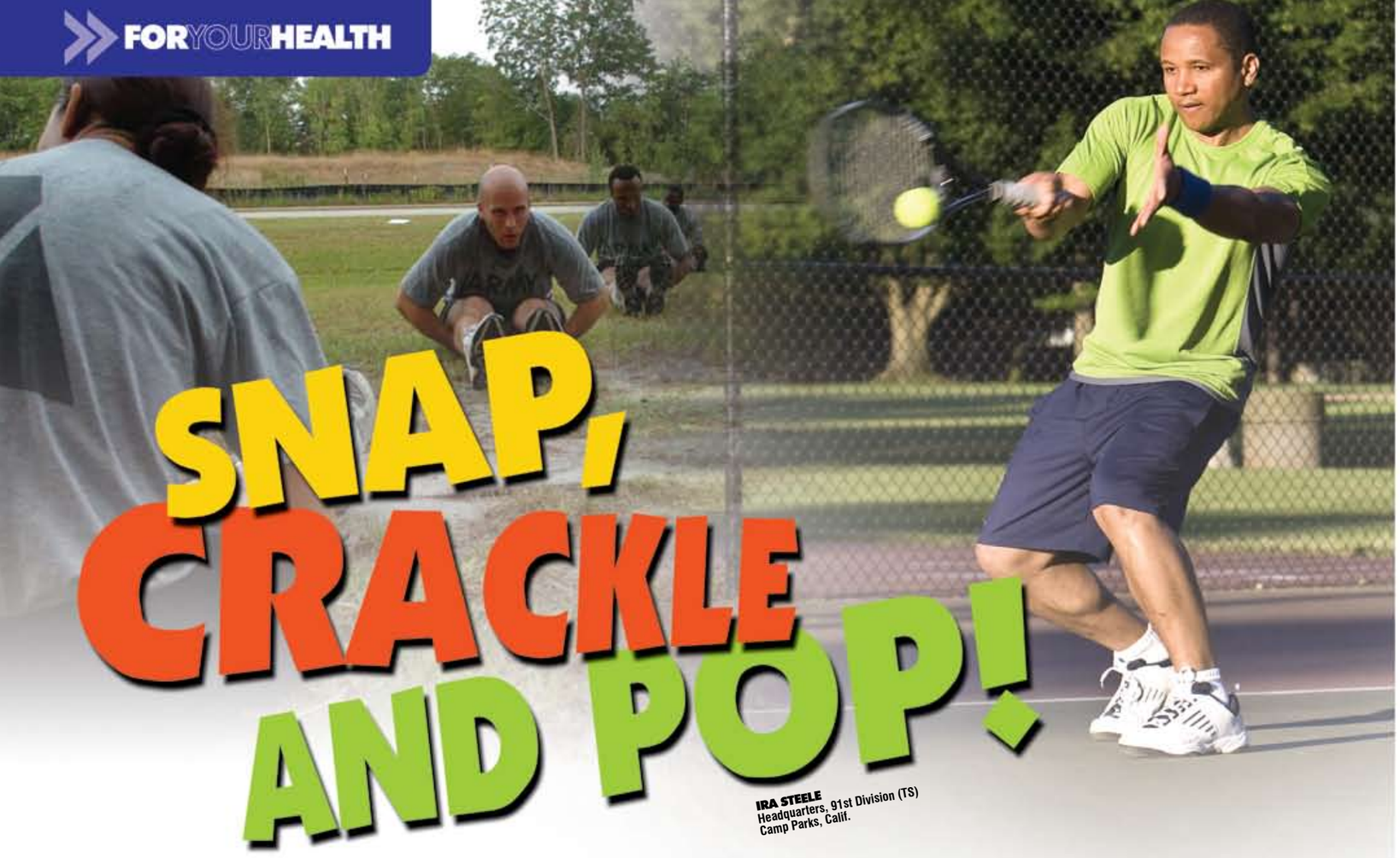
Just as forecast, ice covered everything the next morning. I remembered Sgt. Morrison's advice, so I left home earlier than normal to avoid the rush-hour traffic along Highway 41A. Driving on ice was a new experience for me – one that reminded me of hydroplaning on a wet road. I was glad I had a front-wheel-drive car with good tires and safely made it onto post. I figured all the traffic on the main roads had started to melt the ice on them.

I drove through main post along Chaffee Street and headed to Range Road – a back road shortcut to the airfield. I wasn't paying attention and approached the intersection of the two roads going too fast. I hit the brakes, lost traction and started to slide. Just then, I saw a truck approaching on my left. I knew I couldn't stop before I got to the stop sign. I figured I was going to either hit the truck or land in the ditch on the far side of the road, maybe even flip my car. Only then did I remember Sgt. Morrison's last tip, "Avoid the back roads!"

I slid through the stop sign and steered to the right to avoid the ditch. My left tires had just slid off the pavement when I regained control of my car. Although the slide only lasted a few seconds, fear made it seem a lot longer as I contemplated landing in the ditch or smashing into the truck. I avoided both and eventually made it to work, shaken but unharmed.

Back then, I didn't know what composite risk management (CRM) was, so Sgt. Morrison did what all good noncommissioned officers do. Although he wasn't my supervisor, he took care of this junior officer. Some Soldiers think officers can – and should – always be able to take care of themselves. Thank goodness Sgt. Morrison didn't assume that. When he learned I wasn't familiar with winter driving and black ice, he took it upon himself to educate me. He identified the hazards and provided me with controls to mitigate the risks. I followed his advice – but only partially. I got complacent upon arriving on post and, against his warnings, took a back road. I'd failed to realize the back roads were icier than the main roads and didn't appropriately reduce my speed. Luckily, no one got hurt and my car and the truck escaped unscathed.

So what are the lessons learned? First, some things are more important than rank. Be willing to listen to anyone who is knowledgeable about the risks you are facing and understands how to use CRM to mitigate them. Second, once you have developed controls, follow through with all of them. Don't change your mind to choose a 70-percent solution. When it comes to safety, 70-percent solutions can easily become 100-percent disasters.



SNAP, CRACKLE AND POP!

IRA STEELE
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Camp Parks, Calif.

For many Soldiers, participating in sporting activities is the perfect way to spend their spare time. In addition to the physical benefits sports provide, they can also offer Soldiers an outlet for stress. Sometimes, though, going up for that rebound can take you out of the fight just as quickly as the enemy on the battlefield.

According to the injury prevention program at the U.S. Army Center for Health Promotion and Preventive Medicine, sports and physical training (PT) injuries were the second-leading causes (18 percent) of nonbattle injuries requiring Soldiers to be evacuated by air from Iraq for treatment between 2003 and June 2006. Below are some of the most common sports and military fitness training injuries, plus some tips for injury-free exercises.

Runner's Knee

About one-fourth of all problems treated by orthopedic surgeons involve the knee, according to the American Academy of Orthopedic Surgeons and the Department of Defense Military Injury Metrics Working Group White Paper. Torn ligaments and cartilage are the bulk of the problems, but runner's knee is a loose heading for many aches and pains involving the kneecap.

Runner's knee, which can strike cyclists, swimmers, basketball and volleyball players, step aerobics fans and runners, happens when the tendon below the kneecap becomes irritated from overuse or there is wear or arthritis under the kneecap. Women are especially vulnerable to ligament injuries and other knee disorders, with two to eight times the number of injuries found in male athletes. To help prevent knee injuries, follow the safety tips below:

- Replace worn-out shoes or insoles to help reduce impact. Switching from a hard to a soft running surface – or from a hilly to a flat route – may also relieve symptoms. Shoe inserts called orthotics, which lift your arches and help position your feet, may also help.
- To help hold your kneecap in line, strengthen your quadriceps (the front thigh muscles). Getting more rest and cross-training can also help prevent overusing one set of muscles.
- In bad cases of runner's knee, take two days off and take anti-inflammatory medication, such as ibuprofen. After two days, be sure to warm up and cool down. Ice your knee for 20 minutes after the workout.
- Use weight machines to do leg extensions, concentrating on the last 30 degrees of the extension. Eight weeks of this exercise will keep runner's knee pretty much under control.

Ankle Sprain

What long-time basketball, volleyball, soccer or hockey player or runner hasn't twisted an ankle and torn a ligament or tendon? Ankle sprains account for one in five sports-related injuries, according to the American Orthopedic Foot and Ankle Society. Strengthening exercises, such as heel lifts on stairs, can help prevent some sprains. Taping a weak ankle and wearing high-top boots and a lace-up ankle brace may also prevent injuries, but only some.

Treatment of ankle sprains involves RICE, an acronym for rest, ice, compression and elevation. Place your ankle upon a chair while you ice it for 20 minutes, three times a day. Then wrap it with an elastic bandage and keep it elevated. Make sure your skin doesn't freeze. It's a good idea to X-ray the ankle to rule out possible fractures and chipped bones.

Rest should only be for about a day. A helpful exercise is to sit in a chair and cross your legs so the injured ankle is off the floor. With the big toe on the injured foot, trace imaginary letters from A to Z.

Shin Splints

The shin bone is the attachment site for muscles used to help raise the arch

FYI

In an effort to combat Soldier injuries, the U.S. Army Combat Readiness/Safety Center is offering a new course through Combat Readiness University-II. The Injury Prevention through Leadership Course provides concise, accurate information, guidance and motivation Leaders need to prevent musculoskeletal injuries.

The course focuses on evidence-based strategies that have scientific backing, with strong emphasis on the Joint Services Physical Training Injury Prevention Work Group intervention recommendations. The goal of the course is to inform all Leaders of the severity of the problem with injury prevention, outline the major risk factors that contribute to the problem and provide practical strategies that can be implemented to prevent unnecessary musculoskeletal injury.

This course is located on the Combat Readiness University-II Web site at https://crc.learn.army.mil. Login with your Army Knowledge Online (AKO) login ID and password, select the courses tab, open the Joint Forces Safety Training Catalog and enroll in the course. Army Safe is Army Strong!

of the foot. Shin splint injuries are felt as pain on the inner side of the middle third of the shin bone and can be caused by running or jumping on hard surfaces, wearing worn-out shoes or increasing intensity too fast while training.

Shin splints often occur in people who aren't used to exercise. Wearing good shoes with solid arch support often solves the problem. Also, using the 10-percent rule (mentioned in the info box to the right) ensures you don't increase training too fast. Other ways to prevent and treat shin splints include cross-training, ice, orthotics, anti-inflammatory medication and strengthening and stretching of lower leg muscles.

Pulled Muscle

While you can tear any muscle tissue during exercise, the most common pulls are to the hamstring, calf (especially in aging tennis players) and groin muscles. Most are caused by weakness, fatigue, inflexibility or a hasty and improper warm-up.

The hamstrings, the muscles in back of your thighs, go through a wide range of motion during running and are under great stress as they stretch out quickly in a long stride. When the hams pull, you may feel a painful pop and involuntarily grab the back of your thigh, which later can turn black and blue. You may also feel a gap in the muscle where the tear occurred.

RICE, anti-inflammatory medications and gentle stretches are the best ways to treat muscle pulls. As the injury is healing, start a preventive program of gentle stretching and strengthening the muscle. Take time to warm up and cool down. Warm up means light activity until you break out in a slight sweat and then stretching. Don't worry if you're not as flexible as your workout partner or teammates. The point of stretching is to help your muscles, not your ego.

Low Back Pain

The good news here is that low back pain is less prevalent among people who exercise regularly. It is a far more serious problem among overweight, sedentary people. Low back pain, however, is always lurking around the corner for golfers, tennis players, cyclists, joggers and baseball and softball players. Usually, the problem is the sudden overloading of muscles and ligaments that aren't warmed up or strong or flexible enough to withstand the activity. Back spasms, bulging discs and sciatica (pain shooting down the leg from the lower back) are less common but more painful.

Back pain treatment depends on the injury. A bulging disc and sciatica require immediate medical attention. Back spasms and muscle pulls respond to RICE, anti-inflammatory medication and a stretching and strengthening program. To keep low back pain at bay, learn about proper standing and sitting posture and lifting techniques. Scores of good exercises increase back muscle strength and flexibility, as well as abdominal muscle strength. Abs support the back muscles; if the abs are weak, the back muscles become overstrained.

THE "10-PERCENT" RULE

A tried-and-true rule in sports medicine may help you avoid doing too much too soon. The "10-percent" rule says to increase the frequency, duration and intensity of an activity by only 10 percent per week. So, if you start walking 10 miles the first week, you would walk no more than 11 miles the second week.

Shoulder Pain

Shoulder pain is common in sports that involve excessive overhead motion, such as swimming, tennis, weight training, volleyball, baseball and softball. Most shoulder problems are from overuse. The shoulder is a ball-and-socket joint held together by a group of muscles and tendons called the rotator cuff. Repeated use loosens the rotator cuff, and you feel stiffness, a lack of strength and slipping in the shoulder, especially as you raise your arm overhead. RICE and anti-inflammatory medication help shoulder pain. But the best treatment is also the best prevention: exercises to strengthen shoulder muscles.

Tennis/Golf Elbow

When the tendons and muscles on the outside of your elbow are repeatedly overloaded in the backhand stroke in tennis, the result is tennis elbow. Golf elbow can occur on either elbow – on the outside of the leading elbow (the left arm for right-handers) or the inside of the trailing elbow (the right arm).

RICE and anti-inflammatory medication are routinely prescribed with these elbow ailments, but they don't heal the tissue. Forearm-strengthening exercises help in healing. Wrist curls (palm facing forward) and reverse wrist curls (palm facing backward) using light weights are great. Squeezing a soft rubber ball until arm fatigue sets in also builds strength.

Sports have always been a favorite pastime for Soldiers. Don't let a preventable injury keep you on the bench. Play safe and play smart.

THE "FIGURE 4" STRETCH

The "figure 4" stretch is good for pulled muscles. Sit with one leg extended and the opposite foot tucked inside on your outstretched thigh. Lean forward and reach as far as possible without feeling pain. Hold for 20 seconds. Repeat with the opposite leg extended.

a sleepy time Nightmare

MICHAEL B. ABRAMS
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I thought I was invincible 30 years ago. I was working in Washington, D.C., in a great job on my third assignment as an enlisted Soldier. As a specialist (E4), I had a room in a large, comfortable barracks at Fort Myer, Va., and worked at a broadcast booth at the Navy Yard in Washington, D.C.

What was really sweet was that my girlfriend and I were soon to be married. I'd found an apartment I could afford in Fairfax, Va. The only thing I had to do was drive to Alexandria, Ala., and get to the church on time.

My noncommissioned officer in charge (NCOIC) saw to it my work was caught up and I was set for two weeks leave. When Tuesday afternoon rolled around, he told me I could leave, but warned me to be safe.

I went to bed early, knowing I'd need to be rested to make the drive from Fort Myer to Alexandria. I woke up at 11 p.m., feeling great after a few hours of sleep. I decided to shower and finish packing the car. If I left right after midnight, I could get a six-hour jump on the trip and arrive at my fiancée's home about noon instead of during the evening.

I pulled out a little after midnight, driving my new Ford Granada, a car the company marketed as being just as good as a Mercedes! The

GOT TRiPS?

Want some help dodging the pitfalls that almost did in the author of this story? Use your Army Knowledge Online (AKO) username and password to login to TRiPS from the USACRC Web site at https://crc.army.mil. As you go through the TRiPS program, you'll see questions designed to help you develop effective strategies to mitigate the risks posed by fatigue.

weather was clear, the traffic was light and there wasn't a state trooper in sight. This was going to be an easy trip.

I had promised my NCOIC and my fiancée I'd be careful on this trip. But, to me, "careful" meant wearing my seat belt, doing the speed limit and not driving under the influence. I was used to driving long distances and had covered the 650 miles from Fort Myer to Alexandria in the past without problems. But this trip would be different.

After nearly six hours on the road, I was exhausted. My nap the previous evening hadn't been enough to carry me all the way through the trip. I surfed the radio without finding much of anything I liked, so I decided to stop when I found a place. In the meantime, I rolled down the windows and shifted and stretched in my seat. I made up songs and sang them – badly. If only I could make it just a little while longer.

But the sandman had other plans.

It was about 6 a.m. and there was a light drizzle on the road. I was driving near Lexington, N.C., crossing a small bridge over Abbotts Creek when exhaustion overcame excitement and I fell asleep at the wheel. I don't remember the "crash" – only waking up afterward and wondering what had happened. As it turned out, I'd driven over a short concrete bridge siding and landed with my car nose-down in a dry creek bed. The car was at such a steep angle the door fell open when I pushed it and I jumped to the ground.

Fortunately, thanks to the light traffic, I hadn't hit anyone else. As I waited, other drivers stopped to help me until the state trooper arrived. I didn't know it then, but I had three deep cuts on my face. When the state trooper arrived, he radioed for an ambulance and a wrecker. I went to a hospital in Winston-Salem, N.C., while what was left of my car went to a junkyard at a gas station. The doctors stitched up my face and looked for signs of broken bones or other trauma. I appeared to be OK and was released.

However, now I was stuck without a car and with very little cash. I tried to contact my NCOIC and left him a voice message. I said I'd been in an accident, but wasn't badly injured and intended to continue my trip. I decided not to call my fiancée – I didn't want to worry her.

I got a lift to the Winston-Salem airport, where I used my credit card to rent a car. I then recovered my personal items from the wrecked Granada and got on the road again. Although I was tired, I was determined to get to the church on time – even if it killed me.

When I got to Atlanta, I was hungry, thirsty and needed to fill the gas tank. While at a gas station, the gas cap fell off the bumper and rolled under the car. I was too sore to bend over and reach under the car to get it, so I asked the attendant if he could come out and get it for me. Although he didn't want to leave his bullet-proof cocoon, he did. It was only after I was back on the highway that I realized I could have rolled the car a few inches forward and picked up the cap myself. Fatigue tends to dull one's thinking.

I eventually arrived safely at my in-laws' home. As it turned out, my NCOIC had gotten my message and called my fiancée, concerned how I was. She'd been a nervous wreck all day, wondering what kind of condition I was in. After describing my day-long adventure and receiving my first tongue lashing from the in-laws, I collapsed on a bed and fell fast asleep.

That accident nearly cost me my life. The outcome would have been very different if I'd hit the bridge siding a little further to the left on my front bumper. As it was, I cost the Army an ambulance ride, a couple of hours in the emergency room and medical treatment that included 32 stitches.

We celebrated our 30th anniversary this year. We still take long trips, but I do a much better job of planning for them. Nowadays, I use information provided by the U.S. Army Combat Readiness/Safety Center (USACRC) – particularly the Travel Risk Planning System (TRiPS) – and other sources to plan for proper rest before and during our travels. Back when I thought I was invincible, I thought fatigue was the one risk factor I could beat. I was wrong. I almost let it turn my trip to be with the girl of my dreams into a nightmare.

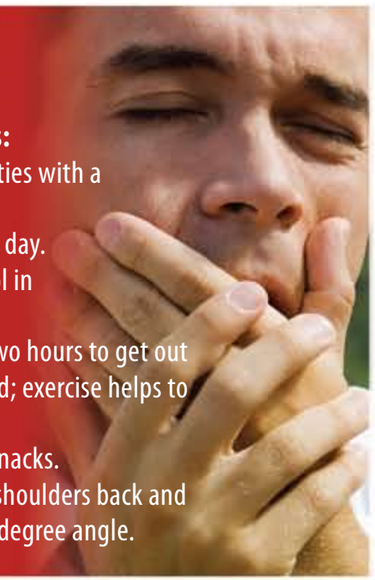
IS THE SANDMAN AFTER YOU?

Getting a little droopy on the eyelids? How about the ever-popular head snaps? Having trouble focusing your eyes on the road and your mind on the drive? Wondering why things look unfamiliar around you because you can't quite remember the last few miles? It could mean the "Sandman" is about to pay you a visit. To keep him from putting your lights out – maybe for good – consider the following tips from the National Safety Council:

- Maintain a regular sleep schedule that allows adequate rest.
- When the signs of fatigue begin to show, get off the road. Take a short nap in a well-lit area. Do not simply stop on the side of the road.
- Avoid driving between midnight and 6 a.m.

When Planning Long Trips:

- Share driving responsibilities with a companion.
- Begin the trip early in the day.
- Keep the temperature cool in the car.
- Stop every 100 miles or two hours to get out of the car and walk around; exercise helps to combat fatigue.
- Stop for light meals and snacks.
- Drive with your head up, shoulders back and legs flexed at about a 45-degree angle.



The Capstone Event

1ST LT. ETHAN MILLER AND WARRANT OFFICER 1 ROSS WISE
1st Battalion, 212th Aviation Regiment
Fort Rucker, Ala.

The following observations on aviation mission planning and composite risk management (CRM) are from some of our newest Army aviators during their helicopter flight training at Fort Rucker, Ala. From this, one can easily conclude that a marriage of operational training and mission execution is embedded with safety and risk management.

Since its inception, Army aviation has played a major role in winning our nation's wars. Refined airframe technology and highly trained operators are combined to offer the perfect air asset for today's ground tactical commanders. Often, these missions involve multiship tactical transport of troops, supplies and equipment. These missions require extensive pre-mission planning, a high level of involvement among its respective pilots, contingency considerations and thorough risk mitigation.

To prepare for real-world situations, today's Army Initial Entry Rotary-Wing flight students experience battle-focused training. This progressive training consists of detailed instruction, allowing flight students to crawl-walk-run through varying levels of complexity with the goal of graduating aviators competent in the basics of their airframes.

The safe and controlled environment of the Black Hawk Flight School XXI (FS XXI) course presents the perfect opportunity for flight students to capitalize on a capstone event called Operation Wooden Horse. This is a joint training mission between UH-60 Black Hawk student pilots at Fort Rucker and the 6th Ranger Training Battalion (RTB) at Fort Benning, Ga.

The Mission

This multiphase air-assault mission included a cross-country flight of 12 aircraft, tactically transporting 180 Ranger students from Pickup Zone (PZ) Eco to the designated objective area Python at Eglin Air Force Base, Fla. The notional mission objective was to restrict the ability of the Burmino Independence Front (BIF) from conducting future coordinated attacks against the Argon government.

Pre-mission planning required staying long nights in Fort Rucker's Learning Center briefing room hashing out the details. All of our flight school knowledge and training were challenged and tested to the limit. We had to develop a plan for a cross-country flight to put 12 aircraft into the air from Lowe Army Heliport; refuel at the forward arming and refuel point (FARP) at Florala Municipal Airport; proceed to the PZ to transport 180 Ranger students to Eglin Air Force Base's auxiliary field No. 6 (Objective Python); and then recover to Lowe Army Heliport in accordance with federal and military aviation regulations.

Each mission segment was planned beforehand so that, on

the day of execution, all parts and pieces would flow together in one seamless rendering for mission success. As we all know, a plan is an idea to base changes on. Therefore, we planned resilience into each phase and thoroughly rehearsed them to provide room for changes contingent upon the whims of Murphy's Law – "Everything that can go wrong, will."

Successful mission completion by meeting the objective while mitigating the identified risks was our desired end-state. The following are a few of the questions we prepared for during pre-mission planning:

- What timeline was needed to successfully air assault the Ranger students into the landing zone (LZ)?
- For 12 aircraft flying approximately 100 feet apart in a staggered-right formation, what route should we use to fly from point A to point B, flying tactically, but safely clearing known obstacles and avoiding extreme heading changes?
- Would we have enough fuel?
- What if we had an en route emergency causing one or more of our aircraft to make a precautionary landing?
- How would we account for the overall drop in Ranger carrying capacity if a precautionary landing occurred?
- How much food would we need for 180 Ranger students?
- If we inadvertently punched into the clouds, how would the formation of aircraft react?
- How do we communicate with the Ranger students on the ground?
- Once we delivered all Rangers to their respective LZ, would we have sufficient fuel to return to Lowe Army Heliport?
- What is the refueling capacity at FARP Florala, and can it be accomplished with the prescribed 12 aircraft at one time, or should we divide our group into two or more serials?

After-Action Review (AAR) Notes from Student Flight Lead

I did not realize the full responsibility of being flight lead until our planning cell received the mission and we began analyzing it. Until then, I imagined the instructor pilots (IPs) would walk us through the briefing, explaining most components in depth and ensuring every detail was covered. Wrong! Nothing was further from reality. From the beginning, it was clear that we would organize ourselves, analyze the mission and prepare and conduct the entire briefing and rehearsal to our peers, their IPs and the company commander. The IPs prescreened our product. If we forgot any of the mission details or if we briefed incorrectly, they addressed these concerns during the question-and-answer session.

Our training courses, up to this point, had given us the tools we required. We were proficient in using the Aviation Mission Planning System (AMPS) to plot and calculate flight routes and training that included multiship formation flights. We used CRM in all aspects of the mission planning as part of every training flight.

The preparation for the briefing with our planning cell was an eye-opening experience. We had to consider the fictitious threat from the opposing forces in our scenario; what their capabilities were, what weapons and tactics they were likely to employ and how that might affect our mission. We had to consider the ground commander's vision and how his intent dictated our method for accomplishing the mission. We also had to consider emergency procedures as a flight of multiple helicopters and what actions we would take to recover safely if incidents occurred. Observing my peers as we conducted the briefing, I perceived a sense of astonishment, as if they were thinking, "Wow, I'm going to be required to do that soon at my unit!" Watching the role of the air mission commander (AMC) and company commander in bringing up possible contingencies and deciding on appropriate solutions was also a valuable experience.

The most valuable lesson learned from the Ranger mission was how to apply CRM properly. For everyone involved, the mission was a vivid illustration of CRM as "a holistic assessment, blending tactical and threat-based risk management with accidental, hazards-based risk management." (TC 1-210, *Aircrew Training Program Commander's Guide to Individual and Crew Standardization,* Chapter 6, Page 6-1)

AAR Notes from Student Air Mission Commander

Evident throughout the entire pre-mission planning, execution and debrief of Operation Wooden Horse, one critical task for all operations was minimizing risk. This was a high priority for our flight students. The planning process allowed us the vital experience of being "confronted with risk management decisions while conducting [battle-focused] training." We now understand how these methods of determining, acknowledging and mitigating risks will allow us to tailor future rehearsals and mission briefings to reflect the requirements and objectives of the mission, with special emphasis in these risk areas.

During our collective class rehearsal, conducted with a detailed "play-by-play" format, the goal was to present a hands-on visual to better inform the individuals participating in the mission. The intent was to isolate and highlight the risks associated with each portion, so as to bring these important considerations to the forefront of each student's mind as they saw the mission in the big picture.

Before leaving the rehearsal, the unit commander made it clear we would not continue the training mission if an unrehearsed contingency arose that would put us at risk with no added benefit and outweigh the quality of the training we would receive. End result? Each student headed out intellectually prepared for a realistic, complex training event, confident in risk mitigation and ecstatic for the chance to participate in an event that would likely appear in some form at their respective units. Furthermore, all student pilots were equipped with a toolkit consisting of AMPS expertise, CRM implementation, thorough kneeboard packets, detailed air mission briefs and multiship collective training – all of which were never possible before FS XXI.

During the execution of Operation Wooden Horse, our IPs and the commander continuously monitored our performance. The mission was tough and realistic, but reflected all the standards we had been taught. Operation Wooden Horse served as the perfect capstone to our FS XXI training. It was satisfying to note that the contingencies that did arise were easily dealt with due to the time and attention we'd devoted to ranking hazards based on their level of assessed risk and actively mitigating hazards during the planning and rehearsal process.

During our review of Operation Wooden Horse, it was hard to contain the excitement and feelings of accomplishment. But, even then, we pointed out more areas that could be improved on future Ranger missions. What was our goal? Had we accomplished it? Had we learned and become more competent in our craft? The answer is a resounding "yes!" Training like this capstone event is invaluable and much more than just helicopters and Ranger students. Our commander and IPs offered us the tools and expertise to increase the realism of combat training without increasing the risk. The result is a lower overall risk for FS XXI UH-60 aviators who enter their units better trained, more experienced and ready to lead by example and to set the standard for those in our field. «

> "The **MISSION** was **TOUGH** and **REALISTIC**, but **REFLECTED** all the **STANDARDS** we had been **TAUGHT.**"

WATCH YOUR STEP

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Every year, thousands of Americans are injured or killed in slip, trip and fall accidents. Many of these losses can be prevented with a little consideration of the types of hazards we face at work and home.

Slips, trips and falls are one of the major types of personnel injury accidents for both Soldiers and the civilian workforce. According to the National Center for Injury Prevention and Control, Centers for Disease Control and Consumer Product Safety Commission, falls are the leading cause of nonfatal unintentional injuries treated in hospital emergency rooms. Furthermore, the Occupational Safety and Health Administration (OSHA) reports slips, trips and falls account for 15 percent of all accidental deaths nationally and are second only to motor vehicle accidents as a cause of work-related fatalities. Poor housekeeping, inadequate maintenance, improper procedures and inattention all contribute to slips, trips and falls. Some Army examples of these types of accidents include:

- A Soldier suffered fatal injuries when he fell 8 to 10 feet from a front-end loader. The Soldier was attempting to climb from the loader onto a roof to provide realistic training.
- A civilian office worker slipped on a tile floor and fell. She injured her knee, requiring medical treatment, and lost one workday. A cleaning crew had just waxed the hallway floor and failed to post warning signs.
- A Soldier was standing in a chair with casters while taking down office decorations. The chair was a quick shortcut instead of going to supply for a step ladder. The Soldier fell and broke his wrist when the chair rolled from underneath him. The injury required surgery and physical therapy, and the Soldier was on restricted duty for several months to recover.
- A facility maintenance worker was climbing a wooden stepladder when a cracked rung broke under his weight. The worker fell, injuring his back and leg. He failed to inspect the ladder before using it.
- A Soldier was wearing shower shoes while walking down a flight of stairs. In a hurry, he slipped and fell, resulting in a broken arm and leg.

Do these accidents sound familiar? They should – injuries from slips, trips and falls are common. Listed below are some of the most frequent causes of these types of accidents.

Inattention. Distractions such as reading while walking or not paying attention to the walking or working surface can lead to a fall. Many fall victims fail to look for hazards directly in the path of travel, and most of these accidents can be avoided by paying attention. Adequate lighting should also be provided around doors and walkways to parking areas so hazards are more visible.

Slippery and uneven work surfaces. Slippery floors are often a result of inadequate housekeeping. Wax, water, spilled coffee, leaking oil from equipment or ice outside a building entrance can set the stage for a fall. Loose stair treads, broken floor tiles and other uneven work surfaces can trip the unwary. To help prevent some of these accidents, develop an ice removal plan before the start of winter and provide warning signs for wet floors. OSHA standards require that walking or working surfaces be maintained and kept in a clean and, to the greatest extent possible, dry condition to prevent tripping hazards. Aisles and passageways also must be kept clear and in good repair.

Proper footwear. Proper footwear can greatly reduce the potential for slips and falls. Traction is all about the contact between the walking surface and the sole of the boot or shoe. The slickness of soles and the types of heels need to be evaluated based on the work environment, tasks performed and walking surfaces. Choose footwear based on function, not fashion. In addition, investigate any accidents involving slips and falls to determine if the type of footwear contributed to the accident.

Tripping hazards. Most tripping hazards are related to housekeeping standards. Electrical cords across office aisles, water hoses across sidewalks and boxes of supplies in hallways are all tripping hazards that must be fixed immediately. Remember, it is easy to become complacent about tripping hazards you see every day.

Falls from elevations. To prevent falls from elevations, OSHA general industry standards require platforms and work surfaces 4 feet or more above the adjacent floor or ground be protected by standard guard railings. Use covers or guard rails to protect maintenance pits and other floor holes when not in use to prevent personnel from falling into them. Also, any work above 6 feet may require the use of fall-protection equipment.

Ladders. Chairs, furniture and milk crates are not substitutes for a ladder. Make sure the ladder is the correct length for the task. A ladder should extend 3 feet above the roof so you have handholds for getting on and off the ladder. Use a stepladder correctly and don't stand above the recommended safety limit. Portable ladders must be inspected, maintained and used properly to avoid serious injury from falls. Tag and remove damaged or unserviceable ladders from the work area to prevent their continued use. Failing to secure the ladder or extending beyond safe reach limits are common unsafe behaviors leading to accidents.

Injuries and deaths from slip, trip and fall accidents are preventable. By taking the time to identify the accident hazards in your work area, you can help ensure your next step isn't your last.

FYI

Beginning January, *Knowledge* will have a section dedicated to workplace safety. Called "At Work," the goal of the section is to keep readers informed about various hazards in the workplace and what they can do to mitigate and/or eliminate those hazards.

ARAP
ARMY READINESS ASSESSMENT PROGRAM

THE NEXT GENERATION

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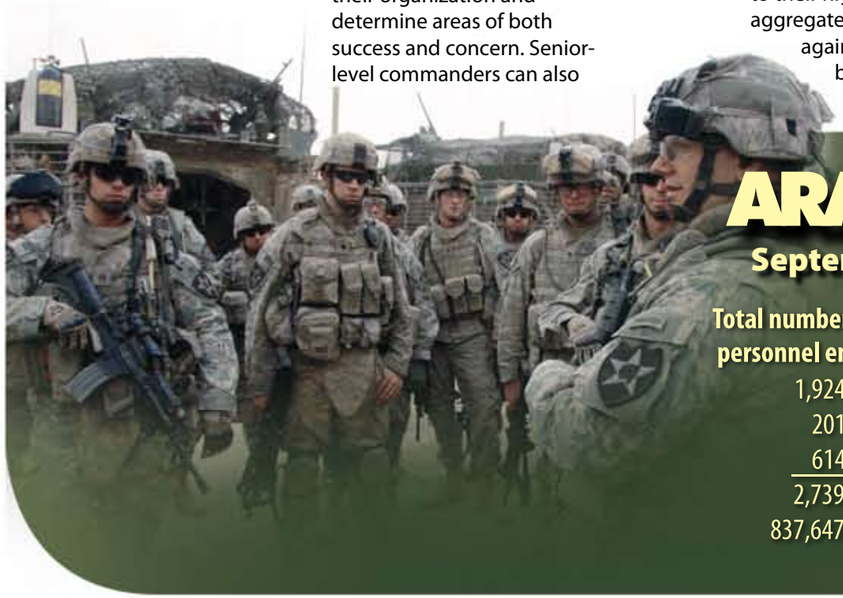
U.S. Army Combat Readiness/Safety Center
Fort Rucker, Ala.

Engaged Leaders are making a difference at every level. Now, with improvements to the Army Readiness Assessment Program (ARAP), Leaders have an even more powerful tool to measure the safety culture and climate inside an organization.

During the last two years, more than 2,000 battalion-level units and about 448,000 Soldiers and Army civilians have participated in ARAP and received immediate feedback from the ARAP team analyzing the results of collected unit responses. In March, the U.S. Army Combat Readiness/Safety Center (USACRC) released an updated version of ARAP to provide users increased navigation capability. In addition, new functions have been added to allow units in the field to register to participate in ARAP and also allow them to see a demonstration of the program.

Along with these upgraded features, ARAP (Next Gen) now provides brigade-level and above commanders with useful information through the use of a confidential higher-command access code. This new capability will assist in managing unit participation, but, more importantly, it will provide 24/7 access to charts and graphs that reflect the safety climate and culture across an organization.

Within ARAP (Next Gen), commanders have the capability of reviewing aggregate data for their commands. This access will not compromise the confidentiality and anonymity provided to battalion-level commanders and Soldiers that complete the ARAP process. Additionally, they are able to determine when and which of their battalions are registered and have received a confidential debrief from the USACRC. Battalion commanders routinely will brief their higher chain of command on key results, their intended courses of action and where they need assistance. Battalion commanders then execute their plan and – 12 to 13 months later, about mid-tour – check unit progress by comparing the results of the first and second assessments.

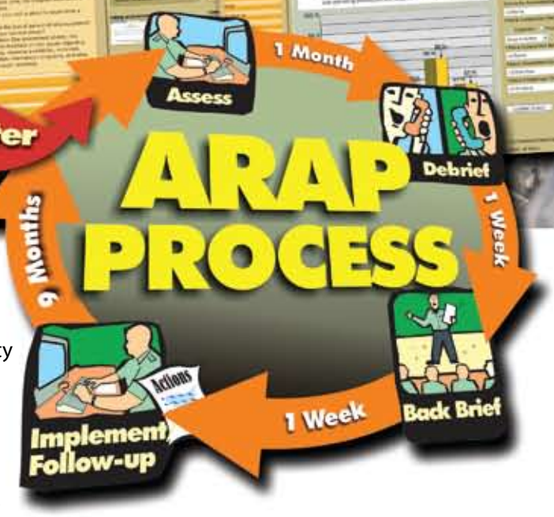


By using access codes, higher commands are able to break down survey responses, targeting specific calendar or fiscal years, while keeping those responses anonymous. This capability is available to commanders at brigade level and above, commensurate with their level of command, to monitor progress within their organization and determine areas of both success and concern. Senior-level commanders can also receive a personal debrief and program navigation assistance by contacting a member of the ARAP team.

The information provided with this capability only identifies battalions having participated in ARAP and supplies an aggregate view of the command. As new units continue to enroll, they will automatically be added to their higher command's aggregate data. So, once again, you will always be receiving the latest data for your organization.

Due to the confidentiality of information obtained from ARAP (Next Gen), the USACRC is not at liberty to release this information (access codes) to anyone other than the commander without being provided written permission (including e-mail). Acceptable command authority can be from any of the following members of the command group with the appropriate phone number(s): commander, deputy commander, chief of staff or executive officer. In an effort to maintain confidentiality, access codes will not be released to anyone telephonically.

Commanders or their designated representatives may request their access code for brigade or equivalent levels and higher by contacting ARAP team members at (334) 255-9362/9577/9394/2781, DSN 558-XXXX or by e-mail at arap@conus.army.mil.



ARAP STATISTICS
September 2006-September 2008

Total number of units and personnel enrolled in ARAP
1,924 AD
201 NG
614 USAR
2,739 Units
837,647 Personnel

Total number of units and personnel complete/debriefed
2,054 Units
448,350 Personnel Debriefed

ARAP Quartile	(Mean Score) Range	Class A Accidents
1st	(4.02) 3.86 - 4.74	52
2nd	(3.78) 3.71 - 3.86	71
3rd	(3.64) 3.57 - 3.71	93
4th	(3.43) 2.68 - 3.57	101

I Made it Home – Saved by my PPE

SGT. MAJ. CORDELL ACKLEY
3rd Special Forces Group (Airborne)
Fort Bragg, N.C.

I was riding home through Spring Lake, N.C., on my motorcycle after work one day. Once I got through the heavier stop-and-go traffic, I started looking for a place to pull off the road and make a phone call. I spotted a good location and turned on my right turn signal. I checked my mirror and noticed a large sport utility vehicle (SUV) approaching from about 100 to 130 feet behind me.

Although I was in the right lane and signaling, before I could turn, the SUV rear-ended me doing about 45 mph. The impact drove me and the bike some 40 feet across the driveway and against the curb. As the bike slammed into the curb, I flew over the handlebars and landed on my right side in the road. The bike was still running, even though the impact had completely torn off the swing arm assembly and rear tire.

A lady who witnessed the crash was sure I was dead and made her son stay in her car as she ran over to me. It surprised her when I started trying to crawl out of the road. She told me the SUV driver was looking down just before the impact and never slowed before hitting me. (It turned out the driver, a young second lieutenant, was searching for something he'd dropped on the floorboard.)

It's simply amazing the things that go through your mind after a bad crash. I asked the lady to please turn my bike off because I didn't want to waste gas. Thankfully, someone else who'd come to help me had already done that after seeing the headlight was still on. I asked them to remove the key and give it to me so the battery wouldn't go dead and no one could steal the bike. I then asked for someone to take pictures since this was going to be one heck of a "There I was" story and a good picture is worth a thousand words.

After I had the unimportant things taken care of, I called my wife to let her know I was going to be a little late getting home. I asked her to bring me supper and said I would meet her at the hospital. Shortly afterward, Spring Lake emergency services pulled up. They immediately immobilized my spine and strapped me onto a stretcher and transported me to Fort Bragg's Womack Army Medical Center. There, I was treated for lower back pain, scrapes on my chest and midsection and bruises on my right side and both legs. Fortunately, I didn't have any broken bones and was not too much worse for wear. I was released for duty later that evening.

I have seen many riders going for the "cool" look, riding shirtless while wearing a novelty helmet rather than good personal protective equipment (PPE) and a Department of Transportation (DOT)-approved helmet. You have to wonder what – or if – they're thinking.

I am lucky to be alive today. The only reason I am here writing this article is because of my PPE.

HELMET STYLES MATTER

JACK GRIFFIN
Fort Hood, Texas

Editor's note: This e-mail came just in time to be included in our November magazine and provides insight into why all personal protective equipment choices – particularly helmets – are not equal. Did you know Knowledge *is also your forum to discuss aviation, ground and off-duty safety? If you have something to share or want to respond to an article you've read in this magazine, visit https://crc.army.mil/knowledge/tell_story.html.*

I have been a motorcyclist for more than 30 years and a paramedic for over 22 years. As a paramedic, I have too often seen the tragic consequences of motorcycle accidents. These accidents leave some riders dead and others with terrible head injuries. The most significant protection for the rider is the helmet.

I work as a Department of Defense paramedic on Fort Hood, Texas, and have seen too many Soldiers killed or seriously injured on motorcycles. Unfortunately, these incidents are, in my opinion, largely due to the increasing popularity of motorcycles. In my experiences with the injuries being suffered, there is a common problem. That problem is inadequate head protection due to poorly designed helmets. The No. 1 helmet problem is the half helmet or "half shell" helmet. This helmet is poorly suited to protect a rider in the event of an accident. In some cases, the half shell even comes off during impact, allowing for more injuries or deaths to occur. I have personally seen this type of situation. An article in Wikipedia noted, "Half helmets are also prone to shifting and sometimes coming off of the rider's head during an accident." This helmet is currently allowed for service members to use.

If someone wants to make significant reductions in deaths or severe head injuries to our Soldiers, a simple way would be to stop the use of these "widow makers" and require three-quarter or full-face helmets. With new technologies, full-face helmets are lighter, cooler, more ventilated and are proving to be life saving. They give some cervical spine, facial and chin protection to the rider. Wikipedia also noted, "Studies have shown that full-face helmets offer the most protection to motorcycle riders because 35 percent of all crashes showed major impact on the chin-bar area."[1] In closing, I hope you can see I am trying to do the best for our Soldiers, their Families and the military. I pray you will join me in the fight to save lives and provide the best we can offer.

[1] Dietmar Otte, Hannover Medical University, Dept. of Medical Research, Germany.

IT COULD HAPPEN TO YOU

CHIEF WARRANT OFFICER 4 DANIEL CROSS
U.S. Army Combat Readiness/Safety Center
Fort Rucker, Ala.

Like most Soldiers, I've read the articles and seen the posters that say, "Seat Belts Save Lives." But I never really thought I would be involved in an accident. That all changed in May 2003 when I was in a life-threatening, two-vehicle collision in Kuwait. I now know firsthand the value of wearing a seat belt.

I was stationed at Camp Udari, Kuwait. Though most of our battalion had moved forward and was in Baghdad, our company remained at Udari with two important missions: provide aviation intermediate maintenance support and find, requisition and push forward desperately needed parts.

One morning, I was riding in a nontactical vehicle with a contractor. We were heading from Camp Udari to Camp Doha, and I was riding in the front passenger seat. One of the noncommissioned officers (NCOs) from my company was also riding with us because he was going on emergency leave and needed to get to Camp Doha. He was sitting in the backseat, behind the driver. Fortunately, all three of us were wearing our seat belts.

The roads from Udari to Doha were dangerous and highly traveled. In fact, we had traveled this route many times and were familiar with it. As we entered Kuwait City, the road became a four-lane divided highway. About three to five miles from the front gate to Camp Doha, we approached a three-way intersection. The highway we were on went straight through the intersection. Another four-lane road came into the intersection from the right. There was a stop light at the intersection, and as we approached it, the light was red. There were several commercial buses filled with Soldiers in the left lane stopped at the light and no traffic in the right lane.

> "UNFORTUNATELY, there is ALWAYS SOMEONE who THINKS HE or SHE can BEAT the LIGHT."

The contractor driving our vehicle merged into the right lane and began to slow down as we approached the intersection. The light turned green and the contractor began to accelerate as we started to pass the buses in the left lane. Little did we know, because the buses were blocking our vision of the intersection, a civilian tractor-trailer in the oncoming lane had run a red light and was making a left turn in front of us. As we entered the intersection, we saw the vehicle but had no time to react. We struck the side of the tractor-trailer at the rear dual tires. I would estimate we were traveling about 40 mph at the time of impact and hit extremely hard. I don't remember the air bags deploying, but they did. I do remember moving the air bag out of the way and noticing the vehicle was now on fire. Apparently, the impact had broken the fuel line and something had ignited it.

The contractor had injured his ankle but, otherwise, said he felt OK. My body was hurting from the seat belt, but, as far as I could tell, I was fine. I jumped out to help the NCO in the backseat. He had bitten his tongue on impact and had the wind knocked out of him. The impact was hard enough that the body of the vehicle had buckled and the doors on the left side would not open. The NCO was able to slide across the seat and exit the vehicle from the right side.

After getting him clear of the vehicle, I went back to help the driver. By this time, there were Soldiers coming from the buses that were next to us at the intersection. They were able to help carry the contractor away from the burning vehicle. Within a few minutes, the vehicle was engulfed in flames. The only things we were able to save were the items we were wearing. Shortly thereafter, an Army ambulance arrived at the scene to take us to the hospital. The contractor was admitted with a broken ankle, while the NCO and I were released after being examined.

After this accident, two things became very clear to me. First, seat belts saved our lives and, second, defensive driving could have prevented this crash. As we approached the intersection in the right lane, we could not see because the buses to our left blocked our view. In our case, we had the green light. Unfortunately, there is always someone who thinks he or she can beat the light. That may have been the attitude of the tractor-trailer driver. If we had driven more defensively, we would have slowed down so we could see past the buses before entering the intersection. We may have been able to stop and avoid the accident.

The one thing we did do right that day was buckle up. Remember to always wear your seat belt whenever you're in a vehicle. You never know when it's going to save your life.

LOST

AVIATION

OH-58

CLASS A D(R) Model

■ The aircrew experienced brownout conditions during landing, resulting in the aircraft impacting the ground. The aircraft was destroyed.

DO YOU BRIEF "GO-AROUNDS" DURING PRE-MISSION BRIEFS? THERE'S NOTHING WRONG WITH EXECUTING A GO-AROUND!

CLASS C

■ The aircraft's main rotor blade made contact with the tail boom during completion of a low-level autorotation maneuver.

■ The aircraft engine power turbine spiked to 124 percent for five seconds during manual throttle operations.

TH-67

CLASS C A Model

■ The aircraft experienced a turbine outlet temperature (TOT) spike of 927 C during student changeout.

■ Preflight inspection of the aircraft revealed spike knock damage associated with prior flight.

UH-60

CLASS D L Model

■ While on approach to the airfield, the aircraft hit a bird. The aircraft was approximately 150 feet above ground level (AGL) when a small flock of birds flew up out of the trees on the south end of the runway. The pilot in command (PC) attempted to maneuver away from the birds, but was unsuccessful. The aircraft landed and ground taxied to parking, where it was shut down for a visual inspection.

RC-12

CLASS D K Model

■ During taxi, the crew smelled a burning odor in the cockpit. No fire light had illuminated; however, the crew shut down the aircraft and egressed. Smoke was coming from the No. 2 engine cowling. The PC entered the aircraft and discharged the engine fire extinguisher. He then opened the cowling and discharged a portable halon fire extinguisher directly into the engine compartment. The air conditioner condenser motor seized, catching the drive belt and pulley on fire. The crew extinguished the fire before the fire department arrived. The aircraft was towed back to the hangar and maintenance replaced the air conditioner condenser motor, drive belt and small engine cowling.

UAS

MQ-1C

CLASS A

■ The UAS aerial vehicle operator (AVO) initiated a rapid descent, during which time the nose of the UAS pitched down. The UAS went into an uncontrolled spiral to the ground and was destroyed upon impact. The system and payload were recovered.

MQ-5A

CLASS A

■ The UAS experienced an aft engine failure at 8,000 feet AGL and lost altitude. The recovery chute deployed; however, the UAS crashed.

RQ-1L

CLASS A

■ The UAS experienced a hard landing with damage to the right landing gear and payload. The system was recovered.

RQ-7B

CLASS B

■ The UAS drifted off the runway following touchdown.

■ The UAS experienced engine RPM fluctuations and subsequent decline. The recovery chute deployed; however, the system was damaged upon recovery.

GROUND

ACV

CLASS A

■ An Armored Security Vehicle carrying ammunition sustained major damage when a fire started onboard.

AMV

CLASS A

■ A Soldier was killed in an M1075 Palletized Loading System (PLS) rollover. The Soldier was driving the PLS on a mountain road when the vehicle left the road during a turn and rolled over. Another Soldier received non-life-threatening injuries. Both Soldiers were wearing helmets and required personal protective equipment (PPE).

HOW FAST IS TOO FAST? DO YOUR SOLDIERS UNDERSTAND THE CONSEQUENCES?

ARMY AIRCRAFT LOSSES

Fiscal 2002 to Present

through September 30, 2008

Hostile/ Non-hostile

AH-64A/D	11/51
U/MH-60A/L	9/31
C/MH-47	8/19
OH-58D	11/28
TOTAL	39/129

ARMY GROUND LOSSES

Fiscal 2008

through September 30, 2008

Class A Fatalities

AMV	22/19
ACV	8/7
PERSONNEL INJURY includes weapon-handling accidents	47/40
FIRE/ EXPLOSION	4/4
PROPERTY DAMAGE	5/0
TOTAL	86/70

A Soldier was fatally injured when he was thrown from the cupola of an M1114 during a convoy movement. The vehicle collided with an Iraqi Army HMMWV at a four-way intersection.

Personnel Injury

CLASS A

A Soldier suffered fatal injuries during a recreational parachute accident. The Soldier collided with a civilian parachutist about 50 feet above the ground. The civilian died at the scene. The Soldier died the following day at a local medical center.

A Soldier suffered permanent paralysis when he was struck in the neck by a round from an M9 weapon. The Soldier was helping another Soldier clear/load the weapon in the barracks when a round discharged.

DRIVING

POV

CLASS A

A Soldier was killed when his van struck a tractor-trailer that failed to yield right of way at a crossover.

A Soldier fell out the passenger-side door of a pickup truck, struck his head and died from the resulting injuries. The Soldier was on midtour leave from Operation Iraqi Freedom.

A Soldier was traveling with his wife and two children when they were rear-ended by a tailgating driver. The collision pushed the Soldier's vehicle into a tractor-trailer and then into the path of a sanitation truck. The Soldier, his wife and children were all fatally injured.

A Soldier was driving his van when he rear-ended a cement truck that had slowed for traffic. The Soldier was taken to a local medical center, where he died.

DO YOUR SOLDIERS UNDERSTAND THEY NEED TO LOOK AS FAR AHEAD AS POSSIBLE ON THE ROAD TO SPOT POTENTIAL HAZARDS?

A Soldier was driving his sport utility vehicle to physical training formation when the vehicle crossed the road, entered a culvert and overturned. The Soldier was trapped inside and suffered fatal injuries. Seat belt use was not reported.

POV DRIVING LOSSES Fiscal 2008

through September 30, 2008 Class A accidents/Soldiers killed

CARS	46/46
SUV/JEEPS	10/12
TRUCKS	13/10
MOTORCYCLES	52/50
OTHER*	8/8

*Includes: vans and ATVs

126 TOTAL DEATHS

Fiscal 2007: 110 3 year average: 125

WHEN A "C" IS NOT A PASSING GRADE!

BOB VAN ELSBERG
U.S. Army Combat Readiness/Safety Center
Fort Rucker, Ala.

In the world of accident reporting, Class A fatalities get the lion's share of the attention. But that doesn't mean there aren't lessons to be learned from the Class Cs.

Ever get so excited about a new toy that you start playing with it before you read the instructions? Imagine the toy being a new Honda Shadow 750 motorcycle. Imagine a "newbie" rider opting for the "I-don't-need-no-stinking-training" attitude before playing with one.

As our Soldier was soon to discover, the "learn-as-you-go" approach does have its pitfalls. While the levers for the front brake and clutch are on opposite sides of the handlebars, they do bear a remarkable resemblance. And there is where our Soldier got into trouble. While practicing stopping, he got his levers confused. To quote the report, "The Soldier does not remember if he pulled the clutch in and shifted into second gear or tried to apply the brake."

If the Soldier is a bit foggy on his recollections, history accurately records what followed. Rather than braking, the Honda – with its confused rider onboard – accelerated and nailed a 6-foot-high fence.

This was not what the rider had intended, and you're probably wondering what happened next. Well, there is some good news and some bad news to pass along.

The good news is our Soldier was wearing a helmet, so his "nugget" survived to absorb the lesson. The bad news is his face shield broke and carved a divot into his forehead. He also broke his wrist and one of his fingers – injuries likely to keep him from grabbing any motorcycle levers until he gets the proper training.

The report observed that (over)confidence does not overrule a rider's requirement to get Motorcycle Safety Foundation training and be licensed. Therefore, while this Soldier's Class C was distinctly better than a Class A, it definitely did not reflect a passing grade!

A Soldier died when he fell asleep while driving a six-wheeled moving truck, went off the road and up the side of an overpass embankment and struck a bridge. The Soldier was on permanent change of station leave. The Soldier was wearing his seat belt and had conducted a risk assessment using the Travel Risk Planning System, which indicated his risk was LOW.

HAVE YOU EXPLAINED TO YOUR SOLDIERS THAT DRIVING FATIGUED CAN BE AS DANGEROUS AS DRIVING UNDER THE INFLUENCE?

POM

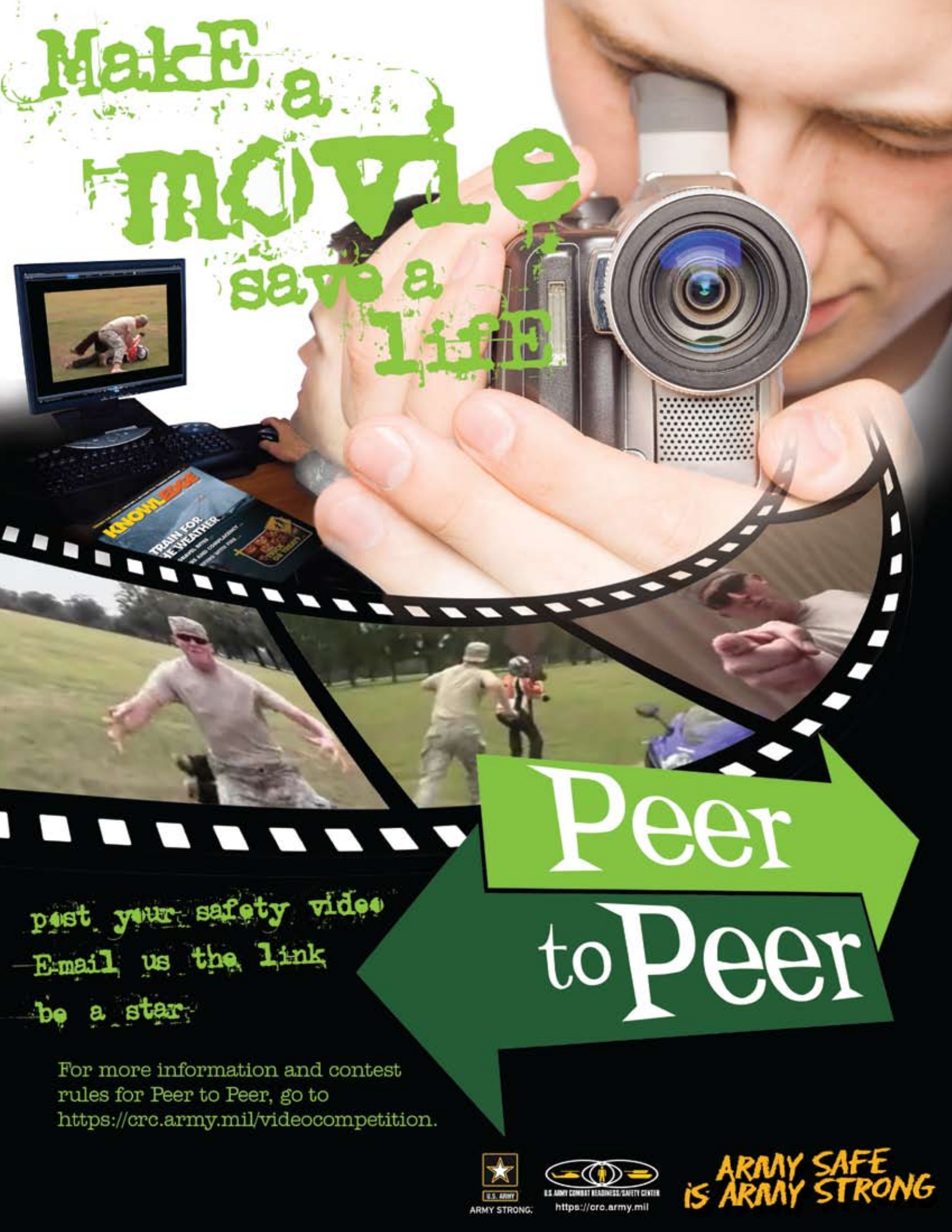
CLASS A

A Soldier was operating his motorcycle when he collided with a vehicle making a U-turn at an intersection. The Soldier was transported for treatment, but died at a local medical facility. The Soldier was wearing his helmet and full PPE.

A Soldier was operating his motorcycle when he left the roadway due to undetermined reasons, crashed and was killed. The Soldier was wearing his helmet and PPE.

A Soldier was operating his motorcycle when he contacted the curb while negotiating a curve. The Soldier was thrown from the bike and pronounced dead at the scene. The Soldier was not wearing a helmet or PPE.

Editor's note: Information published in the accident briefs section is based on preliminary loss reports submitted by units and is subject to change. For more information on selected accident briefs, e-mail safe.knowledge@conus.army.mil.


Make a movie save a life
TRAIN FOR THE WEATHER
Peer to Peer
post your safety video
E-mail us the link
be a star
For more information and contest rules for Peer to Peer, go to https://crc.army.mil/videocompetition.
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Don't be a baby.
Take the keys and be the designated driver.
DON'T HESITATE
DESIGNATE!
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safety always in season

safety tips

- Always use a safety harness while climbing up or down a tree and while in the treestand.
- Always use a haul line to raise and lower gear.
- Only use a treestand approved by the Treestand Manufacturer's Association.
- Study manufacturer's recommendations before using any equipment.
- Avoid hunting alone, tell someone at home where you will be and carry a cell phone.
- Inspect equipment before every trip.

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ARMY SAFE IS ARMY STRONG

Posthal photo provided by N.C. Wildlife Resources Commission

THE KEY TO SUCCESS: HOW TO SURVIVE 15 MONTHS IN IRAQ p. 8

KNOWLEDGE

VOL 2 DECEMBER 2008

OFFICIAL SAFETY MAGAZINE OF THE U.S. ARMY

WHO IS LOOKING OUT FOR YOU? p. 4

- NEW APPROVED-GEAR LOGO p. 18
- UNAUTHORIZED ALSE MODS p. 20
- WINTER RIDING TIPS p. 26

+

THE DANGERS OF HUFFING p. 28

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KNOWLEDGE
OFFICIAL SAFETY MAGAZINE OF THE U.S. ARMY

contents

U.S. ARMY COMBAT READINESS/SAFETY CENTER
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Mission statement: USACRC supports our Army by collecting, storing, analyzing, and disseminating actionable information to assist Leaders, Soldiers, Families, and Civilians in preserving/protecting our Army's combat resources.

We welcome your feedback. Please e-mail comments to **safe.knowledge@conus.army.mil**.

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> "It takes **MORE** than **SATURATION** and **REPETITION** to reach Soldiers. NCOs answer the **'WHY QUESTIONS.'** Their **WISDOM** and **EXPERIENCE** help Soldiers understand **HOW** to think, not just **WHAT** to think."

THE YEAR OF THE NONCOMMISSIONED OFFICER

During the recent Association of the United States Army annual meeting, the Secretary of the Army declared 2009 as "The Year of the Noncommissioned Officer" as a way of recognizing the value of our enlisted Leaders at all levels of command. Army Secretary Pete Geren said of NCOs, "They know their mission, they know their equipment, but most importantly, they know their Soldiers."

I couldn't agree more. The NCO Corps, the backbone of our force, is vital to the development of both Soldiers and Leaders alike. Their considerable influence resonates throughout every echelon of our Army. NCOs enforce standards and ensure discipline. They bear the brunt of responsibility in molding the Army's next generation of Soldiers. Talk to almost any Soldier and he or she will have at least one tale of the time an NCO's gentle correction kept them from harm or prevented them from doing something stupid.

Perhaps nowhere is the NCO's influence more critical than in the business of keeping Soldiers safe. When it comes to safety, NCOs serve as the conduit between Leader and Soldier. They transmit information both up and down the chain of command. The Army's Fiscal 2009 Safety and Occupational Health Objectives direct Leaders to focus on the Army's biggest safety challenge – off-duty accidents – and calls for innovative approaches to addressing off-duty risky behavior.

By reviewing the objectives, you can see how NCO efforts are central to fulfilling the Army's safety goals.

Safety Climate and Culture. NCOs can tell you if your programs are effectively addressing the climate of your organization. They are essential to successfully communicating your message. It takes more than saturation and repetition to reach Soldiers. NCOs answer the "why questions." Their wisdom and experience help Soldiers understand how to think, not just what to think.

Off-Duty Loss Reduction. The Army's goal is to reduce accidental loss from fiscal 2007 results by 20 percent in fiscal 2009. Every command is unique and there is no universal solution set to reduce accidental losses. There is, however, a common resource available Army-wide – Leaders. NCOs, with their firsthand knowledge of Soldier activities, personal habits and behaviors, are perfectly positioned to apply positive influence when and where it's most needed – before an accident occurs.

Sustainment. The challenge is to sustain the over-40-percent reduction in on-duty accidents from fiscal 2006 numbers while shifting the focus to off-duty reduction. For many Soldiers, composite risk management (CRM) has become so ingrained in their on-duty planning and mission execution that it has become intuitive. For younger Soldiers, it remains a concept they are learning even in basic training. NCOs continually foster the CRM mindset, helping Soldiers to incorporate it into every aspect of their lives, both on and off duty. They also provide continuity and support to successful safety programs.

Best Practices. The sharing of Best Practices is an effective prevention tool. The NCO "network" does a great job of spreading knowledge across our force, and this same informal network should be leveraged for safety. NCOs should take full advantage of online safety forums to share successful programs, both on and off duty. Not only are NCOs' collective experiences and lessons learned stored centrally, Soldiers can tap into that well of knowledge 24/7 by simply posting a question on the Battle Command Knowledge System forum.

NCOs groom our young men and women. And while safety is vitally important, it is only one of the many responsibilities NCOs willingly undertake to ensure the welfare of our Soldiers. The NCO example of discipline, professionalism and accountability is clearly outlined in the NCO creed, teaches young Soldiers a myriad of qualities that will positively impact every facet of their Army career. These same young Soldiers will, in turn, become our newest Army Leaders, perpetuating the tradition of excellence instilled in them by the members of the Army's NCO Corps.

As NCOs, you know there are no secrets to safety success. It is the result of preparation and CRM integration into all phases of operations and learning from the successes and failures of others. As our Army strives to reduce accidental losses in fiscal 2009, we can only achieve this goal with the support and dedication of our NCO Corps, that first-line Leader. The USACRC stands ready to strengthen that "backbone" with tools and subject matter experts to complete your mission safely.

Finally, as each of us prepares for the upcoming holiday season, remember this is historically one of the most dangerous times of the year. Off-duty activities that include privately owned vehicle use for extended travel, holiday celebrations and other related events each pose their own unique set of hazards. I ask that every Leader, Soldier, civilian and Family member make an effort through direct personal engagement to reduce accident risks and be a positive influence on others in this important time of the year.

Have a Happy and Safe Holiday season.

Army Safe is Army Strong!

William T. Wolf
Brigadier General, USA
Commanding

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

WHO IS LOOKING OUT FOR YOU?

PERRY WILDS
Driving Task Force
U.S. Army Combat Readiness/Safety Center
Fort Rucker, Ala.

I joined the Army when I was 17, so I was near the end of my first enlistment before I turned 21 and could legally drink. As a young enlisted Soldier, I lived in the barracks – not a place you want to hold a party. So my plan was simple; I'd ride my motorcycle over to my civilian friend's house and go out to party from there. Not much of a plan, but it was a start.

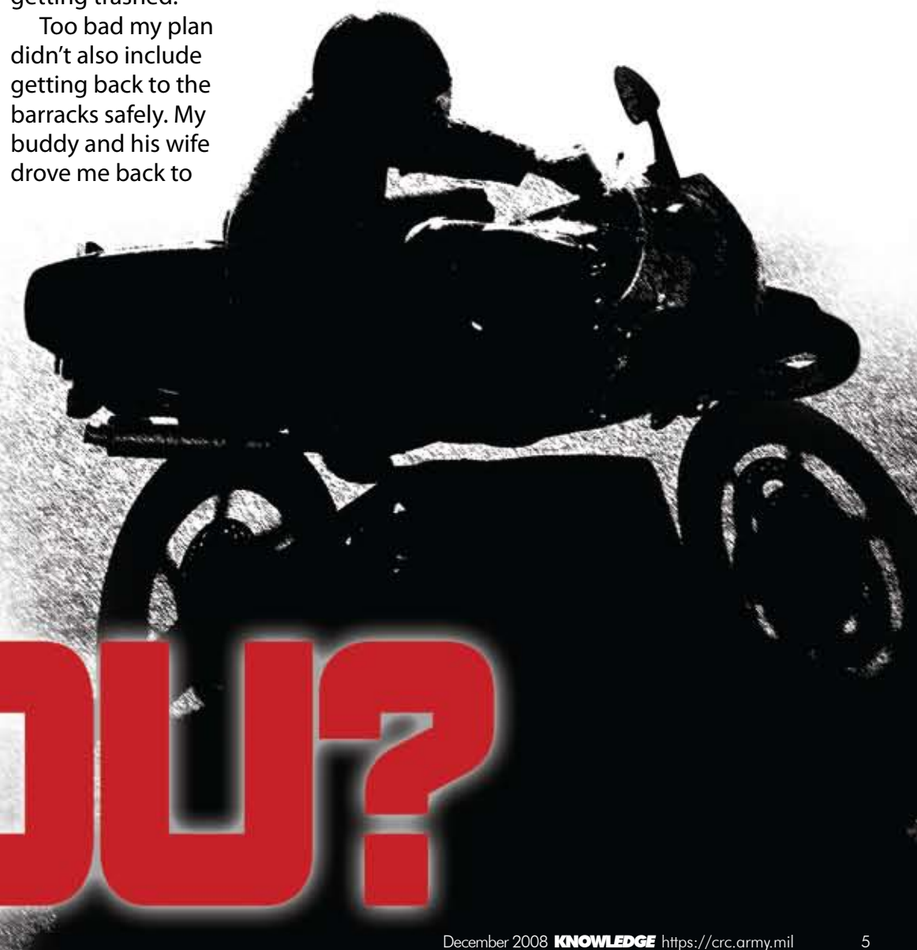
I rode my Honda 350 Enduro to my buddy's house. I wasn't even inside the door before I had my first beer of the night. While we sat around discussing the evening's plans, I drank three beers – and we hadn't even left for the bar yet!

My friend and his wife took me to the bar in their car. I'd been there before using a fake ID, so everyone knew me. I don't remember buying a single drink that night. It seemed like every time I turned around, someone else wanted to do a shot with me. I remember thinking toward the end of the night that if all my friends had come at the same time, I wouldn't be so trashed. But, hey, these were my friends and they wanted to help me celebrate.

We partied till the bar closed and, of course, drank our last shot as last call was announced. I'm not sure how much I drank that night, but I do remember hoping the alcohol wouldn't kill me. It had been a heck of a party and I'd succeeded at my plan of getting trashed.

Too bad my plan didn't also include getting back to the barracks safely. My buddy and his wife drove me back to their place and then we said our goodbyes. I got on my motorcycle and prepared to ride back to the barracks. The only problem was my motorcycle died as soon as I started it and, try as I might, I couldn't get it restarted. My buddy came out and started my motorcycle for me. I remember him saying something about me being an idiot for forgetting to turn on the fuel.

We laughed and I got on my bike. I sped to the end of his street, where I had to make a left turn. As the



streetlight got closer, I remember thinking, "I should be doing something." Then it hit me – "Oh, yeah, hit the brakes!" Just as I grabbed the brakes, I looked up and saw the front tire hit the curb.

The next thing I noticed was there were a lot of stars that night. I remember that because I was lying on my back in the street looking up at them. I looked around and saw my motorcycle lying on its side with the handlebars bent 90 degrees from where they were supposed to be. My bike was leaking fuel and the shift lever was broken off. Beyond that, I'd broken my helmet visor and was bleeding from my arm, leg and hip.

So, what does a guy do when he is so drunk he rides his motorcycle into an immovable object? Call for help? Maybe get a taxi? Nope. I just picked up my bike, bent my handlebars back as best I could and rode home in second gear because I couldn't shift.

I don't remember how I got back to the barracks, but I clearly remember the next morning. When I rolled over in bed, pain shot through my semi-sober body. My sheets were bloody, but they weren't as bloody as my clothes, which I was still wearing from the night before.

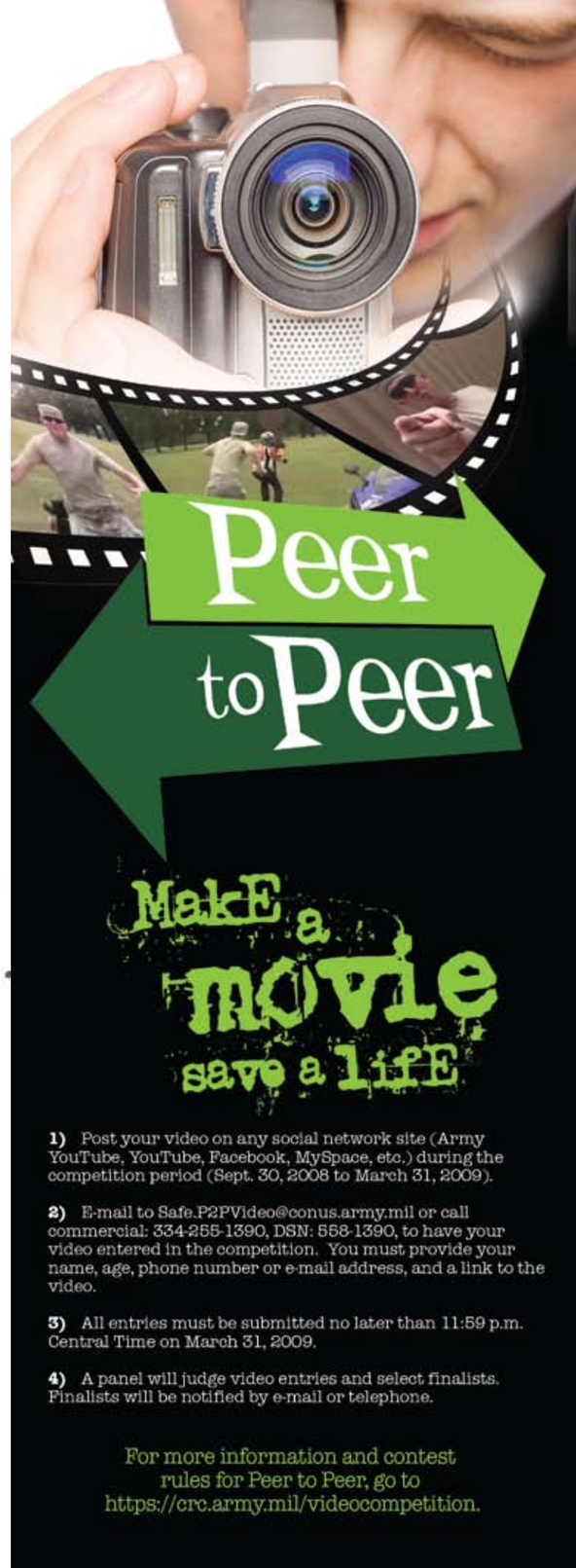
Fortunately, I lived through this experience so I could later absorb some lessons learned. We have all heard the warning to not drink and drive – but that requires having a plan so you don't have to ride or drive after drinking. Sure, I'd planned for my party, but what about afterward? I could have planned to stay with any of my friends, but I never asked. Or, as an alternative, I could have taken a taxi or a bus home. However, I wasn't looking out for myself.

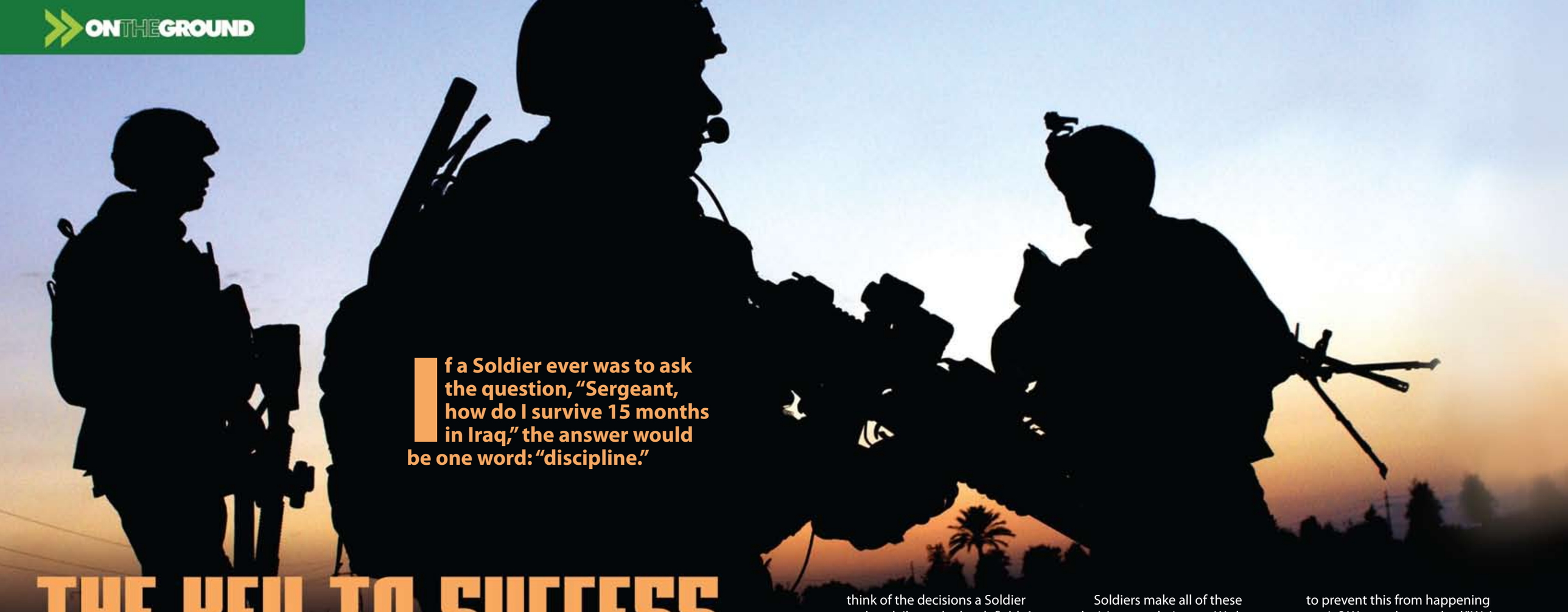
Unfortunately, neither was my buddy. If he had been, why would he have started my bike when I was too drunk to start it myself or allowed me to ride home drunk? A real friend would have done everything he could to not let me ride drunk.

The takeaways from this are obvious. First, if you're planning to drink, then plan for what you're going to do afterward. Stay with friends, have a designated driver or take a taxi. Don't wait until you're cross-eyed drunk to come up with a plan.

Second, ask yourself who is really looking out for you. When it comes to partying, there are "drinking buddies" and then there are real friends. You can tell the difference because real friends won't send you off drunk to die on the highway. When you make your plans for the party, make sure you plan to have your real friends looking out for you. It'll beat waking up the next day a bloody mess – or not waking up at all.«

> "When it comes to **PARTYING**, there are **"DRINKING BUDDIES"** and then there are **REAL FRIENDS.** You can tell the **DIFFERENCE** because **REAL FRIENDS WON'T** send you off **DRUNK** to **DIE** on the **HIGHWAY.**"





THE KEY TO SUCCESS

COMMAND SGT. MAJ. JOHN GIOIA
4th Infantry Division (M)
Camp Liberty, Iraq

If a Soldier ever was to ask the question, "Sergeant, how do I survive 15 months in Iraq," the answer would be one word: "discipline."

Discipline is the cornerstone upon which our Army was built. All Soldiers, for the most part, understand what the standards are, but some do not possess the discipline to fulfill their obligation in achieving the standard. Whether we are talking about the discipline to wear the uniform correctly – both inside the wire, as well as out – or the discipline to do the hard right over the easy wrong, it's all about personal choice.

While out on battlefield circulations, you will find it is very rare that a Soldier does not fully understand the standards. In fact, when I make an on-the-spot correction, more often than not they will tell me, "Sergeant major, I know I am wrong." What it really boils down to is the Soldier does not possess the discipline to meet that standard.

What I really have an issue with is the noncommissioned officer (NCO) who doesn't enforce the standard. NCOs don't get an option to say, "Well, I'm going to take a break today and not make the correction," and then decide to start enforcing the standard the next day. NCOs must always enforce the standard. Soldiers will meet the standards only when sergeants enforce them. It takes moral courage to walk up to someone who is wrong and say, "Soldier, fix it." And that is the job of a Leader, not a follower.

Having the pride and character to be disciplined, in the end, decides survival. Now, don't get me wrong, the enemy gets a vote; but think of the decisions a Soldier makes daily on the battlefield. A Soldier decides his attitude for the day, how he wears his uniform, how he respects Leaders, how he treats the opposite sex and, in the end, how he conducts himself ethically and morally.

In dealing with an escalation of force, a Soldier decides to shoot or not to shoot. In dealing with his individual force protection, a Soldier decides whether he is going to wear his proper kit – complete with gloves and eye protection. In dealing with his individual weapon, a Soldier decides whether he is going to be careful or negligent. In dealing with safety, a Soldier decides whether to take a shortcut. In this environment, shortcuts can be deadly.

Soldiers make all of these decisions on their own. We know that a Leader is responsible for everything his Soldiers do – or fail to do. Leaders are great at enforcing standards. Some would argue that a Leader can make a Soldier disciplined. I submit that is an accurate statement. You have to admit it sure would be great if every Soldier practiced good Army discipline. Instead, there are some who like to take shortcuts or try to manipulate standards to benefit themselves.

As for enforcing standards, it doesn't matter what standard we're talking about because a standard is, after all, a standard. It's set for a reason – because somebody before us thought about an issue and said, "You know what we need here to prevent this from happening again? We need a standard." We've already learned the hard way once. Why should we have to learn it again and again and again, especially if it comes at the cost of a Soldier's life? That's what makes our Army great. Think about it. There's a standard for everything we do; we just have to have the discipline to meet those standards.

So, how do you survive 15 months in Iraq? The answer is simple. You do what's right – morally and ethically – every day. You possess the moral courage to be disciplined. You do what is right when no one is looking – every day for 15 straight months. You do not succumb to taking shortcuts that may get you or your battle buddies wounded or killed.

DES OBSERVATIONS *FROM THE FIELD*

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A team of personnel from the U.S. Army Aviation Center of Excellence Directorate of Evaluation and Standardization (DES), supported by the U.S. Army Combat Readiness/ Safety Center, recently returned from Iraq. They were heavily engaged in conducting assistance visits with multiple aviation brigades and this article provides an update to the field on their findings.

The unique mission of DES is evaluating every aviation unit in the Army. This gives DES the opportunity to not only affect unit standardization programs, but also gather valuable observations, insights and lessons (OIL). During our most recent visit to the field, we gathered many OILs; however, in an effort to better inform our force and prevent future accidents, this article conveys only four observations – two positive and two negative.

Positive Observations

Environmental training. Most units deploying to Iraq are still conducting environmental training in Kuwait as part of reception, staging, onward movement and integration. While this remains important, there seems to be a couple of beliefs in the field that units in theater are taking off and landing to only hardstands, and that environmental training wastes precious blade hours and damages aircraft. These units soon learned, sometimes the hard way, this training was not a waste and could require landing in very dusty areas, especially during construction of combat outposts and while performing time-sensitive target missions.

They have also learned that, depending on the time of year, the conditions of these landing areas are completely different. As seasons change, the forces of nature inevitably change the ground, its effects on night vision goggles or forward-looking infrared and power available. Units, realizing these effects, conduct environmental training as a seasonal task to ensure pilots do not lose this perishable skill and understand the differences in landing or flying in the summer or winter. This training reduces risk and better prepares aviators for some of the more specialized missions that we see conventional aviation units conducting.

The third crewmember. The concept of using a battalion/squadron tactical operations center (TOC) as a "third crewmember" assists aircrews with situational awareness. In high-traffic or high-intensity situations, such as urban environments, a member of the TOC closely monitors radio transmissions between ground units and aircraft to ensure a smooth transition of information. The Soldier manning the radio becomes, in effect, a third crewmember, helping aircrews maintain situational awareness. If the aircrew misses any information, the TOC provides a backup to get them the needed information.

Since the aircrew's primary responsibilities are to maintain aircraft control and respond to the ground commander, this system increases the confidence of ground commanders that their calls for assistance will be heard. While this doesn't work for all environments due to terrain and distances, it can work effectively in urban environments where the TOC is very close to the area of operations. The third crewmember can help mitigate risk because he gives aircrews the ability to focus on flying the aircraft during intense situations. Aircrews can be confident that they will still be able to get critical information from the TOC if they miss a radio call.

Use of the third crewmember is not a difficult task; however, it does require individual

> "In **AVIATION** units, we must **REMEMBER** the most **IMPORTANT** and most **DANGEROUS** thing we do is **FLY** the **AIRCRAFT**, regardless of whether it is in **GARRISON** or **COMBAT.**"

> "The **THIRD CREWMEMBER** can **HELP** mitigate **RISK** because he **GIVES** aircrews the **ABILITY** to **FOCUS** on **FLYING** the **AIRCRAFT** during **INTENSE SITUATIONS.**"

training on the radio. For the "third crewmember" technique to be successful, the Soldier in the TOC must be included in the mission briefing, understand the ground commander's intent, the scheme of maneuver, the intelligence situation or collection plan and be an active participant in the briefing. A little training before deployment pays big dividends in combat with reduced radio traffic and increased situational awareness.

Negative Observations

Although the article began with positive comments, we also encountered negative observations, something we call "focus" areas. We would like to share a couple of these observations with the branch to warn commanders to implement those controls necessary to prevent accidents.

Split-based operations. Our OPTEMPO in theater has forced units to rely on their staff aviators to conduct operations 24/7. When companies are co-located with their parent battalion and/or brigade, they have ready access to those staff aviators; however, when we attach companies/troops to unlike battalions, this is not the case. The company/troop must then rely on its line pilots, yet the expectation seems to be for the unit to sustain the same flying hour rate it sustained when it was under its parent headquarters. This puts significant pressure on the company/troop commanders and has a noticeable impact on fighter management. All levels of command must understand when these units are away from the parent organization, they do not have the flexibility of those staff-supported aviators from the battalion or brigade to rely on to help with their fighter management or to pick up additional missions. Part of the solution is to ensure the correct number of aviators are pushed forward with the companies/troops. The other part is to staff a task force according to the types of aircraft in the task force. This will not only familiarize planners with each aircraft, it will give the company extra aviators when additional missions are requested.

Mission briefing and approval process. Units are not meeting the intent of the execution of the mission briefing and the three-step approval process according to Army Regulation 95-1, *Flight Regulations*. The first step of the initial mission approval process is to ensure the approving official understands the crew's mission, feasibility of the unit's capability to accomplish the mission and the reason the flight is taking place. The second step is the mission planning and briefing process. The intent is for the briefing officer, an experienced pilot in command in the mission set, to conduct detailed planning, risk assessment and risk mitigation with the crew. Discussion includes all risks involved, the impact on operations and recommended actions to reduce or mitigate risk further. In the last step of the final mission approval, the approval authority for the flight ensures a designated briefer briefs the mission, verifies that risks have been mitigated to the lowest level and signs off on the mission as approved. Throughout this process, there is interaction between the crew flying the mission, the briefer listening and showing ways to reduce the level of risk and the approval authority who accepts the residual risk. If this interaction and face-to-face dialogue does not occur, we are not meeting the intent of the process.

Units deployed to Operation Iraqi Freedom and Operation Enduring Freedom are extremely good at face-to-face interaction during the mission briefing and approval process, while units not deployed are doing a very poor job. Some units have 40 to 45 percent of missions as verbal orders of the commanding officer or "VOCO" on the mission brief sheets and/or risk assessment worksheets. Many times it's too difficult to track down the leadership in a garrison environment and the only way to reach them is via cell phone. This scenario can be avoided with a little prior planning. We must have face-to-face interaction with all parties involved to make sure the crew is not too tired or had a bad day, or the briefer realizes the crew mix is not a good one. Units in combat don't have this problem because cell phones are not available and the leadership is usually accessible via the TOC. Most of these units are also limiting the number of individuals on briefing or approval orders and have Leaders who make themselves accessible to the crews. We must take this mentality from combat and apply it to our mission briefing process in garrison.

Finally, if you haven't noticed, all of the items we've discussed are methods to mitigate risk. Throughout the mission approval process, we should always be looking for ways to reduce risk; however, it doesn't stop there. Even after takeoff and throughout mission execution, our air mission commanders and pilots in command must be continuously evaluating the mission to ensure they are reducing risk to the lowest level possible. In aviation units, we must remember the most important and most dangerous thing we do is fly the aircraft, regardless of whether it is in garrison or combat.

Mental Fitness: What is it?

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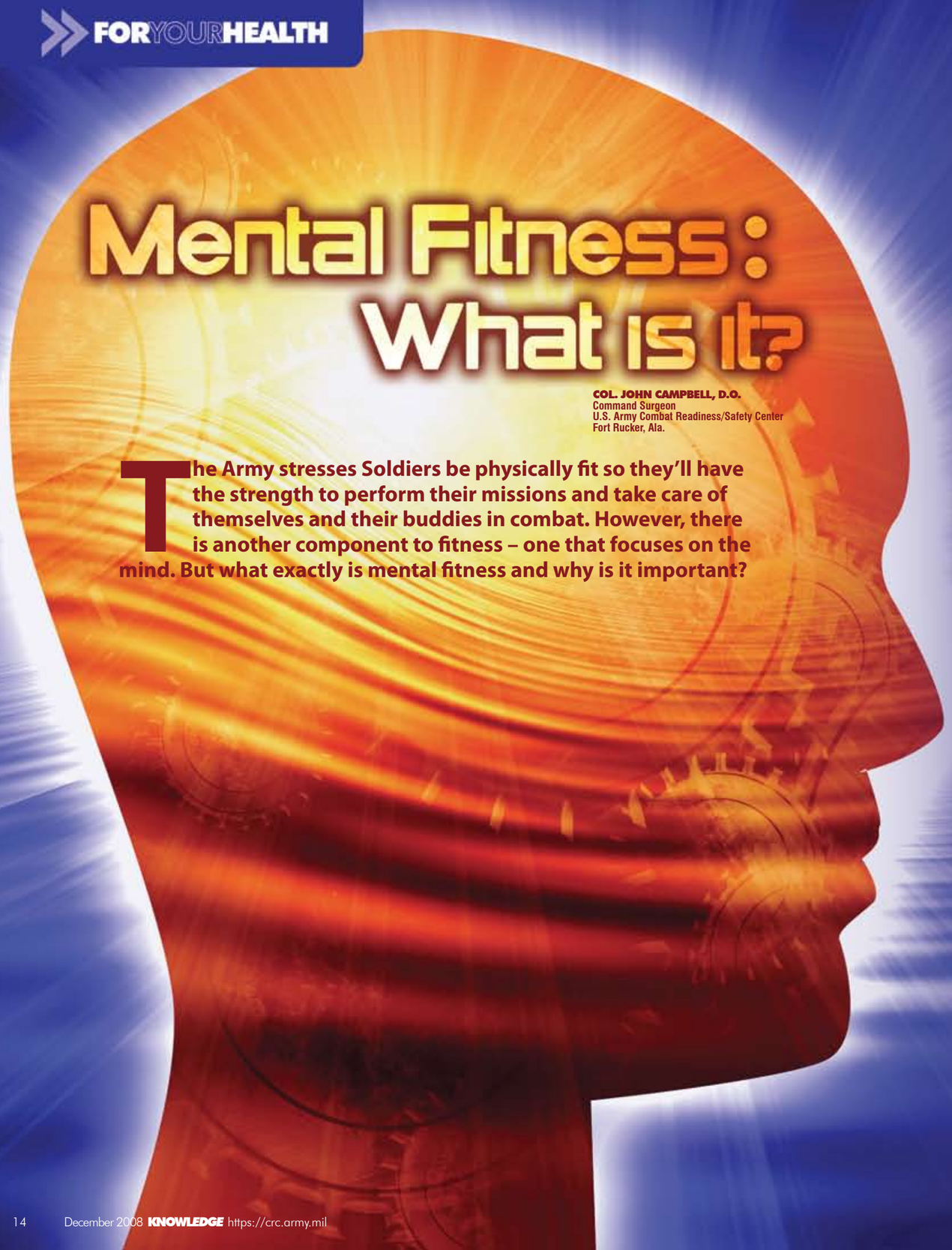

The Army stresses Soldiers be physically fit so they'll have the strength to perform their missions and take care of themselves and their buddies in combat. However, there is another component to fitness – one that focuses on the mind. But what exactly is mental fitness and why is it important?

Mental fitness is having the psychological strength, ability and freedom to efficiently and successfully manage the stresses, problems, adversities, painful emotions and frustrations in daily living. Being mentally fit is essential if Soldiers are to reach their goals and achieve their dreams.

That sounds, in many ways, a lot like being physically fit. In the Surgeon General's Blog[1] dated July 21, 2008, Army Surgeon General Lt. Gen. Eric B. Schoomaker stated, "It is my goal to approach mental health fitness as we do physical fitness – leaders at all levels are involved on a daily basis and the focus is on prevention and health promotion, as opposed to treatment of a condition."

Mental fitness, like physical fitness, is something Soldiers need to work on daily. They need both the physical stamina and mental stamina to handle all the challenges of everyday life, not to mention the increased challenges of combat. To be mentally fit, Soldiers need to be focused, persistent, confident and determined. That's why mental fitness training is important; however, it's not training they can do in the gym or on the track. And it can't be taught in schools, which is, perhaps, one reason many people don't recognize the need for it. However, with proper mental fitness training, life becomes simpler, more satisfying and productive.

The surgeon general's office recently published a report that discussed the old society thinking that there was a clear separation between the mind and body. This thinking is outdated because we recognize there is a strong connection when it comes to good health and performance. Mental disorders affect nearly one in five Americans during any given year and, as Soldiers, we are prone to these disorders, as well. Because of that, we need to take advantage of assistance and treatment as needed. These disorders are real illnesses, which, if left untreated, can be just as serious and disabling as cancer or heart disease.

With so much being asked of our Soldiers each day, it's clear stress levels are mounting. The armed forces have responded by showing extraordinary resilience; however, the stresses of war and those Soldiers face at home can be overwhelming. That is where Leaders, peers, Family, friends, physicians, other health care providers, clergy and counselors need to get engaged and involved. When a Soldier shows signs of change in daily routines and activities, then it's time for someone to ask some personal questions. For example, "What is going on? Do you need help? Can I help? Are you considering hurting yourself or others? Are you having relationship troubles?" I know these questions sound very personal and most people don't feel comfortable asking them, but they need to be asked. The only right choice is to get involved!

The importance of getting involved was reflected in the Army's "Shoulder to Shoulder, No Soldier Stands Alone" theme during this year's National Suicide Prevention Week (Sept. 7 - 13, 2008). Army Assistant Surgeon General for Force Protection Brig. Gen. Rhonda Cornum said the theme emphasized the benefit of Soldiers helping each other deal with the tough problems most frequently linked to suicides. Those include relationship problems, legal and financial difficulties, and occupational and operational issues and stresses.

The point was to assure Soldiers they don't have to face post-traumatic stress disorder, feelings of worthlessness or any other mental illness issue alone. The past stigma associated with seeking help for behavioral health and mental illness problems is something the Army is now trying to break. The Army recognizes helping Soldiers overcome these problems is essential in keeping the Army strong.

The Army has numerous programs and is making information available for Soldiers who need to seek help for themselves or a buddy. Leaders also need to be aware of these resources and the care available for their Soldiers. Currently, there are several online programs available for Soldiers and their Families. Those include the Army G-1 Web site (Army Families Online) at http://www.armyg1.army.mil/soldiers.asp, the U.S. Army Center for Health Promotion and Preventive Medicine at http://chppm-www.apgea.army.mil/ and the U.S. Army Combat Readiness/Safety Center at https://crc.army.mil.

The Army's Battlemind Training, available online at https://www.battlemind.army.mil/, provides videos, posters and training for Soldiers, as well as their Families. This training helps Soldiers and their Families anticipate the challenges they may face before, during and after deployments.

Please take advantage of these and the many other programs available to help our Soldiers survive the physical and mental challenges of today's Army.

[1]The Army Medical Department Surgeon General's Blog is available online at https://blog.amedd.army.mil.

FYI

The Cleveland Clinic offers these tips for improving both your physical and mental health and helping to reduce stress:

- **Learn to relax**
- **Exercise regularly**
- **Eat well-balanced meals**
- **Get plenty of sleep and rest**
- **Do not rely on drugs or alcohol**

The Cleveland Clinic is available online at www.clevelandclinic.org.

Saving Your Kids

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As a father, I couldn't imagine what it would be like to lose a child. I can't imagine the almost unbearable pain and guilt I'd feel if I didn't do everything I could to prevent it. Yet, many parents don't properly protect their children in safety seats and end up sacrificing them in crashes. Many of these deaths could have been prevented.

How big is the problem? According to the National Highway Traffic Safety Administration (NHTSA), motor vehicle injuries are the leading cause of death among children in the United States. Simply placing children in age- and size-appropriate car seats and booster seats could reduce serious and fatal injuries for these younger children by more than half, according to NHTSA.

Yet, many people prefer to make excuses, even while placing their children in great danger. They'll say things like:

"My child doesn't like being in a car seat."

"It's too hard to get the car seat buckled in."

"We are only going to the store."

That last excuse is very disturbing because so many accidents happen within 10 miles of home. And what about the first two excuses? Put yourself in your child's place. Which would you choose – the inconvenience of being restrained in a child safety seat or smashing into the windshield? What if the vehicle rolled? Would you rather be safely restrained or thrown around like a rag doll against the vehicle's interior? How about being thrown onto the road and run over?

OK, you've gotten the message and you'll never let your child ride in a car without being properly restrained. So, you ask, what's the best way to protect your children while they're riding in your car? Check out the information below:

- Seat all children 12 years and younger in the backseat and ensure they are properly restrained every time they ride with you.
- Read the child safety seat instruction manual and your vehicle owner's manual to ensure you properly install the seat.
- Be sure the child safety seat is installed tightly. If you can move the seat more than an inch side to side or front to back, it's not tight enough.
- Send in your child safety seat registration card so the manufacturer can contact you about any recalls.
- Replace any car seat that was used during a motor vehicle crash.

Sounds simple, doesn't it? It just takes a few minutes of your time to prevent a lifetime of regret.

So what is the right seat for your child? The chart in the box below reflects guidance provided by the safety experts at NHTSA.

When shopping for a child safety seat, keep the following tips in mind:

- **No one seat is the "best" or "safest."** The best seat is the one that fits your child's age and size, is correctly installed, fits well in your vehicle and can be used properly every time you drive.
- **Don't decide by price alone.** A higher price does not mean the seat is safer or easier to use.
- **Avoid used seats if you don't know the seat's history.** Never use a car seat that:

–Is too old. Look on the label for the date it was made. Check with the manufacturer to find out how long they recommend using the seat.

–Has any visible cracks.

–Does not have a label with the date of manufacture and model number. Without these, you cannot check to see if the seat has been recalled.

–Does not come with instructions. You need them to know how to use the seat.

–Is missing parts. Used car safety seats often come missing important parts. Check with the manufacturer to make sure you can get the right parts.

–Was recalled. You can find out if a child safety seat has been recalled by calling the manufacturer or by contacting the Auto Safety Hotline at 888-DASH-2-DOT (888-327-4236) or NHTSA at www-odi.nhtsa.dot.gov/cars/problems/recalls/childseat.cfm.

Have you heard about LATCH (lower anchors and tethers for children)? It is an attachment system that eliminates the need to use seat belts to secure child safety seats. Vehicles with the LATCH system have anchors located in the backseat. Car safety seats that come with LATCH have attachments that fasten to these anchors. Nearly all passenger vehicles and all car safety seats produced after Sept. 1, 2002, are compatible with the LATCH system.

The bottom line is if you knew you were going to be involved in a car accident today, would you do anything differently to protect your children? Don't let the one time you failed to do everything right be the one time when it would have saved your child. Use the proper child seat every time. Don't leave yourself room for regrets.

AGE	TYPE OF SEAT	GENERAL GUIDELINES
INFANTS	Infant-only and rear-facing convertible	All infants should ride in rear-facing child safety seats until they are 1 year old and weigh at least 20 pounds.
TODDLERS, PRESCHOOLERS	Forward-facing convertible and combination	Children 1 year of age and that weigh at least 20 pounds can ride in a forward-facing child safety seat. However, it is best they ride in a rear-facing seat as long as possible.
SCHOOL-AGED CHILDREN	Booster seats	Booster seats are for older children who have outgrown their forward-facing child safety seats. Children should stay in a booster seat until adult seat belts fit them properly (usually when a child reaches 4 feet 9 inches in height and is between 8 and 12 years of age).
OLDER CHILDREN	Seat belts	Children who have outgrown booster seats should use a lap and shoulder belt and ride in the backseat until 12 years of age.

Army Releases Approved-Gear Certification Logo

DEBI DAWSON
Program Executive Office Soldier
Fort Belvoir, Va.

Army Combat Uniform? Check. Body armor? Check. Helmet, boots, weapon? Check, check, check. Soldiers wouldn't think about going into combat without their essential gear. When it comes to gloves and eyewear, though, some Soldiers are choosing style over safety.

With most gear, company commanders can tell at a glance that their troops are properly outfitted. However, it can sometimes be difficult for Leaders to spot an inferior knock-off that won't provide the necessary level of protection from burns and fragmentation. The Army's Program Executive Office (PEO) Soldier, the organization responsible for virtually everything Soldiers wear or carry, has come up with some innovative solutions to ensure Soldiers and their Leaders can quickly identify flame-resistant (FR) gloves and ballistic eyewear that meet the Army's standards for protection, performance and durability.

The Rapid Fielding Initiative (RFI) provides FR gloves and ballistic spectacles and goggles at no cost to Soldiers. But PEO Soldier has recognized that Soldiers are more likely to wear gloves and eye protection if they have choices to meet a wide range of preferences. The challenge is to make sure Soldiers can make informed decisions on equipment they purchase on their own — and that their Leaders can quickly determine if Soldiers are wearing approved gear.

The PEO Soldier Certification Logo is the latest effort that meets that challenge. The logo will be stamped on some types of FR gloves and affixed to others as labels. It will also be applied to flashlights. Combat eyewear packaging will continue to carry the widely recognized green Authorized Protective Eyewear List (APEL) sticker, and the new logo will be applied to the packaging and eyewear itself at a later date.

Gloves of Life

Flame-resistant gloves are essential to the overall protection of a Soldier's arms and hands during explosions and improvised explosive device (IED) attacks. These combat gloves must be made of certain leathers, which are inherently flame resistant and durable, or employ a Kevlar®/Nomex® fabric to increase protection from flames and lacerations. To meet Army standards, the fabrics must be flame resistant and not melt or drip. They must also stand up to multiple launderings without losing their fire-retardant properties.

Spec. Omar Avila can attest to the benefits of the Army's rigorous safety standards. Avila, of C Company, 1st Battalion, 26th Infantry Regiment, suffered burns to his arms and legs in an IED blast in the spring of 2007. Avila said his Army-issued summer flyer gloves saved his hands.

Full Illumination

The new certification logo will also be applied to the Family of Flashlights (FoF). The FoF program provides the Soldier with an illumination capability package consisting of smaller, lighter and more versatile multifunctional flashlights/illuminators.

The FoF initiative seeks to ensure safety, performance and reliability. To be Army-certified, flashlights must have the proper filters and switches, the right lumens and a hands-free capability, if necessary. Items approved for the FoF will improve the Soldier's ability to illuminate the battlefield and perform a variety of duties, including potentially lifesaving first aid, reading maps, navigating terrain, signaling, conducting searches and identifying targets.

Reducing Eye Injuries

Wearing APEL eyewear is proven to protect Soldiers' eyes from injury due to fragmentation (ballistics) and burns. APEL products are issued via the RFI. The intent of the APEL is to provide a list of qualified products that meet Army requirements. The goal is to ensure the Department of the Army, unit Leaders and individual Soldiers purchase properly tested and approved eyewear.

The concept of the APEL began several years ago when the U.S. Army Medical Command (MEDCOM) noted that wearing eye protection on the battlefield reduced eye injuries. This has since been verified by recent studies that have found a reduction in ocular trauma that may be largely attributable to the wear of APEL products. Coalition casualties attributed to eye injuries have decreased from 16 percent in December 2004 to fewer than 10 percent through December 2007. PEO Soldier, working in conjunction with MEDCOM and other government agencies, is mitigating the hazards to Soldiers' eyes by fielding eyewear that Soldiers will wear. Mandating use of eye protection, or "eye armor," during field tactical operations, training or situations where there is risk of combat has reduced eye injuries.

PEO Soldier has recognized that Soldiers' use of eye protection is driven by their personal preference. Providing more choices increases Soldier acceptance of the mandate to wear Army-approved ballistic eyewear. The commercially available alternatives on the APEL have recently been tested for laser protection equal to current Army standards for eyewear. After completing a user evaluation in 2009, new stock numbers for these laser-protective APEL products will be assigned.

The current APEL is available online at www.peosoldier.army.mil/pmseq/eyewearmessage.asp. AAFES and Military Clothing Sales Stores also provide the list. For information on other PEO Soldier programs, visit the organization's home page at www.peosoldier.army.mil. ≪

UNAUTHORIZED ALSE MODS ARE A NO-GO!

CHRIS TRUMBLE
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The Department of the Army goes to great lengths and tremendous expense to provide a safe environment for Soldiers operating on the edge. The Army program managers and Training and Doctrine Command system managers assist in designing, developing and testing equipment for aircrew members before integrating the items into the Army's inventory. The Army then follows up this exhaustive process with regulations to ensure the equipment is used the way it was intended. Aviation Life Support Equipment (ALSE) is not designed to be modified without manufacturer and Army approval because it can reduce product effectiveness.

Items of Concern

• Unauthorized helmet liners. When designing a helmet, one of the desired features the Army demands is maximum impact protection. The importance of this feature is to protect aviators and crewmembers from blunt impact to their heads, which could lead to a severe concussion, loss of consciousness or even death.

When a helmet gear unit (HGU) is tested, it undergoes rigorous destructive testing. This is a very costly process. A series of drop tests are performed which involve dropping the helmet onto a steel anvil or platform at a variety of impact velocities. A fresh helmet is necessary for each impact velocity test. Each HGU-56/P costs about $800, and drop tests and helmet stability testing need to be conducted with each helmet size and liner type (multiple tests are required with fresh assets each time). After the helmet passes these decisive tests and is approved, aircrew members should know they have the best possible protective head gear available. Unsafe head gear like in Figure 1 to the right would greatly increase the risk of head injury and, quite possibly, the loss of aircraft control should a head impact occur.

• Unauthorized painting of helmets. Army regulations are written to protect Soldiers' lives and save money. It is common knowledge that if a Soldier purposely takes a sledgehammer and destroys an Army vehicle, Army regulations would deal swiftly with this Soldier. The Integrated Helmet and Display Sight System (IHADSS) helmet costs almost as much as a new automobile. The IHADDS helmet shell is designed to not only protect the aviator from penetration of foreign objects, but also offers a degree of protection from fire. Beyond that, the helmet can protect Soldiers from injuries as they escape and evade capture. Modified helmets, such as those seen above, can increase the risk of becoming burned in a fire or easily detected while escaping and evading. Army regulations also assure the taxpayer the Army is not permitting the willful destruction of valuable equipment.

> "Aviation **LIFE SUPPORT** Equipment (ALSE) is **NOT DESIGNED** to be **MODIFIED** . . ."

• Unauthorized seat modifications. Similar to the high cost of testing helmets, aircraft seats undergo strict testing to ensure maximum comfort and safety. Safety considerations include flame resistance and crashworthiness. Unauthorized modifications to the seat cushion and/or the seat stroking mechanism (stowing items under seats or attaching items to stroking mechanisms) increase the risk of spinal injury. If an aviator suffers a spinal injury, it is obviously painful and costly in terms of medical care and loss of mission-ready personnel in a unit. For the aviator in combat, it could mean the inability to escape and evade and/or provide fire support for fellow crewmembers. In short, it could mean the death of many aircrew members. Examples of potentially dangerous seat modifications are to the right in Figures 2, 3 and 4.

• Unauthorized earcup seals. The U.S. Army Aeromedical Research Laboratory published a report (Shannahan, 1985) on the high incidence of basilar skull fractures experienced in Army aircraft accidents. This led to the development of energy-absorbing earcups in the HGU-56/P. Costs and test efforts applied to the development of the energy-absorbing earcups were similar to those discussed regarding the blunt-impact testing. All this effort and expense in developing energy-absorbing earcups was worthwhile because the incidence of basilar skull fractures experienced by Army aviators decreased significantly. Army aviators can rest easy knowing their IHADDS helmet won't be fitted with the Oregon Aero Hush Kit, the Oregon Aero Soft Seal or Oregon Aero Hush Kit Soft Seal Combination. Remember, Army regulations state aircrew members must not make unauthorized modifications because such items have not proven they meet the requirements for crashworthiness, helmet stability and/or retention.

• Unauthorized helmets. The Army is constantly improving its capabilities and, much to the enemy's dismay, we manage to improve at a tempo they fail to come close to matching. The adaptability and flexibility possessed by Army aviation should make it easy to recognize and accept the change as of July 31, 2007, the SPH-4 helmet is no longer authorized for use. While there is no argument the SPH-4 was a great helmet for the era it served, the HGU-56/P provides better overall performance and protection. Army regulations dictate the use of HGU-56/P, not the SPH.

Help Army materiel developers help Soldiers stay safe by not performing unauthorized modifications or using unauthorized equipment. Materiel developers promise not to fly your aircraft if you'll promise to stop using unapproved alterations on equipment.

Figure 1. Unauthorized Oregon Aero helmet liner in aviation helmet

Figure 2. Unauthorized seat cushion on approved Army aircraft seat

Figure 3. Unauthorized seat cushion identification tag details

Figure 4. Unauthorized seat cushion in crash debris

THE SLIPPERY SLOPE

CHIEF WARRANT OFFICER 2 RICHARD LICHTWARDT
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I consider myself a safe person. I take into account conditions around me and identify possible hazards and solutions to them. I use composite risk management (CRM) in both military operations and in my off-duty activities. Unfortunately, sometimes my "good solutions" don't always work.

For example, it was an exceptionally warm November day for the Fairbanks, Alaska, area. Normally during this time of year, the temperatures are in the single digits. On this particular day, the sun was shining and the temperature was above freezing. It had been warm the previous day and the ice had melted and the roads were drying out. The driving conditions looked good, so I decided this would be a good day to go to a place called Chena Hot Springs, which is about 55 miles from my home.

I decided to take my pickup out of four-wheel drive and save a little gas money. It was almost noon when I began my trip. The previous night's temperatures had dropped below freezing, so I watched the road conditions as I drove through the city. The roads were wet again, but I seemed to be doing OK in two-wheel drive. I drove through the city and was on a hilly road that would take me to my destination. I drove at a safe speed, maintained safe distances from other vehicles and watched the road conditions. I didn't have a clue I was about to get into trouble.

I'd covered about five miles and was going up a gentle slope at 50 mph. When I accelerated to maintain my speed, my rear tires lost traction and I began sliding to the right. I turned my wheels in the direction of

> "When I **ACCELERATED** to maintain my speed, my **REAR TIRES** lost traction and I **BEGAN SLIDING** to the right."

the slide and slammed on the brakes, trying to avoid going off the road. On either side, there was a 30-foot drop-off with trees and other objects. However, instead of stopping, my vehicle began sliding backward and sideways toward the left side of the road. I went off the road and down the steep slope, certain my pickup was going to roll over.

Fortunately, there was enough snow on the slope that my vehicle didn't roll over. Instead, it came to rest at the slope's bottom. I got out and checked my vehicle and everything seemed fine. As I went on foot to look for a spot to get back onto the road, I realized how lucky I'd been. Fortunately, there hadn't been any oncoming traffic. I'd also missed a tree line by 15 feet and a cement water pipe by 4 feet. As I was walking on a snowmobile trail, I noticed access roads on either side of me. The problem was these access roads were about 10 feet higher than the trail and the slope was steep getting up to them. As I headed toward my pickup, I realized someone else could make the same mistake I did and slide off the road and hit my vehicle. I ran back through the snow to my truck, put it in four-wheel drive and drove to one of the access roads.

I made it out of the ditch with the help of a tow truck. The tow truck also pulled out another truck that had gone off the road the previous evening and struck the tree line about 50 feet from me.

After everything settled down, I thought about what happened and how I could prevent it in the future. I realized because there hadn't been much traffic and the road was shaded from the sun, it was still icy.

I don't know if using four-wheel drive would have prevented this accident. However, I decided I would keep my truck in four-wheel drive during the winter and always check road conditions with appropriate agencies.«

YOU GOTTA GET A GRIP!

BOB VAN ELSBERG
Driving Task Force
U.S. Army Combat Readiness/Safety Center
Fort Rucker, Ala.

The author's question about four-wheel drive brings up an important point. The key issue is not so much about four-wheel versus two-wheel drive as it is about traction – about how effectively your tires are gripping the road. If, like many drivers, you assume all-season tires will see you safely through snow and ice, then you're in for trouble, according to the Washington State Department of Transportation (WSDOT). The WSDOT reports these tires provide little traction advantage in winter driving conditions.

There are better choices – tires engineered to keep you on the road when you're facing snow or ice. If these road conditions are part of your winter, the WSDOT encourages you to consider the following options:

Mud and Snow (M+S) Tires. The deep, aggressive tread design of these tires allows them to take a better "bite" out of the snow while preventing it from getting packed between the treads.

Studless Winter Tires. These tires feature special rubber compounds and tread designs to enhance their performance in snow and ice conditions.

Innovative Tires. These tires have additional substances blended with the rubber compound in the tread area to create additional traction. Examples include crushed walnuts, silica and specialized polymers. According to the WSDOT, some of these tires outperform studded tires in icy conditions.

Lightweight Studs. These studs cause less damage to the roadway than regular steel studs while still improving traction on icy surfaces.

Tire Chains. At relatively low speeds, chains offer reliable traction on ice and hard-packed snow. Because chains can be placed on a vehicle's normal tires or removed from them relatively quickly and easily, they allow drivers to adjust to changing road conditions as needed.

What about using traditional studded tires? According to the WSDOT, under nonfreezing, wet driving conditions, studded tires actually reduce a vehicle's traction by preventing the tread from fully contacting the road surface. The result is longer stopping distances, not to mention the damage studs cause to road surfaces.

Also, did you notice the author mentioned the road was shaded? Be careful when approaching shaded sections of roadway, as they may have ice when other parts of the road are clear.«

WINTER RIDING TIPS

CHIEF WARRANT OFFICER 5 ROBERT REYNOLDS
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Depending on where you live, the winter months can range from a minor drop in daytime highs to having snow 5 feet or deeper and temperatures in the single digits. As a result, preparing to ride a motorcycle during the winter can be as simple as throwing on an extra base layer of clothing or as difficult as negotiating ice on the roadway. Here are some tips to help keep you safe while riding during the winter season.

Your Body

There's a good reason veteran cold-weather riders wear multiple layers of clothing, leather outerwear and even electrically heated riding suits to help insulate them against the cold. The combination keeps you warm and protected from the elements, creating a more enjoyable riding experience.

Most heat loss occurs at the extremities, especially your head. A full-face helmet will keep you warmer and less susceptible to wind chill.

Your Bike

- A windshield will greatly reduce wind chill, keeping you warmer and more comfortable.
- It's critical to check your tire pressure before each ride during the colder months, as tires can lose upward of 5 psi every day.
- Cold-weather riding puts even more strain on the battery. Use a battery charger to keep it properly charged.
- Use the appropriate weight engine oil for the temperature range you will be operating your motorcycle.
- In extremely cold weather, it can take up to 15 to 20 minutes of riding before your tires reach their ideal operating temperature.

Your Ride

- Winter riding usually means ever-changing road conditions and hazards, including ice, salt, gravel, wet leaves and pressure ridges. Maintain vigilance and adjust your speeds accordingly.
- Wet leaves are as slippery as an oil slick and just as dangerous. Be aware that moisture trapped under seemingly dry leaves can freeze, creating a hazard in your path.
- When you encounter areas of reduced traction, decrease your speed and lean angle while maintaining equal braking pressure between the front and rear brakes.

> "… preparing to **RIDE** a **MOTORCYCLE** during the **WINTER** can be as **SIMPLE** as **THROWING** on an extra base layer of **CLOTHING** or as **DIFFICULT** as **NEGOTIATING** ice on the **ROADWAY**."

- Certain species of trees will release sap during the winter that can form a slippery film when combined with rain.
- Ice can be the single most treacherous aspect of winter riding and often lies in wait in low or shaded areas, bridges and overpasses. Your tires make almost no sound when they are running on the ice. If you notice your tires suddenly get quieter on that back country road, take heed; you might be on ice.

PFC. PERCY MORALES
101st Combat Aviation Brigade, 101st Airborne Division
Afghanistan

THE DANGERS OF HUFFING

In a deployed environment, it is common to find that almost every electronic device and weapon accumulates a lot of dust. Dust can ruin electronics because it quickly causes overheating. We, as Soldiers, are taught from our initial training that it is imperative to keep our weapons clean and free of dust and debris. A can of Perfect Duster® is very useful for aiding us with the task of keeping our weapons and equipment clean. Because of these reasons, the Army feels it is necessary to provide us with cans of Perfect Duster®. The increased accessibility to these products has also presented some concerns about Soldiers using canned air as an inhalant.

There is a popular misconception that Perfect Duster® is just "air in a can." Moreover, some users have the false impression that canned air is a safe alternative gas, much like nitrous oxide. However, Perfect Duster® is actually a liquefied gas consisting of difluoroethane, trifluoroethane or tetrafluoroethane. Huffing – the street term for inhaling chemicals – can cause death, paralysis or other serious injuries.

Huffing deprives the brain of oxygen when the user inhales vapors from aerosols, paint and other products, now including canned air. The chemicals that are in canned air affect the central nervous system and create a brief sense of euphoria.

Recently, an Army colonel with 22 years of service died in Iraq from huffing. He was found in his combat housing unit with 14 empty cans of canned air and was slumped over another half-filled can. When the Criminal Investigative Division conducted its investigation, it found difluoroethane in the colonel's blood.

According to the National Institute on Drug Abuse, the key danger of inhalant abuse is sudden sniffing death syndrome. The syndrome is the label given to cases, like the one provided, when a huffer dies within seconds of taking a hit, usually from heart failure.

Overall, 47 members of the armed forces have died of inhalant abuse since 1998. More than half of those cases (29) were Soldiers. Since Operation Iraqi Freedom and Operation Enduring Freedom, there have been eight confirmed deaths from inhalant abuse. A 2005 Defense Department report showed that 3 percent of Soldiers admitted using inhalants in the past year. The same survey cited that military members were far less likely than civilians to have used marijuana or cocaine within the past 30 days, yet they were slightly more likely to have huffed. Huffing is now considered the third most commonly used drug in the military behind marijuana and cocaine.

> "**HUFFING** is now **CONSIDERED** the third most **COMMONLY USED** drug in the military **BEHIND MARIJUANA** and **COCAINE**."

Manufacturers of Perfect Duster®, Dust-Off® and other similar products have now introduced a "bitterant" that leaves a terrible taste in the mouth of anyone who attempts to inhale them. Several bases in Iraq have banned canned air from Soldiers' living quarters, but no such ban has been imposed in Afghanistan. The Army has recently made efforts to start a campaign to warn Soldiers of the effects of huffing canned air and other inhalants.

The warning signs of someone huffing are similar to those exhibited by users of other drugs, as well as persons at risk for suicide. We are encouraged, as Soldiers, to police our battle buddies. If there is a certain Soldier who stays secluded in his or her room and is nonsocial, we need to work together to reach out to that Soldier. Also, make sure you alert your chain of command about anyone who might be at danger. All of us were briefed before we left Fort Campbell, Ky., of the dangers of people showing these warning signs. We must not forget our training. We are our brothers' keepers.

Remember the acronym ART. I am **A**ccountable to myself and my battle buddy. Together, we form the cornerstone of our combat team. I am a warrior and **R**esponsible for my own actions. I can save my own life! Our chain of command and Families overwatch Soldiers to help preserve our fighting **T**eam.

SAFETY CHALLENGES REQUIRE 'OUT-OF-THE-BOX' THINKING

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G7
U.S. Army Combat Readiness/Safety Center
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Senior safety Leaders from around the world, representing major command installations, traveled to Fort Rucker recently to participate in the U.S. Army Combat Readiness/Safety Center's (USACRC) biannual Senior Safety Professional Development Symposium. The event highlighted how the Army has made remarkable progress in the field of safety, but opportunities to better address existing and emerging safety challenges will require "out-of-the-box" thinking.

"Think Outside the Box" was selected as the symposium theme to encourage safety professionals to search for solutions using innovative approaches to reduce Army losses.

Gen. Benjamin Griffin, commanding general of the U.S. Army Materiel Command (AMC), delivered the keynote address and spoke at length about the importance of engaging Soldiers and Leaders through out-of-the-box thinking to find real solutions in the quest to reduce accidents and prevent losses. Griffin believes victory on and off the battlefield is achieved through proactive safety measures and that the Army has world-class safety professionals leading the way. He also discussed innovative programs AMC has used successfully, adding the safest AMC facilities have the best reporting processes.

The second day of the symposium featured an address by Sgt. Maj. of the Army Kenneth Preston. Preston talked about the Army's imperatives and how he believed disciplined units were inherently safe. However, he said, Leaders must continue to mitigate high-risk behavior and indiscipline in Soldiers, especially off duty. Because off-duty accidents continue to be an area of concern, a lengthy segment, in a moderated forum, was dedicated to the issue.

Another portion of the event included a Best Practices forum led by Col. Mike Simmons, executive director of Current Operations at the USACRC. Safety directors had the opportunity to learn about innovative projects, activities and ideas commands across the Army are employing to safeguard Soldiers, Department of the Army civilians and Family members. Each director received a "Best Practices & Good Ideas" booklet containing 13 Best Practices and a number of additional resources – to include award submissions, initiatives and observations from a number of organizations and commands. A corresponding CD-ROM containing additional information such as presentations, pictures and checklists was also created and disseminated among participants. Contents of the Best Practices booklet and the corresponding CD-ROM may be obtained by visiting the USACRC Web site at https://crc.army.mil and clicking the Best Practices/ Lessons Learned tab.

Senior safety directors heard a new way of thinking about high-risk performer training and control from Col. Tom Kolditz from the U.S. Military Academy. Kolditz's presentation, titled "In Extremis Leadership," described key characteristics that in extremis Leaders display. He spoke of experiences that included interviews with parachutists, SWAT teams, Soldiers (both American and Iraqi), firefighters and even a tiger hunter. He believes understanding the way decisions are made, based on life-and-death situations, on or off duty, is imperative in preventing accidents.

Symposium participants also heard from a Soldier who is living proof of the effectiveness of personal protective equipment (PPE). Master Sgt. Richard Burnette described what happened when he did not reinsert his hearing protection after answering a radio call and how his life was saved by the use of other PPE, specifically his safety goggles and body armor, during a bomb blast in Iraq.

An excellent case study using out-of-the-box thinking was presented by Lt. Col. Steve Bullock of the U.S. Army Center for Health Promotion and Preventive Medicine. His brief, titled "Leadership for Injury Prevention," highlighted research that took traditional military physical training (PT) and explored how to make it safer while achieving the same end state. The presentation illustrated how other service branches have seen significant reductions in injury rates by simply modifying traditional PT regimens.

The final day of the symposium offered interactive methods for attendees to determine appropriate techniques for leading teams to high performance. The optional training was provided by Dr. Warren Blank and Dr. Joe Mangino with the Center for Creative Leadership. The symposium also included an overview of safety program accomplishments and goals by Tad Davis, deputy assistant secretary of the Army for Environment, Safety and Occupational Health. Additional topics included suicide prevention initiatives with Col. John Campbell, command surgeon of the USACRC, and electrocution/ Mine Resistant Ambush Protected (MRAP) vehicle lessons learned with Col. Glenn Harp, deputy commander of the USACRC.

GET THE MESSAGE!

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Have you ever changed out a part on a piece of equipment even though it worked just fine? Have you changed a procedure you have followed dozens of times because a message came down that instructed you to do so? Ever wonder why?

Safety notification messages are generated when users have identified a problem or concern and have asked for clarification. These messages offer solutions to problems that may affect an entire fleet of vehicles or a select model of equipment. Sometimes, this change requires technical manual updates.

Tactical Army Command is one of five major subordinate commands that releases safety notification messages through the correct channels after a problem and a corrective action is identified. There are three types of safety notification messages: a Safety of Use Message (SOUM), Ground Precautionary Message (GPM) and Maintenance Advisory Message (MAM). The type of message is determined by assessing the degree of risk presented by the hazard. The risk may be high, medium or low.

A SOUM is a message that disseminates safety information to the field. It is used when any actual or potential defect or hazardous condition creates a high or medium potential safety risk that could cause death or serious injury to Army personnel or damage to Army equipment.

SOUMs are classified into three categories: deadline, technical and operational. A SOUM-deadline orders an immediate termination of the operation and use of a specific model, series or design of equipment until the detailed corrective action outlined in the SOUM is completed and reported back. A SOUM-technical provides guidance for performing actions or inspections to determine if a hazardous situation is present. If a condition exists, the equipment is deadlined until certain tasks are performed. A SOUM-operational imposes changes to operating procedures or mandates limits on the use of specific equipment.

A GPM is issued when any actual or potential defect or hazardous condition creates a medium or low risk of causing injury that is not considered serious to Army personnel or damage to Army equipment. A MAM provides new or corrected maintenance and operating instructions to the field or reiterates pertinent information to the user. No safety issues are addressed in MAMs.

The key to making safety notification messages effective in your organization is understanding the content of the messages. All messages are formatted to be clear and concise, allowing for quick identification of the hazard and the required corrective action. Each message contains:

- a summary of the problem
- expected results if the hazard occurs
- user actions, including required parts, manuals and tools and the disposition of hazardous materials
- program manager actions, including changes to publications, follow-up actions and assistance for completing required actions
- supply status
- points of contact.

To avoid unnecessary injuries or accidents, safety notification messages are released in a timely manner once a hazard is identified and assessed. The safety notification system is an effective means for the program manager to provide immediate and worldwide information to the field about potential safety and health hazards. It is critical that everyone read and understand how the safety message system works and how it can be effective when applied to the daily mission.

FYI

Do you want to automatically receive e-mail announcements about new safety messages? Check out the Army Electronic Product Support (AEPS) restricted Web site, which lists all of the messages. You'll need to register an AKO logon and password or CAC to get access to the AEPS Web site. To get to the safety messages, open the AEPS public Web site and click on the restricted access icon at https://aeps.ria.army.mil/aepspublic.cfm. Log in, scroll down to and click on Safety Messages. Near the top right of the page under NEW FEATURE, click on Subscribe to Safety Related Information. You can choose e-mail notifications by either weapons system code or by functionality (SOUM, SOF, etc.). Your notification will include the type of message, subject, release number, a short description and a Web link to the message.

Source: ***PS Magazine***

KNOWLEDGE

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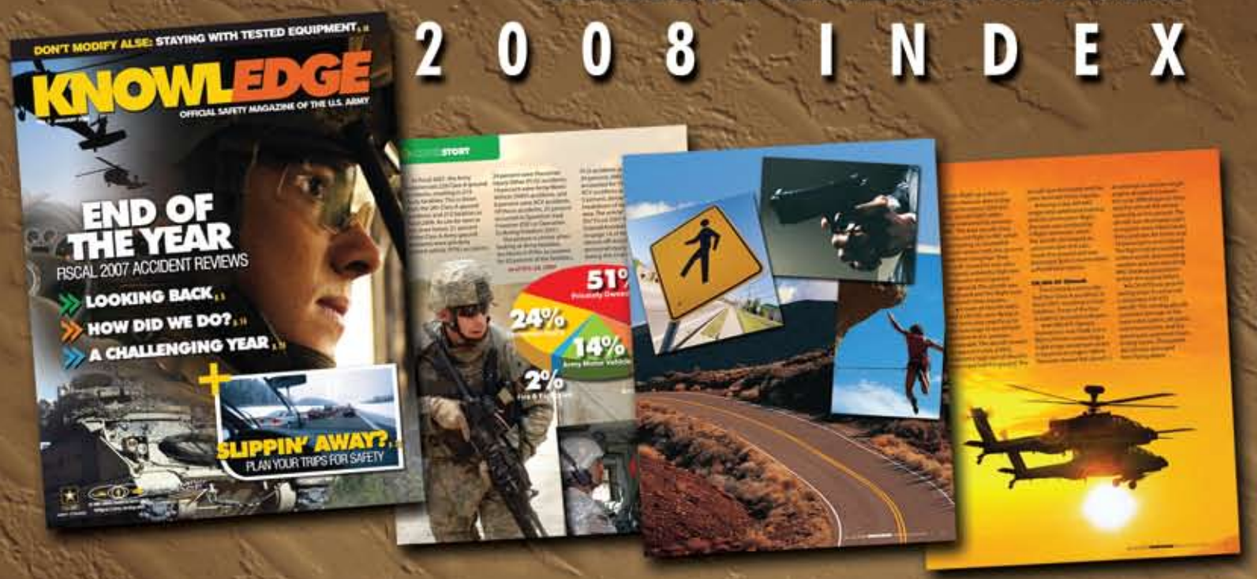
OFFICIAL SAFETY MAGAZINE OF THE U.S. ARMY

2008 INDEX



To view complete issues of *Knowledge* online, visit the U.S. Army Combat Readiness/Safety Center Web site at https://crc.army.mil.

LOST

AVIATION

AH-64

CLASS C D Model

The aircraft sustained foreign object damage to the main rotor system during landing to an established airfield. One main rotor blade (MRB) and two MRB tip caps required replacement.

CH-47

CLASS A D Model

During a test center-sponsored slingload test for a SMART-T-equipped HMMWV, an inadvertent release of each of the dual sling system hooks occurred and the vehicle fell to the ground.

WAS THE PICKLE GRIP SECURED? WAS ARMING/SAFING THE HOOK AND RELEASE AUTHORITY BRIEFED?

OH-58

CLASS B D(R) Model

The crew experienced an uncommanded left roll and yaw during a 180-degree pedal turn to land in a downwind condition. One MRB contacted the ground.

UH-60

CLASS B L Model

The aircraft struck a tree during landing to an unimproved landing zone (LZ). All four MRBs sustained damage.

WERE LZ PHOTOS PROVIDED AND TOUCHDOWN POINTS IDENTIFIED DURING THE MISSION BRIEF? WAS A LOW RECON CONDUCTED BEFORE LANDING TO VERIFY SUITABILITY?

The aircraft experienced a "high side" failure of the No. 2 engine during level flight. An engine replacement was required.

CLASS C

A strut failure occurred during dust landing procedures training. No hard landing was reported.

UC-35

CLASS C A Model

Post-flight inspection revealed damage consistent with a lightning strike after the crew flew in the vicinity of thunderstorms. Damage included the radome and right wing tip.

UAS

MAV

CLASS C

The operator observed uncommanded movement of the UAS while the system was at 200 feet above ground level, followed by an uncommanded descent and impact with the ground. A total loss was reported, to include avionics and payload pods.

RQ-7B

CLASS C

The UAS experienced a generator/ignition failure during flight. The parachute was deployed and the UAS landed outside the perimeter of the forward operating base, resulting in damage.

The UAS experienced a launch failure, separating from the shuttle. Damage was reported to both the system and shuttle.

RQ-11B

CLASS C

At an altitude of 400 feet, the UAS uplink and downlink were lost during an aerial reconnaissance mission. The UAS was not recovered.

GROUND

AMV

CLASS A

A Soldier was killed when the M984/A1 HEMTT wrecker he was riding in overturned. The driver of the vehicle was changing lanes when he swerved to avoid an object on the road and lost control. The vehicle commander was ejected and suffered fatal injuries. The driver received non-life-threatening injuries.

HOW CAN THE BATTLE BUDDY SYSTEM BE USED TO ENSURE RESTRAINTS ARE USED PROPERLY?

A Soldier was killed when the M978 HEMTT fuel tanker he was driving overturned. The Soldier was attempting to negotiate a curve while going down a steep hill when the vehicle rolled over into a ravine. The vehicle commander was able to egress and suffered only minor injuries. Seat belt use was not reported.

A Soldier serving as the gunner in an M1114 HMMWV was killed in a rollover accident. The driver of the vehicle was negotiating a sharp turn when the road gave way and the vehicle

ARMY AIRCRAFT LOSSES

Fiscal 2002 to Present

as of November 5, 2008

AH-64A/D	11/51
U/MH-60A/L	10/29
C/MH-47	8/19
OH-58D	11/28
TOTAL	40/127

ARMY GROUND LOSSES

Fiscal 2009

through October 2008

AMV	2/2
ACV	0/0
PERSONNEL INJURY includes weapons handling accidents	3/3
FIRE/ EXPLOSION	1/0
PROPERTY DAMAGE	0/0
TOTAL	6/5

rolled, pinning the gunner underneath. Personal protective equipment use was not reported.

WHEN IS THE LAST TIME YOUR SOLDIERS PRACTICED ROLLOVER DRILLS? IS THERE A NEED TO MODIFY WHEN AND HOW YOU DO THEM?

Personnel Injury

CLASS A

A Soldier suffered fatal injuries when she was struck in the abdomen by a round discharged from an M500 shotgun as it was being cleared by another Soldier. The Soldier who was handling the weapon did not use a clearing barrel.

A Soldier was found unresponsive in a swimming pool at her apartment complex. She was taken to a local medical facility, where she was pronounced dead.

A Soldier suffered a heat-related injury during a squad-level physical training run. The Soldier was transported to a combat support hospital, where he was placed on a ventilator and listed in critical condition.

A Soldier suffered fatal injuries in a parachuting accident during unit military free-fall training. The Soldier became entangled with another Soldier about 200 feet above ground level. Neither Soldier was able to separate before striking the ground. Both Soldiers were evacuated to a medical facility; however, one died en route. The other Soldier was hospitalized in serious condition.

A Soldier collapsed and later died after completing the 2-mile-run portion of the Army Physical Fitness Test.

A Soldier was killed when he was struck by two vehicles while walking along a roadway. The Soldier was transported to a local medical center, where he died a few hours later. Alcohol use was a factor in this accident.

A Soldier suffered fatal injuries when he was struck by rounds from another Soldier's M4 rifle. The Soldiers were cleaning and conducting weapon function checks at the time of the accident. After reassembling a weapon, one of the Soldiers performed a function check on "semi," which failed. He then performed a function check on "burst." The weapon discharged, firing three rounds and striking the other Soldier.

ARE YOUR SOLDIERS TRAINED ON THE PROPER PROCEDURE FOR CONDUCTING A FUNCTION CHECK?

CLASS B

A Soldier lost portions of several fingers when a munition detonated in her hand.

DRIVING

POV

CLASS A

A Soldier was driving her car to her duty location when she crossed the double yellow line and struck a pickup head on. The Soldier was pronounced dead at the scene.

A Soldier was driving his pickup in wet weather when he struck a guardrail and an exit sign along an interstate and then rolled over. The Soldier, who was killed, was wearing his seat belt.

A Soldier was driving his pickup in heavy rain and windy conditions when he lost control, left the roadway and struck a telephone pole. The Soldier, who was wearing his seat belt, was pronounced dead at the scene.

DO YOUR SOLDIERS UNDERSTAND THAT PICKUPS, WITH THEIR LIGHT REAR ENDS, CAN BE TRICKY TO HANDLE ON WET ROADS?

A Soldier was turning left into a parking lot when his car was struck on the passenger side by a vehicle in the oncoming lane. The Soldier was pronounced dead at a local medical facility.

A Soldier was driving at high speed when he lost control, ran over a rock-covered median and then rolled several times. The Soldier and both of his passengers – a civilian and another Soldier – were thrown from the vehicle. All three were taken to a local medical facility, where the driver later died.

POV DRIVING LOSSES Fiscal 2009

through October 2008

Class A accidents/Soldiers killed	
CARS	4/4
SUV/JEEPS	1/1
TRUCKS	0/0
MOTORCYCLES	1/1
PEDESTRIAN	2/2
OTHER*	0/0

*Includes: vans and ATVs

8 TOTAL DEATHS

Fiscal 2008: 13 3 year average: 10

M240H MACHINE GUN REPLACES M60D

The M240H aviation machine gun recently replaced the M60D on all Army UH-60 and CH-47 aircraft. Effective Oct. 31, 2008, all Black Hawk and Chinook units should have the new M240H weapon system installed. If your unit has not been fielded the M240H, contact Kathy Scherer at TACOM-RI, DSN 793-6303 or (309) 782-6303, or e-mail kathy.scherer@us.army.mil to arrange for your unit to receive the new weapon system.

POM

CLASS A

A Soldier was operating his sportbike when he attempted to negotiate a curve, lost control, left the road and crashed into a ditch. The Soldier suffered head trauma and died 15 days later.

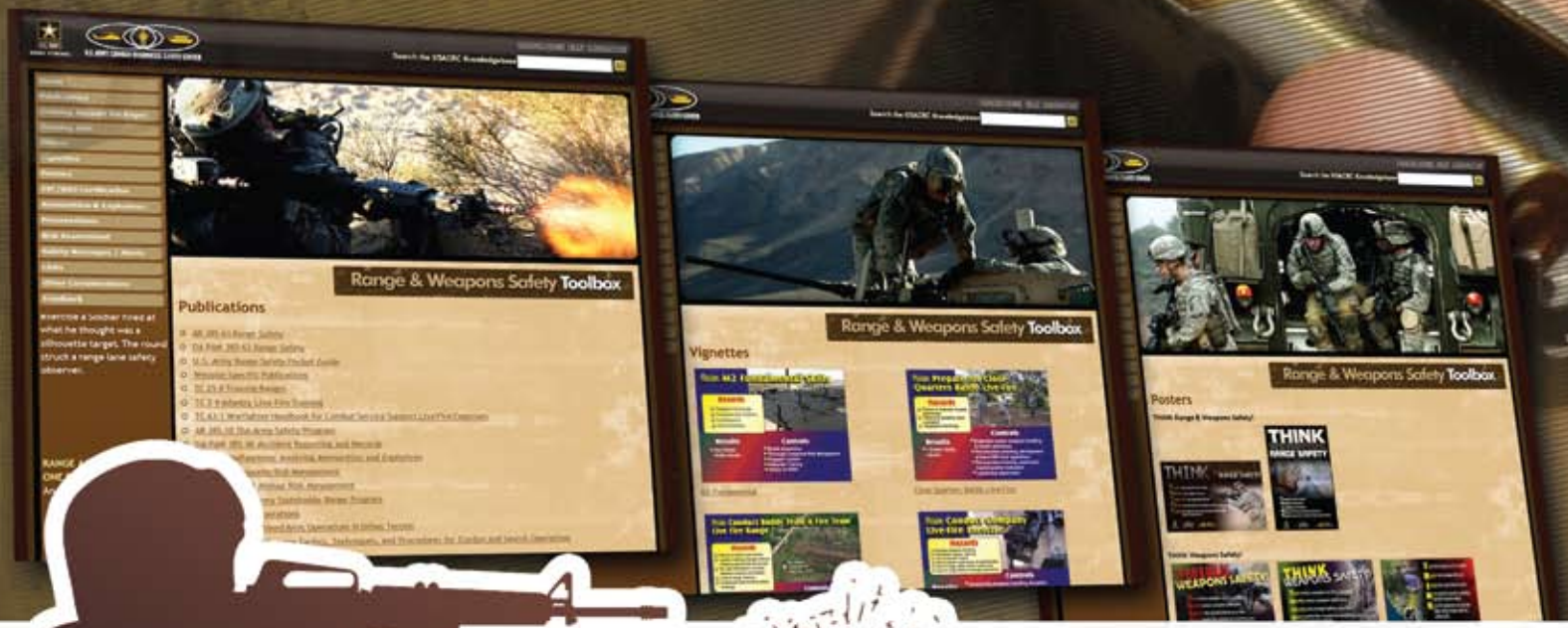
A Soldier was operating a borrowed sportbike with another Soldier riding as a passenger when the operator lost control while attempting to round a curve during rainy conditions. The motorcycle struck the median and ejected both Soldiers into the oncoming lanes. The passenger died at the scene, while the operator died a short time later at a medical facility. Only one helmet was found at the crash scene and it was shattered. The operator had not completed Army-approved Motorcycle Safety Foundation training.

A Soldier was operating his motorcycle when he crossed the center line into oncoming traffic and collided head-on with a pickup. The Soldier, who was wearing his helmet, was killed in the accident.

Editor's note: Information published in the accident briefs section is based on preliminary loss reports submitted by units and is subject to change. For more information on selected accident briefs, e-mail safe.knowledge@conus.army.mil.

ARE YOU A SHARP SHOOTER?

The Range & Weapons Safety Toolbox is a collection of resources to help commanders and leaders establish and maintain an effective range and weapons safety program.



RANGE & WEAPONS SAFETY TOOLBOX

CHECK IT OUT TODAY!

https://crc.army.mil/rangeweaponssafety

U.S. ARMY
ARMY STRONG.

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

ARMY SAFE IS ARMY STRONG

No matter what your buddy is driving, take the keys and be the designated driver.

DON'T HESITATE
DESIGNATE!

U.S. ARMY
ARMY STRONG.

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

ARMY SAFE
IS ARMY STRONG

Seat Belts
Rollover Drills
HEAT Training

Walking Away

U.S. ARMY
ARMY STRONG.™

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

ARMY SAFE IS ARMY STRONG

Did you know the risk of becoming a fatality in a HMMWV accident is six times greater for those not wearing a seat belt?

Also, 94 percent of those who used their seat belt survived a rollover incident.