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KNOWLEDGE

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OFFICIAL SAFETY MAGAZINE OF THE U.S. ARMY

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U.S. ARMY
ARMY STRONG.

A BAND OF BROTHERS & SISTERS

KNOWLEDGE

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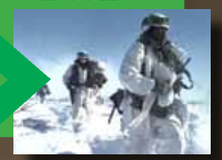

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U.S. ARMY COMBAT READINESS/SAFETY CENTER

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Mission statement: The United States Army Combat Readiness/Safety Center (USACR/Safety Center) supports our Army by collecting, analyzing and communicating 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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FROM THE DASAF

"WE SAW in 2009 that ENGAGED LEADERSHIP at ALL LEVELS of command DOES indeed WORK in KEEPING our SOLDIERS SAFE and MISSION-READY."

RENEWING THE COMMITMENT TO SOLDIER SAFETY

Happy New Year to everyone! January brings a sense of renewal and an opportunity to reflect on our past missteps and successes and map out a plan to make the coming year the best yet. Regarding accidents, our Army had a pretty good year in 2009. In fact, it was the best year since the terrorist attacks of Sept. 11, 2001. We can do even better in 2010 by taking a look at where we've been, finding those areas we can improve and renewing our commitment to keeping our great Soldiers, our "Band of Brothers and Sisters," safe in the months and years ahead.

A BAND OF BROTHERS & SISTERS

Here's a broad look at the numbers for fiscal 2009. Overall, Army fatalities were down 16 percent from fiscal 2008, with a reduction of just over 42 percent for the five-year period since the beginning of fiscal 2005. That's great news for the Soldiers, Families and civilians who make up our Army team and for engaged Leaders who have put forth great effort to drive down unnecessary losses.

We cannot allow positive statistics to lull us into complacency, however. The bottom line is 173 Soldiers were killed in accidents in fiscal 2009, the vast majority of them in off-duty privately owned vehicle (POV) accidents. Although both POV and motorcycle fatalities were down by about 13 percent in 2009, two specific factors — alcohol and/or speed — contributed to more than half these accidents. We also didn't reduce accidents across the board in 2009; fatalities in both Army Motor Vehicles and Army Combat Vehicles rose slightly from numbers logged in 2008.

We saw in 2009 that engaged leadership at all levels of command does indeed work in keeping our Soldiers safe and mission-ready. We've also learned Soldier-to-Soldier and direct Family engagement are vital to our safety programs. Leaders, please continue to search within your formations for those areas that need improvement while simultaneously strengthening your proven safety practices. I encourage all Leaders to utilize our Leader Risk Assessment, Individual Risk Assessment and the soon-to-be-released "Soldier-to-Soldier" Assessments to gain insights into their formations and develop a way ahead.

Our problems with off-duty Soldier indiscipline call for Leaders to personally engage their Soldiers regarding individual responsibility in off-duty activities, particularly behind the wheel of a POV. Similar effort is needed on the tactical side, where fatal accidents involving speed and nonuse of restraint systems remain an all-too-common occurrence. "Safety sense" while driving is especially important during this time of year, when many of our Soldiers will encounter snow and ice conditions in both their personal and tactical vehicles.

I am confident we can capitalize on this past year's many safety successes and make 2010 an even safer year for our total Army Family. A strong team effort and steadfast dedication to safety are proven winners in our strategy to eliminate needless losses, and the U.S. Army Combat Readiness/Safety Center stands ready to help as you renew your commitment to Soldier safety in 2010 and beyond.

Thank you for all you do to make each and every day safe for our Soldiers, Families and civilians. Have a happy, prosperous and safe new year!

WILLIAM T. WOLF
Brigadier General, USA
Director of Army Safety

HOW DID OUR ARMY DO?

Fiscal 2009 End-of-Year Review

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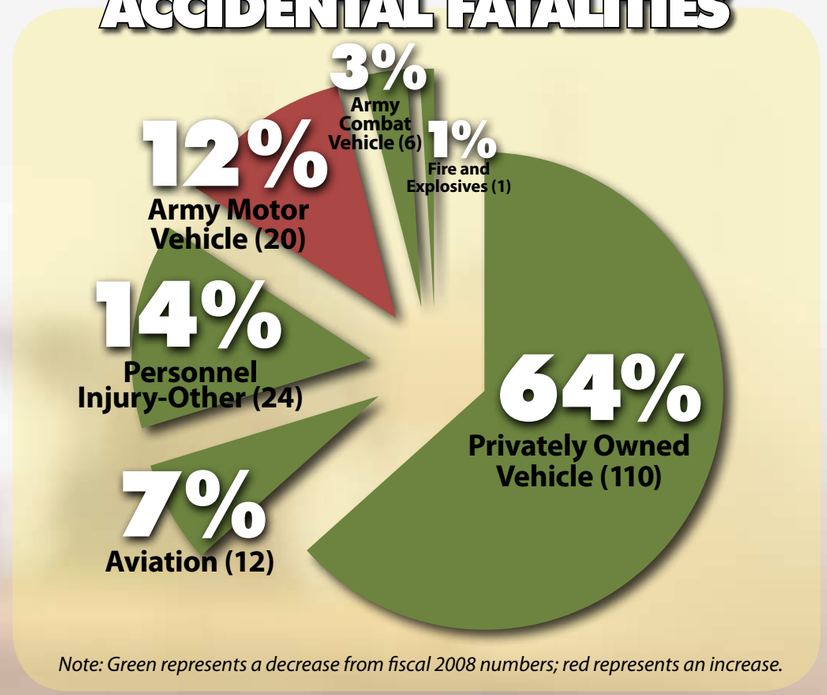
The Army's accidental fatality numbers dropped in fiscal 2009 to their lowest level since the terrorist attacks of Sept. 11, 2001. Additionally, the accidental fatality rate, 0.24 per 1,000 Soldiers, is at its lowest since 1974, the year the Army Safety Management Information System began. Leading the way in the decline were privately owned motorcycle deaths, which dropped by 19 when compared to fiscal 2008.

During fiscal 2009, the Army experienced 173 accidental military fatalities. Overall, fatalities were down 16 percent from the 207 experienced in fiscal 2008. As seen in the chart to the right, privately owned vehicle (POV) accidents accounted for 64 percent of the fatalities, followed by personnel injury-other (PIO) accidents at 14 percent, Army motor vehicle (AMV) accidents at 12 percent, manned aviation accidents at 7 percent, Army combat vehicle (ACV) accidents at 3 percent and explosive and fire accidents at 1 percent. This article provides a more detailed breakdown of Army on-duty and off-duty accidental fatalities during fiscal 2009.

ON-DUTY

There were 52 on-duty Soldier accidental fatalities in fiscal 2009, three fewer than in fiscal 2008. These deaths involved the AMV, ACV, manned aviation, explosive and fire and PIO. (Editor's note: In addition to these fatalities, a dismounted Soldier was fatally injured when he was struck by a POV.)



Note: Green represents a decrease from fiscal 2008 numbers; red represents an increase.

GROUND

Army Motor Vehicle

AMVs are all Army wheeled motor vehicles except the Stryker and Mine Resistant Ambush Protected (MRAP) vehicle. There were 20 Army military fatalities related to AMV accidents during fiscal 2009, two more Soldier deaths than the previous year. Of the 20 fiscal 2009 AMV fatalities, 18 occurred during Operation Iraqi Freedom/ Operation Enduring Freedom (OIF/OEF).

Tactical vehicle accidents accounted for 15 of the 20 fatalities, 12 of which involved the HMMWV. This total was three more HMMWV fatalities than in fiscal 2008. Of the 12 HMMWV fatalities, 11 occurred during OIF/OEF. The M1151 accounted for 10 of the 12 HMMWV fatalities.

Army Combat Vehicle

ACVs include all tracked combat vehicles, as well as the MRAP and Stryker. There were six ACV-related Soldier accidental fatalities in fiscal 2009, which was down one fatality from the previous year. All six of the fatalities occurred during OIF/OEF.

Three of the six fatalities resulted from MRAP vehicles overturning and fatally injuring the gunner. One Stryker accident also involved a rollover, resulting in two Soldier deaths. The remaining ACV fatality resulted from an M1117 Armored Security Vehicle rollover that fatally injured the gunner.

Explosive and Fire

There was one Soldier accidental fatality due to fire in fiscal 2009, compared to two fatalities the previous year. A Soldier in Iraq died in a fire that started when he tried to ignite a propane stove with a lit piece of paper.

Personnel Injury-Other

PIO accidents are Army accidents that involve injury to personnel not covered by any other accident type. There were 12 on-duty PIO accidental fatalities in fiscal 2009, compared to 14 fatalities in fiscal 2008.

Four of the fiscal 2009 fatalities occurred during OIF/OEF.

Physical training (PT) and weapons handling were the most frequent activities involved in the 12 PIO fatalities. Three PT-related fatalities included a Soldier suffering a heat injury during a road march, a Soldier collapsing after participating in organized flag football and a Soldier failing to surface while swimming as part of personal PT (the Soldier died four days later). There were two on-duty weapons-handling fatalities, including a Soldier death from a negligent discharge and a Soldier death from friendly fire.

Two fatalities involved parachuting, while two other fatalities involved Soldiers being pinned by falling loads. One Soldier drowned when he fell into a river while on dismounted patrol in Iraq, and a Soldier drowned while participating in recreational swimming activities. Another Soldier was presumed drowned after he fell overboard from a tug during vessel qualification.

AVIATION

The Army lost 12 Soldiers in fiscal 2009 aviation accidents, compared to 14 Soldiers killed the previous year. One-third of the fiscal 2009 fatalities occurred in OIF/OEF. The UH-60 Black Hawk, OH-58D Kiowa Warrior (KW) and AH-64 Apache were involved in these fatal accidents.

As depicted in the chart on page 7, fiscal 2009 Class A and B manned aircraft accidents increased by seven and three, respectively, from fiscal 2008. Class C accident numbers show a substantial decrease from fiscal 2008. However, in accordance with Army Regulation 385-10, units have 90 calendar days to submit their Class C accident reports to the USACR/Safety Center. Therefore, this number will change as more reports are received.

Aviation Accident Areas of Concern

Power management. Power management errors caused four Class A accidents, three in the Black Hawk and one in the KW, and resulted in four Soldier deaths. All occurred in a mountainous environment and involved mission-planning errors. In three of these accidents, the crews did not take the prevailing tail winds into consideration.

Materiel failures/ malfunctions. Three of the fiscal 2009 fatalities occurred in two accidents involving materiel failures: An engine failure in an AH-64D and an uncommanded flight control input of unknown origin that caused a pilot-induced, low-airspeed left pedal turn to become uncontrollable in a UH-60L. Additionally, there were 12 nonfatal accidents caused by definite or suspected materiel failures or malfunctions (five Class A, two Class B and five Class C). In three of the 14 accidents, the crews responded incorrectly to an in-flight materiel failure (two full authority digital electronic control [FADEC] failures and one engine failure), which increased the severity of the accidents.

Wire strikes. There were two Class A wire strikes, both occurring in Iraq at night during night vision goggles (NVG) flight, which resulted in two fatalities.

Inadvertent instrument meteorological conditions (IIMC). One fatal accident in Iraq involved an incorrect response to IIMC. While attempting a nighttime visual meteorological conditions approach, the crew encountered IIMC but did not immediately initiate IIMC recovery procedures and transition to instruments. This delay allowed the pilot on controls to experience spatial disorientation and lose aircraft control, resulting in a destroyed aircraft, one Soldier fatality and 12 injuries.

Maintenance test flight (MTF) autorotational checks. Two Soldiers were fatally injured when their OH-58D(R) impacted the runway during an MTF autorotational check. The maintenance test pilot (MP) failed to ensure the throttle was increased to 100 percent before attempting the power recovery, thereby allowing airspeed and rotor rpm to decrease below that required for sustained flight. A similar accident occurred in which another MP also failed to return the throttle to full power, causing the OH-58D(R) to impact the ground with Class A damage and injuries, but no fatalities.

Emergency procedures training. Eleven accidents occurred during emergency procedures training (one Class A, three Class B and seven Class C). The majority of these accidents involved simulated single-engine failures (seven in single-engine and two in dual-engine aircraft) and two OH-58D(R) FADEC manual throttle operations.

Brownout. There were four brownout accidents: one Class A with no fatalities and three Class B. All occurred in OIF/OEF during landings at night under NVG.

A common thread across the fiscal 2009 aviation accidents was a breakdown in crew coordination, which contributed to 43 percent of the Class A accidents. Examples include crewmembers failing to monitor flight instruments or assist in obstacle clearance and failure of crewmembers to announce decisions or actions that affected the ability of other crewmembers to properly perform their duties (e.g., announce go-around).

MANNED AVIATION ACCIDENTS

SOLDIERS KILLED IN POV ACCIDENTS

Vehicle Type	Fiscal 2009	Fiscal 2008	Increase/ Decrease
Motorcycle	32	51	-19
Sedan	40	44	-4
Other POV	32	30	2
Pedestrian	5	4	1
Totals	109	129	-20

SOLDIERS KILLED IN MOTORCYCLE ACCIDENTS

Motorcycle Type	Fiscal 2009	Fiscal 2008	Increase/ Decrease
Sport	20	37	-17
Cruiser	10	7	+3
Not Reported	2	7	-5
Totals	32	51	-19

OFF-DUTY

There were 121 off-duty accidental fatalities in fiscal 2009, including those related to motorcycles, sedans, other vehicles, pedestrians, PIO, sports and human movement.

PRIVATELY OWNED VEHICLE

Fiscal 2009 ended with 109 off-duty POV Army military fatalities — 20 fewer than the previous year. The reduction in POV fatalities was accounted for largely by the decrease in fatal sport motorcycle accidents.

With many fiscal 2009 accident reports still pending, the USACR/Safety Center does not have a complete list of the causes of these accidents. However, current data indicate indiscipline to be among the leading causes of fatal POV accidents. When Soldiers know what's right but willfully choose an alternate course of action, we call that choice "indiscipline." Indiscipline can take many forms, including speeding, failure to wear a helmet or seat belt and driving under the influence.

Motorcycles

Speeding was involved in 17 motorcycle fatalities in fiscal 2009. Of these, 12 Soldiers were riding sport motorcycles, four were riding cruisers and one was on an unidentified motorcycle type. Failure to wear helmets contributed to the deaths of four riders — two on sport motorcycles and two on cruisers. Leaders comprised the largest portion of fatal motorcycle accidents in fiscal 2009, with 73 percent of the victims between the ranks of E5-O2.

Sedans

In fiscal 2009, 40 Soldiers were killed in sedan accidents, a reduction of four fatalities from fiscal 2008. Again, indiscipline appears to be a leading cause in these accidents. Sixteen Soldiers were killed in accidents involving excessive speed. Although wearing a seat belt is a proven method for reducing fatalities in POV crashes, many Soldiers still choose not to buckle up. In fiscal 2009, 12 Soldiers killed in sedan accidents were not wearing seat belts.

Other POV

Other POVs include all-terrain vehicles, bicycles, Jeeps/SUVs/utility vehicles, station wagons, trucks and vans. In fiscal 2009, 32 Soldiers were killed in other POV accidents, two more than in the previous year.

Indiscipline figured prominently in these losses as well. As with sedan and motorcycle fatalities, speed was a leading cause of the fiscal 2009 other POV fatal accidents. Ten Soldiers were killed in accidents where excessive speed was involved. Failure to wear seat belts was also a factor in several of the fiscal 2009 accidents. Of the 32 Soldiers who were killed, 10 were not wearing seat belts.

Pedestrian

Five Soldiers were killed as pedestrians in fiscal 2009, an increase of one over fiscal 2008. Three of the five Soldiers died while attempting to cross multi-lane highways.

Personnel Injury-Other

Off-duty PIO accidents in fiscal 2009 resulted in the deaths of 12 Soldiers. This is a significant decrease from fiscal 2008, when 22 Soldiers were killed.

Three of the fiscal 2009 Soldier fatalities resulted from water-related activities, including a Soldier who drowned when his raft overturned, a Soldier who drowned while swimming in a lake and a Soldier who died from hypothermia after falling into a river.

Three Soldiers died from the negligent discharge of personal weapons, which included a rifle, shotgun and handgun. Two Soldiers died in parachuting accidents, one in a recreational skydiving class and the other while BASE (buildings, antennas, spans and earth) jumping. A Soldier was killed when he fell from a barracks window; a Soldier died from carbon monoxide poisoning inside his residence; a Soldier died when he walked through a glass door, severing an artery in his arm; and a Soldier died after he was struck by a tree that was being cut down.

CONCLUSION

While the Army closed fiscal 2009 with an overall 16-percent decrease in Soldier fatalities, there is still much that can be done to prevent off-duty losses, which accounted for 70 percent of the total accidental fatalities. The many on-duty safety programs and policies that protect our Soldiers, in both combat and in garrison (on-duty), have to be applied in our approach to off-duty safety.

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 their responsibility and mission. Composite risk management should be inherent in every decision and Leaders must remain vigilant to protect against risk and prevent accidents to preserve our force.

We must also remember that our Band of Brothers and Sisters does not dissolve when the duty 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. Likewise, our Families have a strong influence over their Soldiers, especially during off-duty time. Families, friends and peers are our Soldier's off-duty battle buddies and have the responsibility to remain watchful of the increased hazards associated with off-duty activities.

We all must embrace Army safety and use the tools, programs and lessons learned to protect our most vital resource — our Soldiers — both on and off duty in combat or home station and off-duty with Family and friends. Our Army simply cannot afford to give accidents the opportunity to strike again; we must remain vigilant about safety and apply composite risk management to all our daily activities, both on and off the battlefield. Safety begins with awareness and we can never "give safety the day off." «

Editor's note: At the time this article was written, information on accidental fatalities experienced during this time frame was still filtering in to the U.S. Army Combat Readiness/Safety Center to be entered into the database, so the statistics and findings may change in the coming months.

WHAT DO YOU THINK?

From January through March, KNOWLEDGE magazine is conducting a survey to determine whether we're meeting our readers' needs. Please help us out by taking a couple of minutes to answer a few simple questions at https://safety.army.mil/.

After all, this is your magazine. Shouldn't it contain the information you find helpful?

Keeping Soldiers in the Fight

1ST LT. BRANDON PHILLIPS
AND 1ST LT. JARED HOFFMAN
Forward Support Company, 84th Engineer Battalion,
130th Engineer Brigade
Afghanistan

The gunner's restraint system (GRS) is often looked at by many Soldiers as just another type of seat belt restraint. However, our unit's combat experiences have shown just how important this system is. The GRS secures gunners in their vehicles, preventing them from being thrown out in the event of a rollover or the detonation of an improvised explosive device (IED). Two different incidents during our deployment illustrate this point.

A Tale of Two Rollovers

During a combat logistical patrol, the trail vehicle in a convoy experienced a rollover while trying to avoid an obstacle at high speed. The driver overcompensated while attempting to regain control of his Mine Resistant Ambush Protected (MRAP) vehicle, and the gunner was ejected from his turret. The gunner's back was fractured in several places and nearly every bone in both arms was shattered. His injuries could have been limited had he been wearing his GRS. Thankfully, this Soldier survived and is making a steady, albeit lengthy, recovery stateside.

A closer investigation of the events leading to the rollover indicated that Leaders within the convoy failed to adequately inspect all vehicle gunners before departure. In this case, Leaders failed their Soldiers by not mitigating a potential risk involved in their mission. A simple check that only takes a matter of seconds could have prevented this Soldier's substantial injuries.

On a later mission along the same main supply route, an MRAP was involved in a crush-wire IED detonation that caused minor damage to the hull and destroyed a rear tire. The driver was unable to maintain control of the vehicle because of the blown tire and, subsequently, the MRAP overturned. Fortunately, this gunner was wearing his GRS. Although he suffered injuries, they were not as severe as in the previous rollover incident. This time, Leaders adequately inspected each gunner for their GRS before the start of their mission. The key Leader's attentiveness may very well have saved the life of this Soldier or, at the very least, prevented more significant injuries.

As these cases illustrate, Leaders cannot afford to overlook even the smallest ways to mitigate risks and keep their Soldiers safe. There are far too many ways to become a casualty in a combat zone. We have the best training and equipment in the world, but all of that becomes null and void when leadership fails their Soldiers. So do what's right — identify risks, mitigate them to the lowest level and safeguard your Soldiers. We owe it to them.

> "Both **GARRISON** and **DEPLOYED MISSIONS** require a **CONSTANT REVIEW** of **RISKS** and developing **WAYS** to **MITIGATE** them."

Leaders are the Vital Key

Safety is one of the most important considerations Leaders must look at when planning and executing missions. Both garrison and deployed missions require a constant review of risks and developing ways to mitigate them. As a Leader in a deployed area of responsibility, there are scores of risks to take into account. Small-arms fire, IEDs, low-hanging wires, scorching temperatures and vehicle rollovers are just a handful of the risks Soldiers face downrange.

Thankfully, the equipment and resources available to Soldiers today are the best they have ever been. Items such as fire-retardant clothing, ballistic eye protection and state-of-the-art body armor have increased the level of protection for troops by leaps and bounds in recent years. In addition, MRAP vehicles protect troops with their thick armor hulls. They also possess enhanced optical devices that allow the quick and accurate identification of possible threats.

However, advances in protective equipment and technology can only take us so far. Leaders at all levels can mitigate risk and ensure the safety of their Soldiers by conducting proper pre-combat checks and pre-combat inspections. Noncommissioned officers (NCOs) are the start point for this vital process. It should be the first-line supervisor, normally a sergeant or staff sergeant, who checks each Soldier to ensure they have all the pieces of gear and equipment required for their mission.

In our unit, when the Soldier's first-line supervisor verifies they have all the proper equipment, that NCO signs a checklist indicating the check was performed accurately. Senior Leaders can then conduct random spot checks of the personnel involved in the mission and take note of any deficiencies that could affect the mission. Even when high-ranking "guests" are along, the convoy leadership must make it a priority to inspect their equipment, as well. No Soldier is above this standard.

Aside from the individual Soldier and his equipment, combat vehicles must also be inspected with the same vigor. Vehicle operators and Leaders need to perform preventive maintenance checks and services, as well as inspect the multitude of new equipment found in the field today. Electronic warfare devices, objective gunner protection kits and other new devices must be a part of this process. As we related in the first half of this article, we know how important this is because of our experiences with the GRS. Properly used, the GRS and risk mitigation have proved to be a vital component in our unit's effort to enforce safety.

Troops In, Brown Out

CHIEF WARRANT OFFICER 2 KENNETH G. MCALISTER
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1st Air Combat Brigade, 1st Cavalry Division
Fort Hood, Texas

It was a cool November night. The mission called for an air assault insertion into a small village just north of Baghdad, Iraq. Although we were both pilots in command (PC), I was the air mission commander for this particular flight. It was our commander's practice to put two PCs in the lead aircraft, whenever possible, to lessen the workload of flight lead.

We took off from Taji shortly after 2300. The flight was not a long one, six minutes at the most. We soon picked up our landing direction, due north, and hit our release point. The AH-64 gunships (Chalk 2) for our close air support called our landing zone (LZ) "ice," a term used to indicate the LZ was free of hostile activity. We slowed to 70 knots indicated airspeed (KIAS) and performed our before-landing checks. I was on the controls and the PC was navigating and calling out airspeeds, altitude and distance to set up for a time-on-target landing. The LZ was small and situated in the middle of a small town surrounded on three sides by buildings and many small sets of wires.

The LZ was on a road that ran north to south, just north of an intersection with a berm on the east side parallel to it. I began our landing just after flying over the large set of wires along the intersecting road, but had to extend because of another set of wires that were on short final. I had accomplished plenty of brownout landings before; however, nothing — not even training in Kuwait — could have prepared me for this.

The brownout landing started out like any other landing, but it quickly got worse. I lost all visual references; nonetheless, I continued to hover until I couldn't stand it any longer. I knew the ground was there and I knew I would eventually land. My thoughts were that if I had to complete a go-around, the bad guy would get away. I couldn't stand not being able to see anything. I announced that I was totally brownout.

The PC quickly took the controls and told me he could still see a building on his side of the aircraft. He completed the landing with me guarding the controls. Chalk 2 never made it even close to landing in their LZ, which was 50 to 60 meters away at another road intersection. They completed a go-around and landed back at the original takeoff point. We inserted our troops and headed back to Taji, which was less than five miles away, to wait for the extraction call.

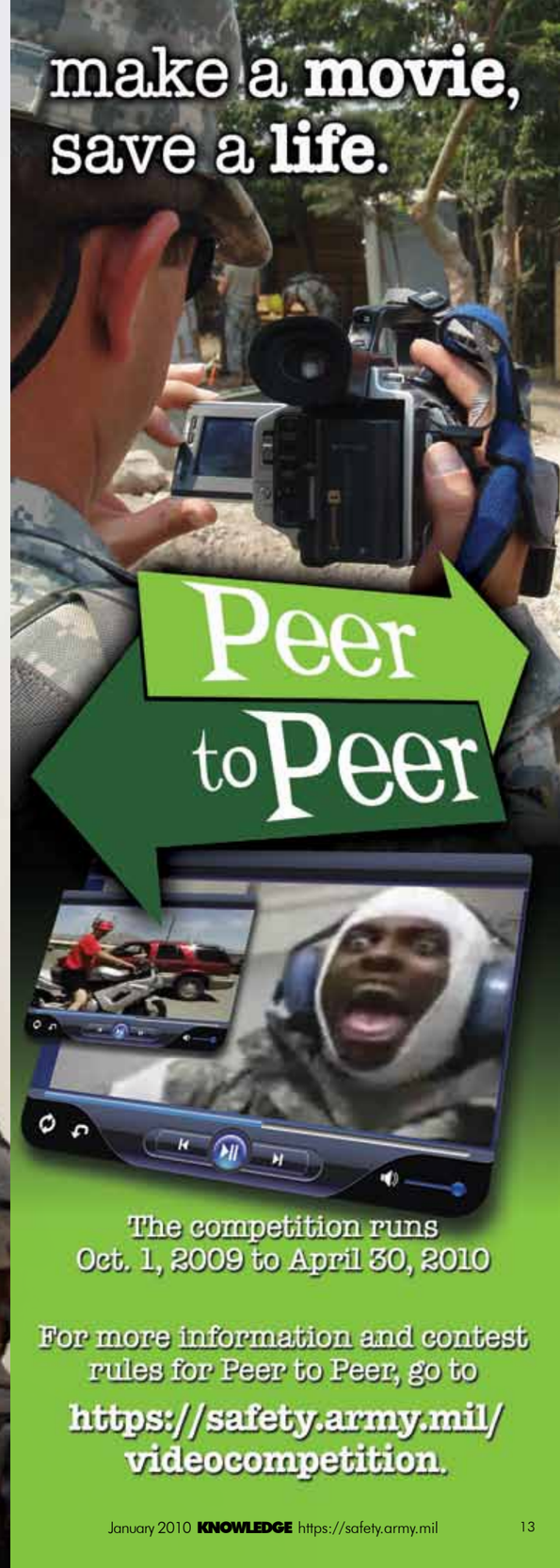
Our flight got the call for extraction just after midnight. We didn't need a route and we didn't have a timeline. We had a pickup zone (PZ) with a landing direction and it happened to be on the same road as the original LZ. We picked up our landing direction again, hit our release point and called the troops on the ground.

I transferred the controls after slowing to 70 KIAS. I told the PC that he should probably land since he had a visual reference during the last landing. After a three-way positive transfer of the flight controls, I called out airspeed, altitude and distance to the PZ. The PC gave the "bounce" call to the flight and began landing. This time, he lost visual cues and I didn't. In fact, I saw the ground getting closer to us through the chin bubble after we initially touched down. I shouted that we were rolling right and put my hand on the cyclic control to move it to the left to level us out. This put the left main landing gear on the ground. After he reduced the collective, the PC transferred the flight controls back to me and monitored the loading of our passengers.

Chalk 2, flown by our commander and a platoon leader, again failed to land on the first try. They did a go-around to our right and launched flares in the process, which started a fire in the field to the east. We again took off to the north and met our sister ship after their pickup.

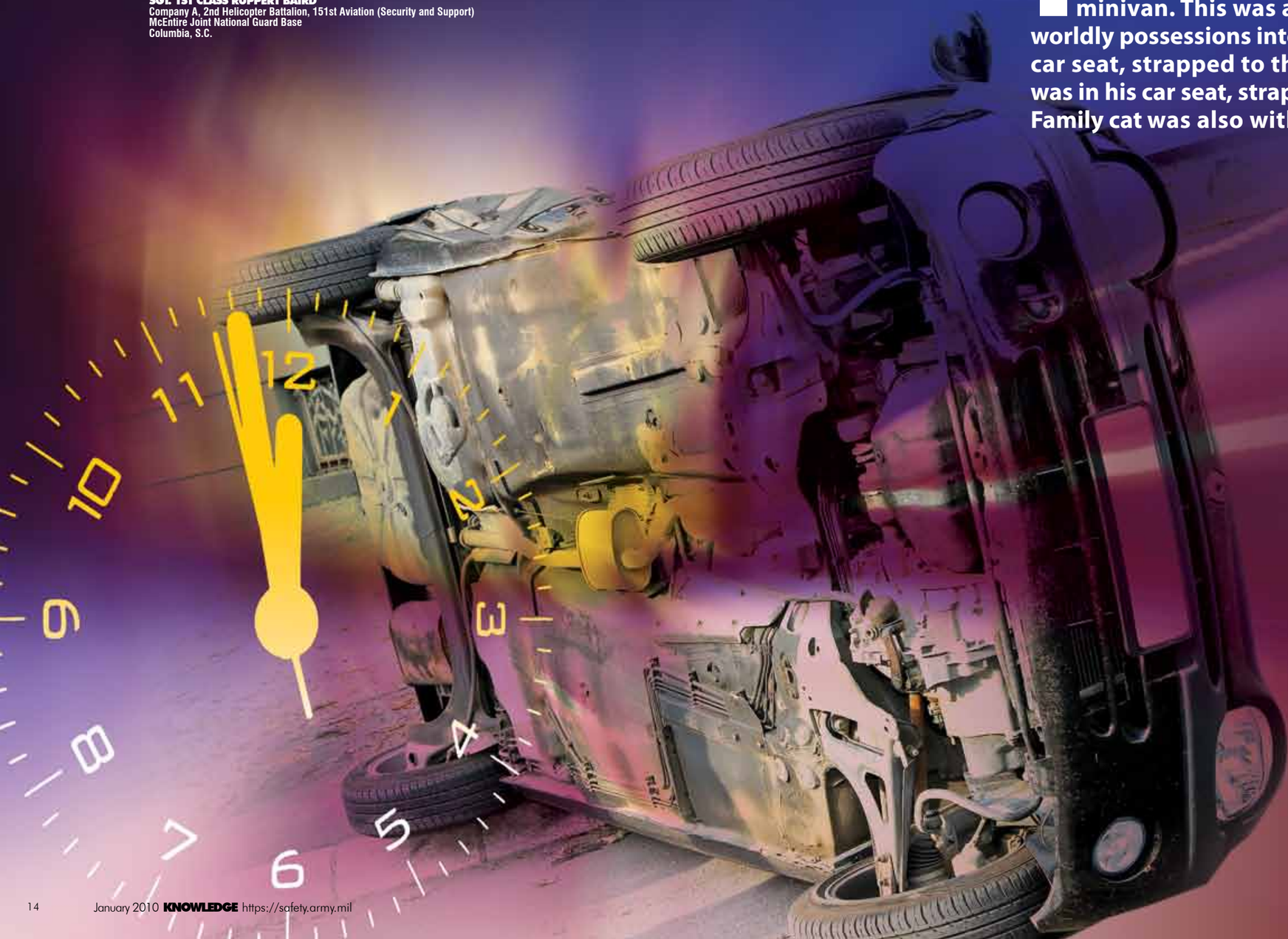
This whole ordeal reveals how hastily planned air assault missions into unknown areas can be extremely hazardous. This situation also illustrates how good crew mix can mitigate hazards to an acceptable level. As for the marginal crew mix of the other aircraft, that's a whole other story.

Oh, yeah, we got the bad guy too!



Smashed, Trashed and Stranded on the Road

SGT. 1ST CLASS RUPPERT BAIRD
Company A, 2nd Helicopter Battalion, 151st Aviation (Security and Support)
McEntire Joint National Guard Base
Columbia, S.C.



It was just before New Year's and I was leaving Fort Lewis, Wash., to move my Family back to South Carolina. I was coming off active duty and had rented a twin-axle trailer and installed a hitch on my minivan. This was a do-it-yourself move and we'd loaded all our worldly possessions into the trailer. Our 4-year-old daughter was in her car seat, strapped to the front passenger seat, and our 2-year-old son was in his car seat, strapped to the rear bench seat next to my wife. The Family cat was also with us as we left a few minutes before midnight.

I was anxious as we pulled out of Tacoma, Wash., and headed east toward Snoqualmie Pass and the Cascade Mountains. As we made our way through the pass, we encountered gusting winds that rocked the van and trailer. I slowed down to ensure I kept full control. After we got through the pass, the winds died down. We merged onto Interstate 82 and I settled in for a night of driving.

One of the strange anomalies of the interstate system is a loop on I-82 in southeastern Washington. I planned to bypass this loop by going through Prosser, Wash., on State Highway 221 and reentering I-82 just north of Umatilla, Ore. Mind you, this was before Google Maps and MapQuest, so the only thing I had was a map. It seemed logical to me that this would be a safe, well-traveled route.

As we pulled through Prosser, I recognized the dangers posed by the ice, snow and wind and drove at or below the speed limit. I then began climbing into Horse Heaven Hills.

As I drove, I saw a warning sign for a 90-degree right turn and a 25-mph speed limit. I slowed, feeling sure I would be fine at 20 mph; however, the black ice didn't agree. As I eased around the turn, I felt the trailer rock. Thinking I had encountered winds again, I decelerated. That was a mistake. Even though the van made the corner, the trailer began sliding on the ice. Before I knew what happened, the van and trailer jackknifed and I was out of control. I tried steering into the direction of the skid, but to no avail. All I could do was hold on as my van was pushed diagonally across the road and into the oncoming lane. Fortunately, there were no other drivers on the road.

I watched helplessly as the van's passenger door struck a road sign, shattering glass all over my daughter and into the van. My wife had been sleeping on the van's floor and woke up just in time to feel the wheels come off the pavement as we encountered soft dirt on the roadside. We felt the van tilt and roll over at least twice before landing on its right side.

My daughter and son were screaming. I reached down from my now-elevated seat, brushed the glass shards off my daughter and found her unhurt. I then looked to the rear to check on my wife and son. He was firmly strapped into his car seat while my wife was sitting cross-legged on the interior right side of the van. Although stunned, she was amazingly calm. I repeatedly asked her if she and our son were all right. Incredibly, they were.

I looked forward and was surprised the van's engine, headlights, radio and heater were still functioning perfectly. I took a breath, shut off the van and smelled for gasoline. Fortunately, I didn't smell any fumes. Nevertheless, I decided we needed to exit the van immediately. I removed my seat belt, carefully pushed open the driver-side door, pulled myself out of the van and had my wife hand our children up to me. Then I helped my wife out of the van. A carload of boys rolled up to the accident scene. They helped me move my wife and kids off the side of the van and placed them inside their warm car while I assessed the situation.

The rear hatch and the left-rear portion of the van's body and roof were caved in. The trailer had stayed connected to the hitch and rolled over with us as we overturned in the minivan. The trailer doors had popped open, scattering many of our belongings, and our cat was gone. I returned over the next few days, but I never found him. The people of Prosser were incredible and took excellent care of us during our six-day stay.

The van and the trailer were totaled. We ended up driving home in the largest rental truck U-Haul had — the only one that fit a Family of four. We spent all of our travel money and maxed-out our credit card. Thankfully, the only injury was a bruise to my wife's shoulder. The rest of our trip home was uneventful.

I've always been impatient to get on the road. On this journey, I let that get in the way of proper trip planning and risk assessment. I'd rented a trailer that was too large for my minivan. And, while I was aware of the black ice danger on the roads, I assumed my two years of winter driving had adequately prepared me for it. Unfortunately, an unfamiliar road, an extra-heavy load and a typical "GI" effort to save money proved to be my downfall.

Clearly, I should have hired a professional moving company. Also, I should have waited until the morning to leave, when much of the ice would have been melted. I also should have ensured everyone in the van remained properly buckled in.

The good thing about lessons learned is that you get the opportunity to avoid repeating your mistakes. Back then, online tools like the U.S. Army Combat Readiness/Safety Center's Travel Risk Planning System (TRiPS) didn't exist. Now that they do, I — as a full-time National Guardsman — use them. It sure beats being smashed, trashed and stranded on the road.

FYI

If you're new to towing with your POV, visit the following link: https://safety.army.mil/ and type "towing safety" in the search window.

Behold the Cold

SGT. 1ST CLASS STEVEN DECKER
Northern Warfare Training Center
Fort Wainwright, Alaska

Do you want to know the secret to staying warm? Don't get cold.

At the beginning of a winter training course here at the Northern Warfare Training Center (NWTC) at Fort Wainwright, Alaska, I'll occasionally pose that question to a group of Soldiers. Some look disappointed when I tell them the answer, but others get it right away and their whole outlook on winter training changes in an instant. By the end of the course, most of them understand the simplicity of this complex and often daunting task.

Fort Wainwright is probably the coldest post in the U.S. military. During the winter months, the temperatures regularly drop to minus 20 F or below for weeks at a time. We teach units in U.S. Army Alaska (USARAK) and, to a smaller degree, other military personnel how to operate in a cold, snow-covered, mountainous area. We train about 500 students a year who then go back and become the trainers for their respective units. The following are some of the training tips we pass down to Soldiers.

Fuel Your Body

The first step to staying warm in a cold environment is to properly fuel your body. Depending on your exertion level, Soldiers should consume between 4,500 and 6,000 calories and three-and-a-half to five quarts of water per day. Light infantrymen will require the upper end of that scale, while someone who works in the tactical operations center will be on the lower end.

Meals, Ready to Eat (MREs) provide about 1,400 calories per menu, so four per day will usually do the job. Meals, Cold Weather (MCW) provide about 1,700 per meal. However, palatability is a challenge. MCWs require rehydration for the main meal component. This is best accomplished with boiling water. You can mix cold water with MCWs, but it will take longer to rehydrate and the food won't taste as pleasant.

An MRE can be used even after being frozen, but it must not be refrozen. The main components of the meal can be placed inside clothing for an hour or so to thaw or even in a sleeping bag overnight for a "warmish" breakfast. The other part of the meal, "grazing foods," should be eaten between meals to refuel your body. Remember, a near constant calorie intake is vital to staying warm.

Cover Your Body

Clothing should do three things: insulate, ventilate and provide protection from the wind. The older Extreme Cold Weather Clothing System (ECWCS) and new seven-layer Generation III ECWCS both do this very well. The challenge is figuring out what to do with all that clothing.

The most important measure to take with any clothing system is to layer. Start out with the lightest polypropylene underwear and build from there. The layers then must be protected by a shell. The ECWCS Gore-Tex pants/jacket combo is an excellent all-round choice. The soft-shell pants/jacket from the seven-layer system works best in high-aerobic activities in very cold conditions. A complete class on the proper use of the seven-layer system and ECWCS is available for download at http://www.wainwright.army.mil/nwtc/slides.html.

Heat management is a constant challenge when operating in cold weather. Knowing when to dump or hold heat is the key. I watch students after the 10-kilometer snowshoe march and quite a few will be dripping with sweat at the finish. They invariably say, "I just wanted to get it over with." I counter with, "What would you do if you were forced to stay outside for another five or so hours?" They usually don't have an answer.

Soldiers must ventilate before it is needed and reduce insulation before a movement or exertion. The big, puffy suit in the seven-layer system is meant to be put on while static and put away when moving. Likewise, that fleece jacket may be soft and cuddly and quite the fashion accessory around post, but you really don't need to wear it on a good, long dismounted movement. If at all possible, have dry layers available to replace or upgrade clothing if needed.

Move Your Body

Cold weather requires people to be proactive. If your fingers become cold, windmill your arms to force blood into the fingertips. Cold toes? Wiggle them or swing your legs. Shivering? Exercise a little. The point is to not allow cold to gain ground in your body.

Observe the other people around you, looking beyond the obvious. We know what is wrong with the Soldier who is shivering and twitching on the ground or has a white patch on his nose. The Soldier who escapes our attention is the one who stands perfectly still with his head drawn down between his shoulders and his arms hanging stiffly at his sides. He grumbles at tiny issues, mumbles when addressed, fumbles when handling simple tasks and stumbles when walking on easy ground. This Soldier needs help now; but just as important, look for the symptoms of cold weather injury in yourself.

At the NWTC, the cadre not only trains in the cold, they enjoy the weather. Winter doesn't have to be a time of fear and loathing. Embrace the cold — but be smart about it.

+ INEXPERIENCE
INEFFECTIVE CREW COORDINATION
= DISASTER

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

The makeup of an aircrew can be an important factor in crew coordination errors. Let's examine an accident scenario involving an OH-58D maintenance test flight (MTF). We'll look at what happened, what should have happened and what we can learn from the experience.

The mission was to conduct preventive phase maintenance (PPM), which included an autorotational RPM check. The weather was agreeable, the preflight looked good and, on the surface, the crew mix seemed right for the mission. The maintenance examiner (ME) had more than 1,000 hours in the OH-58D and the pilot (PI) had almost 300 hours of flight time in the aircraft.

What Happened?

It was a typical day. The crew met in the morning to ensure the aircraft would be ready for the MTF. They had lunch later that day with other members of the unit. That afternoon, the crew received the weather briefing and, shortly thereafter, departed for the maintenance test flight area (MTFA) to conduct the PPM.

The ME sat in the right seat and the PI in the left seat. After the majority of the MTF had been conducted in the MTFA, the crew planned to complete the autorotational RPM check in the traffic pattern upon return to the airfield. On their way back from the MTFA, tower informed them that the winds had shifted and for them to use the active runway. The ME requested to remain west of the airfield to avoid a fog layer and enter left, downwind from the west. The tower approved the request and, a few minutes later, the ME requested an altitude deviation to 2,000 feet mean sea level (MSL) to conduct the autorotational RPM check. The tower approved the request and, on final approach, the aircraft entered an autorotational descent to the active runway.

During the maneuver, the ME allowed the airspeed and rotor RPM

to decrease to a level that did not allow for sustained flight. The aircraft failed to recover from the autorotative descent and crashed on the runway, destroying the aircraft and fatally injuring the two crewmembers.

What Went Wrong?

The circumstances indicate the crew failed to properly scan the aircraft's flight instruments while performing an autorotational RPM check. The ME allowed the airspeed to decrease below what is required for a steady state autorotation. As the airspeed decayed, the rate of descent increased.

When the aircraft dropped below 400 feet above ground level (AGL), the ME realized the throttle was still at idle and attempted to recover the aircraft. Unfortunately, there was insufficient time or altitude to allow the engine to spool the rotor system back to 100 percent and arrest the descent.

What Should Have Happened?

According to the MTF manual for the OH-58D, Technical Manual 1-1520-248-MTF, the pilot should have performed the following for an autorotation RPM check:

WARNING: If autorotation RPM cannot be maintained in the normal operating range, terminate the test flight. Select an altitude that will allow a power recovery climb to be accomplished by 500 feet above ground level (AGL).

NOTE: Ensure ENG ANTI-ICE and HTR switches are OFF. MTF mission gross weight is 4,500 pounds. Nr (rotor speed) should be stabilized at 100 percent ±2 percent at the selected baseline density altitude (DA) for your operating area. Nr will increase/decrease approximately 1 percent for every 1,000-foot increase/decrease in DA and/or 100-pound increase/decrease in gross weight.

(1) While maintaining 55 ±5 knots indicated airspeed (KIAS) and aircraft in trim, lower collective to the full down position when a safe touchdown area can be reached.

(2) RPM: Confirm within limits.

(3) Throttle: Reduce to idle; confirm clutch disengagement and that engine gas generator speed (Ng) is stabilized at 63 to 65 percent. Check mast torque/engine torque are at or near zero percent.

(4) Aircraft: Check pedals for sufficient right pedal remaining and cyclic for normal position; note any marked increase or decrease in vibrations and/or unusual noises.

(5) Nr: Record with aircraft stabilized at 55 ±5 KIAS and in trim.

(6) Power recovery: Perform. Climb will be accomplished by 500 feet AGL. During power application, confirm clutch engagement. Maintain airspeed above 50 KIAS on climbout.

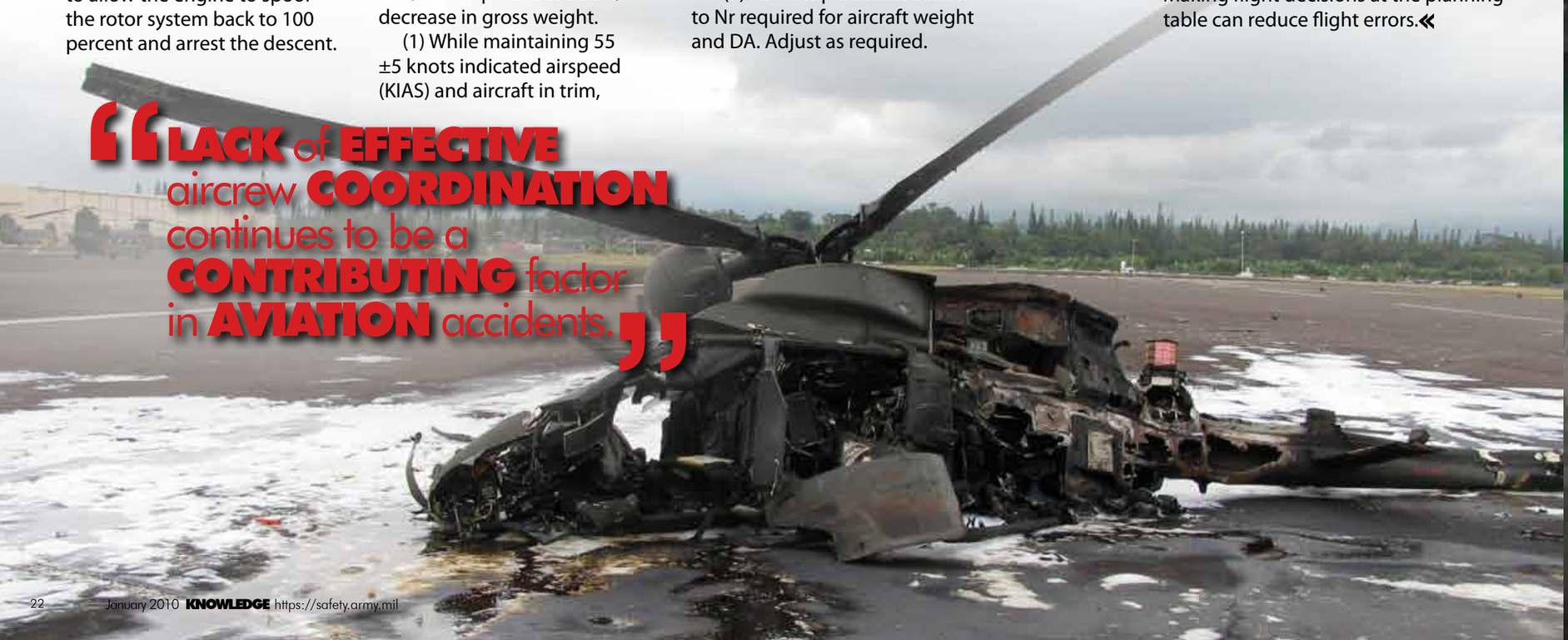
(7) Nr: Compare recorded Nr to Nr required for aircraft weight and DA. Adjust as required.

Lessons Learned

There are lessons learned from this accident scenario. First, selecting the right crew mix is extremely important in accomplishing the mission safely. Leaders must have oversight of the flight schedule and risk assessment matrix to ensure the risk is, in fact, low and includes the proper crew mix to alleviate overconfidence. Risk assessments are tools to help leadership make smart, informed decisions.

The second lesson learned is twofold: a breakdown in crew coordination and ineffective crew briefs. Lack of effective aircrew coordination continues to be a contributing factor in aviation accidents. Aircrew coordination discipline begins with the entire crew acting as a team in mission planning, execution and after-action reviews.

During crew briefs, it is essential to discuss the duties and responsibilities of all aircrew members beforehand, including alternate plans/actions should unexpected circumstances occur. Making flight decisions at the planning table can reduce flight errors.



"LACK of EFFECTIVE aircrew COORDINATION continues to be a CONTRIBUTING factor in AVIATION accidents."

SLOW CONNECTION?
LIGHTEN UP!

U.S. ARMY COMBAT READINESS/SAFETY CENTER

https://safety.army.mil/lite

The Safety Center's home page is now available in a lite capacity to allow forward-deployed Soldiers with limited Internet connectivity access to the risk mitigation tools and resources they need.

RICHARD FENNER
43rd Sustainment Brigade
Fort Carson, Colo.

Get to Know Your Manuals

Technical manuals (TMs) are designed to ensure Soldiers and civilian personnel follow the proper procedures and heed safety warnings when operating equipment. Furthermore, Army Regulation (AR) 385-10 and the unit safety program provide additional guidance on procedures units should adhere to when conducting assigned missions or tasks. Unfortunately, personnel sometimes fail to follow this guidance and are seriously injured or killed.

Units are mandated to have the appropriate TMs on hand for each piece of equipment within their respective unit and for each mission. Sometimes, however, personnel view a task as so routine that they choose to do it from memory rather than use the TM. These folks might even question why we use TMs in the first place. Well, the answer to that question is simple: it's because you can't memorize all the step-by-step procedures and safety warnings in them. For the Soldier mentioned in the following accident sequence, reading the TM would have saved him a world of pain.

> "**SOLDIERS** also must be **PROPERLY** trained and **READ** the equipment's **TM** before **STARTING** any **TASK** or mission, no matter how **ROUTINE** or **SMALL** it may **SEEM.**"

The Accident

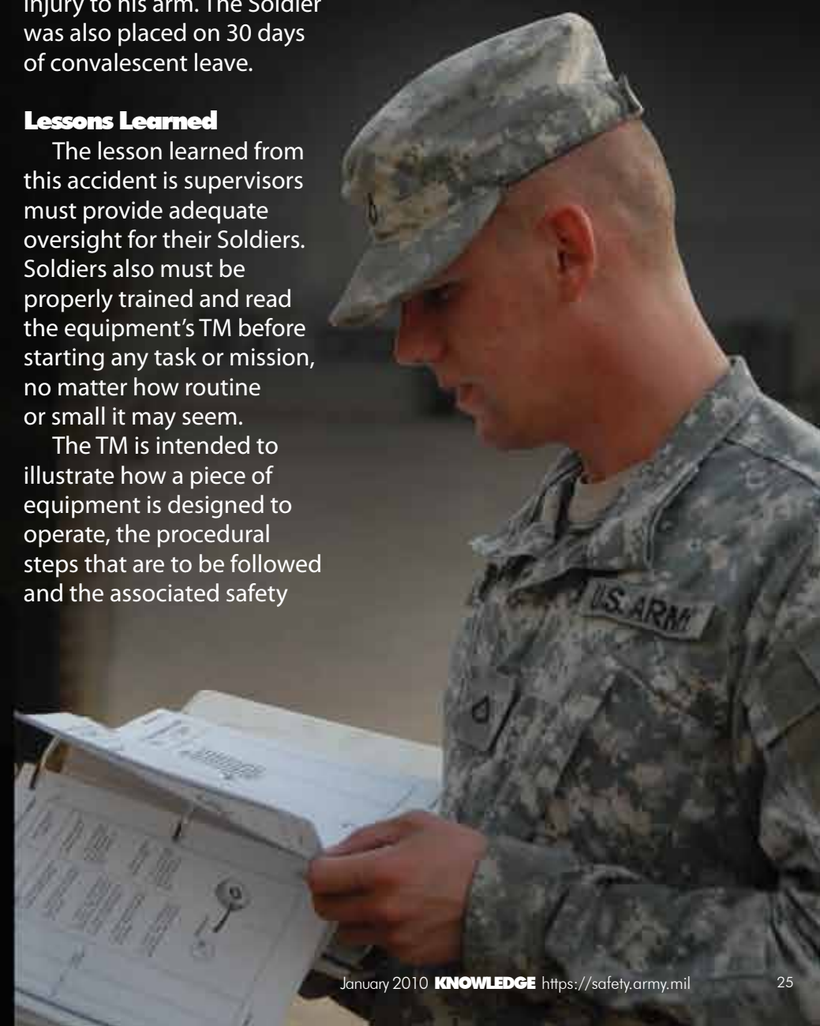
One afternoon, a group of 88M (motor transport operator) Soldiers were given a standard routine task: conduct routine maintenance on M3 Container Roll In/Out Platforms (CROPs). A Soldier who was untrained and had very little experience was removing one of the two retaining pins that held a critical piece of the equipment in place. Neither the supervisor nor the Soldier had read the TM, which revealed that this procedure involved using a lifting device such as a crane.

As the Soldier removed the last pin, the 370-pound CROP arch fell onto his right arm. Other Soldiers in the immediate area quickly rendered first aid while another Soldier summoned a noncommissioned officer to the scene. The injured Soldier was transported to a hospital, where he underwent several surgeries to fix the injury to his arm. The Soldier was also placed on 30 days of convalescent leave.

Lessons Learned

The lesson learned from this accident is supervisors must provide adequate oversight for their Soldiers. Soldiers also must be properly trained and read the equipment's TM before starting any task or mission, no matter how routine or small it may seem.

The TM is intended to illustrate how a piece of equipment is designed to operate, the procedural steps that are to be followed and the associated safety and warning hazards. Never become complacent and deviate from following the standard practical procedure of reading an equipment TM. It might just save your life, your Soldiers' lives or prevent injury to others around you.



Cheating Death

CHIEF WARRANT OFFICER 2 HERBERT W. STOVER IV
A Company, 2nd Battalion, 224th Aviation Regiment
Virginia Army National Guard
Sandston, Va.

While most Soldiers, Sailors, Marines and Airmen concentrate on the insurgent enemy in Iraq, Army aviation faces a unique enemy not associated with any political faction. That foe is deteriorating weather conditions. In the following case, encountering instrument meteorological conditions inadvertently endangered the lives of all onboard four aircraft.

As with every mission, we ran through our checklists, paying particular attention to the weather. We requested current and forecast weather conditions from several different agencies. While in Iraq, we noticed most weather reports were skewed or, as the pilots sensed, deceptive.

Our minimum requirements for night flying were a 1,000-foot ceiling and three statute miles visibility. Every night that we checked the weather, the current condition reports and forecasts were inaccurate. Weather professionals weren't always accurate at home station either. In fact, they were wrong a lot too. However, in Iraq, we wondered if there was command pressure to not report below the legal limits, forcing aircrews to launch and fly the missions.

This particular time, we checked weather and, you guessed it, the current conditions and forecasts all said we would experience visibility no less than three miles — right at our minimum to fly — through expected time of arrival (ETA) plus one hour. Our instincts and the cloudy skies we'd seen on our way in to work told us to consult the satellite imagery on the Internet to see what was brewing in the area. We saw large swirls of thick clouds moving our way, but the forecasts and current conditions issued by the weather agencies cited nothing but clear weather for the night … at least "clear" as defined by the three-mile visibility requirement extending through our ETA by at least an hour.

At the preflight briefing, the briefing officer started with, "This is a lie, but I'll read it to you anyway," and then read the official weather forecast. We requested a more detailed forecast, specifically asking about the activity we were seeing on the satellite. Again, we were told weather was not going to be a factor during our flight period. We reviewed our flight route and, to mitigate our perceived risk, planned weather checks at specific points during the flight. Then, we took off on the mission.

The first leg left us with no doubt that the weather was acceptable to make the next leg of the trip. We continued heading east into Baghdad, flying away from our suspected foul weather coming in from the southeast. As we continued the mission, we began to see lightning flashes through our night vision goggles (NVG). While they were not visible to the naked eye, they were close enough that we requested weather updates over the radio before our planned weather checkpoints farther to the east.

The controlling agency over Baghdad gave a legal visibility report and made no mention of lightning or impending storms. "Let's hurry up because something is brewing and these bastards aren't admitting it," the pilot in command (PC) called over the radio to the other aircraft as we made our cargo drop and pickup in Baghdad.

We took off and asked the controlling agency for a weather update. Again, we were told nothing significant. The passengers had no idea what was transpiring in the cockpit or in the air around them. They trusted us to keep them safe and do the right thing; however, the system was failing.

Suddenly, lightning struck just to the east of our location. By our estimation, it was about five miles away. We called the controlling agency and reported the adverse weather we were

> "If **CREWS** don't **PERFORM** composite **RISK MANAGEMENT** and double-check **WEATHER INFORMATION** from several different **SOURCES**, then Army **AVIATION** will have more **INCIDENTS** like this."

experiencing. This was the first true weather update the system received, which was then reported to other aircraft. Knowing there were several aircraft sorties in the sky between Al Taqaddum (TQ) and Baghdad, we felt the need to correct the forecast weather reports with pilot-observed updates called PIREPS. We joked in the cockpit that our reports wouldn't be communicated to the other flight crews.

We flew west, heading back to TQ, thinking the weather was behind us to the east over Baghdad. However, our goggles suddenly picked up lightning in front of us to the west. As the pilot not on the controls, I announced the conditions and took off my NVG to see if the lightning was visible with the naked eye. It wasn't.

Halfway back to TQ, heading west, we changed controlling agencies and requested a weather update from Fallujah. The update went something like this, although I'm not 100 percent certain about the ceiling height, though it was way above our minimum of 1,000 feet:

"Winds from the south at five knots, visibility five miles with a ceiling of 20,000 feet."

The PC broke squelch and asked Fallujah, "What about any reporting of thunderstorms?"

Fallujah replied with, "Nothing has been reported within 40 nautical miles, sir."

Over the intercom, the PC asked, "Am I crazy? Doesn't that lightning look closer than 40 miles away?" Then, keying the radio to the Fallujah controller, he said, "Well, I'm not sure what your source for weather is, but it's wrong. And if you'd step outside and look, you would see there is lightning within 40 miles of here. Thanks for the update. We're on our way to TQ."

With that bitter exchange, we continued to the west thinking the worst of the weather was behind us, until we noticed the visibility dropping. TQ is only a 15-minute flight from Fallujah. Five minutes west of Fallujah, the visibility dropped to less than three miles. We began preparations for landing when the visibility dropped to almost nothing. The runway was less than four miles from our position and we couldn't see it. Each station in the aircraft announced visibility less than a half-mile.

This is when we began to sweat profusely. We went into survival mode, relying on our training and gut instincts to communicate and take actions quickly, with no time for review.

I keyed the microphone to check on the second aircraft at our six. Its crew replied they could still see us. I talked to TQ tower faster than they could talk back. Three miles out from landing, we declared ourselves en route to the airfield but then pulled a 180-degree turn for fear of other aircraft in the airspace.

"Return to Fallujah," we radioed the second aircraft. They acknowledged and followed. We called TQ tower, telling them we were outbound, heading back west, with visibility of a quarter-mile. Another aircraft came over the radio approaching TQ from the northeast, where they reported visibility as unlimited. Our response was to turn in the direction of the "unlimited" visibility. I entered a point just north of TQ into the global positioning system and called the tower for permission to change heading to the northeast, praying to break out of this mess. Permission was granted, but the visibility was no better.

Straight down was the only direction where we could see anything. We certainly had many unanswered questions: Should we land in the desert — right here, right now — even though we're outside the wire from TQ? Altitude — 200 feet. Map out. Are there towers below us? Wires? Other structures? No. Open area? Good! Put it down? No! Visibility no better, left turn, straight in.

"Tower, we're inbound." Three-tenths of a mile, no runway lights; two-tenths, a dim line; going straight down; one-tenth, a runway. Whew! OK, here we are.

"Tower, we're landing here and shutting down on taxiway Romeo."

We set the brakes and parked the aircraft. I looked at the PC and he looked at me. We both had smiles on our faces that said, "We did it, don't want to do it again and holy crap, let's get out of this thing!"

The relief was like nothing I'd ever experienced. My chest felt like a 1,000-pound brick had been lifted off it. I took the largest, deepest breaths I'd ever taken. Shutdown was quick and we started shedding our equipment quickly. We wanted out and to put our feet on solid ground, under our terms. There were three other aircraft with crews similarly elated to be on the ground. As the crews met on the taxiway, one of the more experienced pilots shook my shoulder and said, "Well, you're not a virgin anymore!"

This risk was not worth the reward. We were carrying troops mostly to get them out on rest and relaxation leave or pass. If crews don't perform composite risk management and double-check weather information from several different sources, then Army aviation will have more incidents like this. Statistically, we won the lottery that night. If we hadn't made it that night, the command would have had to write sympathy letters to our next of kin. The reward that night was we all lived for another mission.

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Michelle's Story

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

June 22, 2009, is a day that Spc. Michelle L. Waters of the Kentucky Army National Guard will never forget. As she got onto the highway to drive home, little did she know her life was about to forever change.

That Monday was Waters' "drop day" — an extra day off she got every other weekend for working nine-hour days as a full-time National Guardsman. She'd taken advantage of the long weekend to visit friends who lived in Ripley, Tenn., about five hours east of where she lived in Taylorsville, Ky. She'd gotten up about 8 a.m. after a good night's sleep and later hit the road. As she headed north, she stopped for gas and a soda. She'd driven the route countless times before with nothing extraordinary happening. She had no reason to believe that day would be any different.

But that day was about to become very different.

Wendy Freeman was headed southbound on Kentucky's Purchase Parkway, which offered two lanes in each direction divided by a grassy median. It was 2:50 p.m. when she saw Waters' car go out of control in the oncoming lanes.

"I just saw her kind of 'fall' (drift) off the right shoulder of the road and then it was like she overcorrected," Freeman said.

Waters, perhaps a bit fatigued behind the wheel, had drifted onto the right shoulder. Recognizing her mistake, she swerved hard to the left, sending her car out of control across both lanes and into the median. As the car plunged down the median's grassy side, it slammed nose-first into a concrete culvert. The violent impact sent her Honda Accord cartwheeling down the median into the oncoming fast lane, landing upright in front of Freeman. Avoiding the wreck, she stopped and ran to Waters' car to see if she could help.

"The car was totaled and she was unconscious when I got to her, but she came around quickly," Freeman said. "By the time the ambulance got there, she was coherent."

The accident scene was only a few miles from Benton, Ky., the location of the Marshall County Sheriff's Department. Deputy Dennis Lewis had been on duty less than an hour when he got the call from the dispatcher.

"It was 'toned-out' to emergency medical services (EMS) and the fire department with a 'serious overturned entrapment,' meaning that the driver was unable to get out of the vehicle under their own power," he said. "All agencies ran Signal Nine emergency traffic to her location on the Purchase Parkway."

Lewis got to the accident scene shortly after the fire department. Accident debris was scattered everywhere. He quickly went to Waters' car and looked inside. Despite the damage to the car's exterior, the driver's compartment remained relatively intact.

"She was sitting still in the driver's seat — her seat belt on — very obviously and visibly upset," Lewis said. "I don't really know that, at the time, she actually knew what had happened and what was going on. But she knew she was hurt and upset."

After EMS arrived, they faced the task of getting Waters out of the wrecked car. The driver-side door had become jammed during the crash. Lewis said, "We pried and prodded and did everything we could with the limited tools we had until, finally, we got the door to pop open."

EMS technicians carefully removed Waters from her car and placed her in an ambulance headed for Lourdes Hospital in Paducah, Ky. Although she drifted in and out of consciousness, she remembered bits and pieces of the ride.

"I vaguely remember waking up and thinking how surreal it was," she said. "It seemed like a dream — like it couldn't have been real because you don't expect things like this to happen to you. And I remember the emergency medical technician asking me for my name and for contact numbers — which I guess I provided — but I don't remember doing that. I must have passed out again and then I woke up a little bit later at the hospital."

When she arrived at the hospital at 3:43 p.m., Dr. Shiraz Patel, an orthopedic surgeon, met her and assessed her injuries. Broken glass from the driver-side window had badly cut her left shoulder. Her right elbow, Patel said, was in "horrible condition."

Waters recalled seeing Patel.

"He basically told me what had happened — that it looked like I had broken my right arm. I must have passed out again because when I woke up in the holding area, there was this little Mexican woman praying over me. I thought, 'Oh, my God, am I dying — what's going on here?'"

Patel ordered Waters be given a series of CT scans to X-ray her injuries from different angles and help him understand their extent. It wasn't a pleasant experience for her.

"I remember being X-rayed," she said. "That's really when it hit me that this is real. When they moved me from the gurney to the X-ray table, I was in an excruciating amount of pain."

Uncertain of her condition, Waters was badly shaken, according to Patel.

"She was scared — she was very scared that she was going to lose her

arm," he said. He calmed her by telling her, "Everything is going to be fine. We're going to take you to the operating room and get you comfortable real fast."

Patel knew she would need surgery within 72 hours. However, he first had to stabilize her arm and reduce the swelling that could block the blood flow to her forearm or damage the nerves to her hand. He accomplished that by splinting her arm to keep it straight and placing ice on the injury to control the swelling. On Waters' third day in the hospital, Patel decided to operate.

Waters' right elbow was shattered. Both the inner and outer condyles (the bony proturbances you can feel on the inside and outside of your elbow) were broken, leaving nothing for the bones of her forearm to move against. Left unrepaired, her right arm would be useless. Ultimately, through the use of steel plates, pins and screws, Patel was able to reconstruct her elbow well enough for her to regain about a 30-degree range of movement in her right arm when she left the hospital. In the three months since her surgery, that has improved to 80 degrees. Patel's goal is for her to improve to as much as 130 degrees — just 10 degrees short of the full range of motion. Physical therapy is helping her regain flexibility in her elbow.

Waters' dramatic accident would have had a different ending had she not been wearing a seat belt, Patel said. "She wouldn't have been here (survived to make it to the hospital) or, worse, she would have been paralyzed or in a coma," he said.

And the doctor knew whereof he spoke. Starting his career in 1993 working a trauma unit in St. Louis, he saw people die who, had they worn seat belts, would have lived to make it to the operating table. Five years later, when seat belts became mandatory and air bags had been added to supplement seat belts, he saw a huge change. Patients were coming in with new injuries the doctors hadn't seen before — things like crushed ankles from floorboards coming up or dashboard-related injuries from where they pushed back onto drivers. Those types of injuries had always been there. The difference was that accident victims who previously ended up on morgue slabs were, instead, ending up on operating tables.

Waters is grateful she survived the accident. Two days after her crash, her grandmother died in the hospital. Had it not been for her seat belt, her father — Fort Knox Garrison Command Sgt. Maj. Charles Waters — would have been attending two funerals that week — one for his mother and another for his daughter. It's a grief he described as "unimaginable."

"You never know — tomorrow is not guaranteed," Waters said. "The decisions you make in your life, they don't just affect you — they affect your Family, friends and colleagues at work."

As Waters considered what might have happened that day, tears flowed from her eyes.

"It kills me to think I could have put my Family through a double funeral," she said. "I'll never take them for granted. The fact something like this happened shows you just how fragile life is."

Being a Father, NCO and Leader

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

Command Sgt. Maj. Charles P. Waters is Army through and through. A tough, career Soldier with 30 years of service, he has served in armor and cavalry units. He saw combat during Desert Shield/Desert Storm and Operation Iraqi Freedom. During the past three years, he has served at Fort Knox, Ky., as the garrison command sergeant major.

June 2009 was a tough month for Waters and his Family. His mother had undergone open-heart surgery in a hospital in South Carolina and then suffered deadly complications. He'd just left the hospital one afternoon when his wife's cell phone rang. An emergency medical technician (EMT) in an ambulance hundreds of miles away was calling with information that would drive the Family deeper into crisis.

Waters said, "The person on the other side of the phone asked my wife, 'Are you the parents of Michelle Waters? My wife said, 'Yes, what's wrong?' and she said, 'Your daughter was involved in an accident.' At that time, my wife quickly handed the phone over to me. I spoke to the lady and she gave me what information she could at the time."

The news put him in an emotional bind. At that moment, his mother was struggling for life in the hospital. At the same time, his daughter was being rushed to Lourdes Hospital in Paducah, Ky., for emergency surgery after her car cartwheeled multiple times. His heart was torn in both directions.

"There is always the fear of the unknown," he said. Although the EMT explained his daughter had been stabilized, there was no way of determining the extent of her injuries at that moment.

"I was concerned about that and I was torn between trying to figure out how we were going to divide forces to deal with both critical issues at the same time," Waters said. "It made it difficult on the Family, to say the least."

Waters' mother passed away two days after his daughter's accident. Michelle was released from the hospital about the same time as her parents came back from South Carolina. In no condition to drive or take care of herself, a friend drove her back from Paducah to her parents' house in Elizabethtown, Ky. Her father remembered how he felt when he saw his badly injured daughter.

"I was relieved by the fact that she was still alive," he said, thankful Michelle had used her seat belts, which saved her life. "I was also told the preliminary report said there's only two ways folks normally come from an accident like that — they're either paralyzed for life or they're dead. I felt blessed that she was still with us."

Waters knows what it means when someone doesn't survive. While stationed at Fort Polk, La., he had a Soldier who was not so fortunate. The Soldier fell asleep, ran off the road, struck a tree and was killed.

"The report stated he was not belted in and he was thrown from the vehicle," Waters said.

While he may take his beret off when he walks through his front door at night, Waters never takes off his "safety" hat. He knows his responsibility for the safety

of his Soldiers doesn't end at the end of duty hours. He knows that what happens off duty affects what happens on duty.

He said, "You look at the statistics that are briefed to the chain of command that come down through the Army system. You see if there is any way you can reach out to the younger generation and, in some cases, the older generation, through the safety briefs in such a manner that it will relate to them."

Sometimes that means being a bit creative, he said. While at Fort Polk, he would scan the police blotter for "teaching" opportunities. He'd make the stories generic and interesting by pulling out the names and injecting a bit of humor. He'd pull the Soldiers together on Mondays during command maintenance to pass along a few jewels.

"We used to call them 'CNN Downloads,'" he said. "The Soldiers actually liked it from a perspective that only 'certain' Soldiers do crazy things that just make you scratch your head. I would try to make it somewhat entertaining, but the point was always going back to what not to do."

And it wasn't just his Soldiers who got the treatment — he shared them with his Family.

"Safety is a choice that you make in life. It's a lifestyle that you live, and you have to view it from that perspective," he said. "You have to address this from an issue that really hits close to the heart — the fact that if you really like life and enjoy living, you have to protect yourself. You could be the best driver in the world and still not be around tomorrow if a bad driver hits you."

That point hit home with Michelle as she grew up. Buckling up when she got inside a vehicle became second nature. But what if it hadn't been? What if she hadn't buckled up that June morning?

"I'm not sure how I would have handled that," Waters said. "… I can't possibly imagine how tough it would be going from Mom's funeral to Michelle's all in one week. Michelle is my first-born. She has so much potential to just to go out and grab life and enjoy it. It means the world to me and her mother that we still have her in our life. I believe that those in our world would be a lot less happy if she were not still with us."

MAKING THE MESSAGE STICK

BOB VAN ELSBERG
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Getting Soldiers to buy into the idea of managing the risks in their life isn't always easy. Because many see themselves as young and invincible, they don't understand the importance of making "safe" decisions. According to Fort Knox Garrison Command Sgt. Maj. Charles P. Waters, this creates another opportunity for noncommissioned officers (NCOs) to exercise leadership.

"I think we need to be aggressive and attack what we know to be right when it comes to safety and driving POVs," he said. "We cannot allow Soldiers to violate standards because there is a cost. If our most precious resource is the Soldier, then they deserve our greatest efforts to protect them."

But getting Soldiers to understand that can be tough, Waters said.

"All of these things can fall on deaf ears if you're not careful," he said. "You've got to remember your audience and ensure that when you engage them the message is being received. Sometimes that is easier said than done with the generation that we have today. I like inputting humor into it. If you have a standard safety brief, sometimes you've got to change it up a little bit — spice it up so that they still get the point when they walk away."

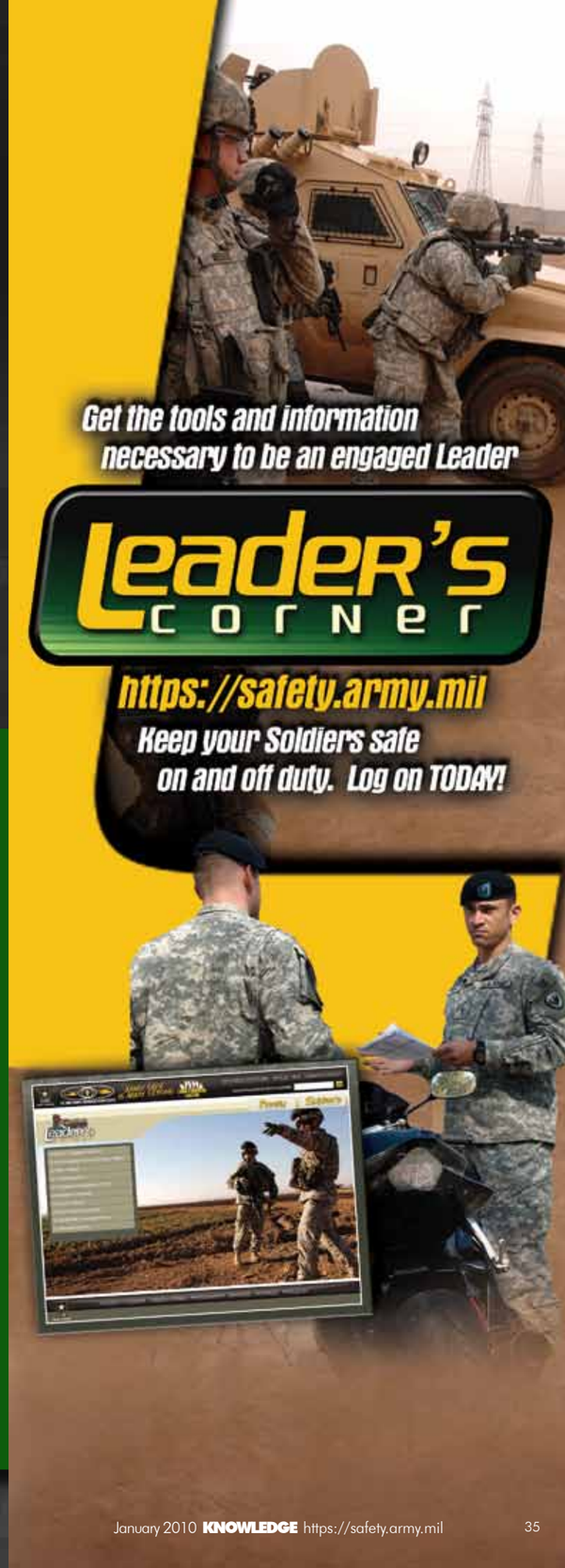
Beyond the humor, Leaders are responsible to ensure their Soldiers meet the standards.

"I think the most important thing we, as Leaders, need to do is constantly watch for violations with our Soldiers when we see them in day-to-day operations," he said. "We have to hold them accountable and make sure if we see violations, we correct them on the spot. Regardless how busy we are, we must take the time to make on-the-spot corrections and hold them accountable."

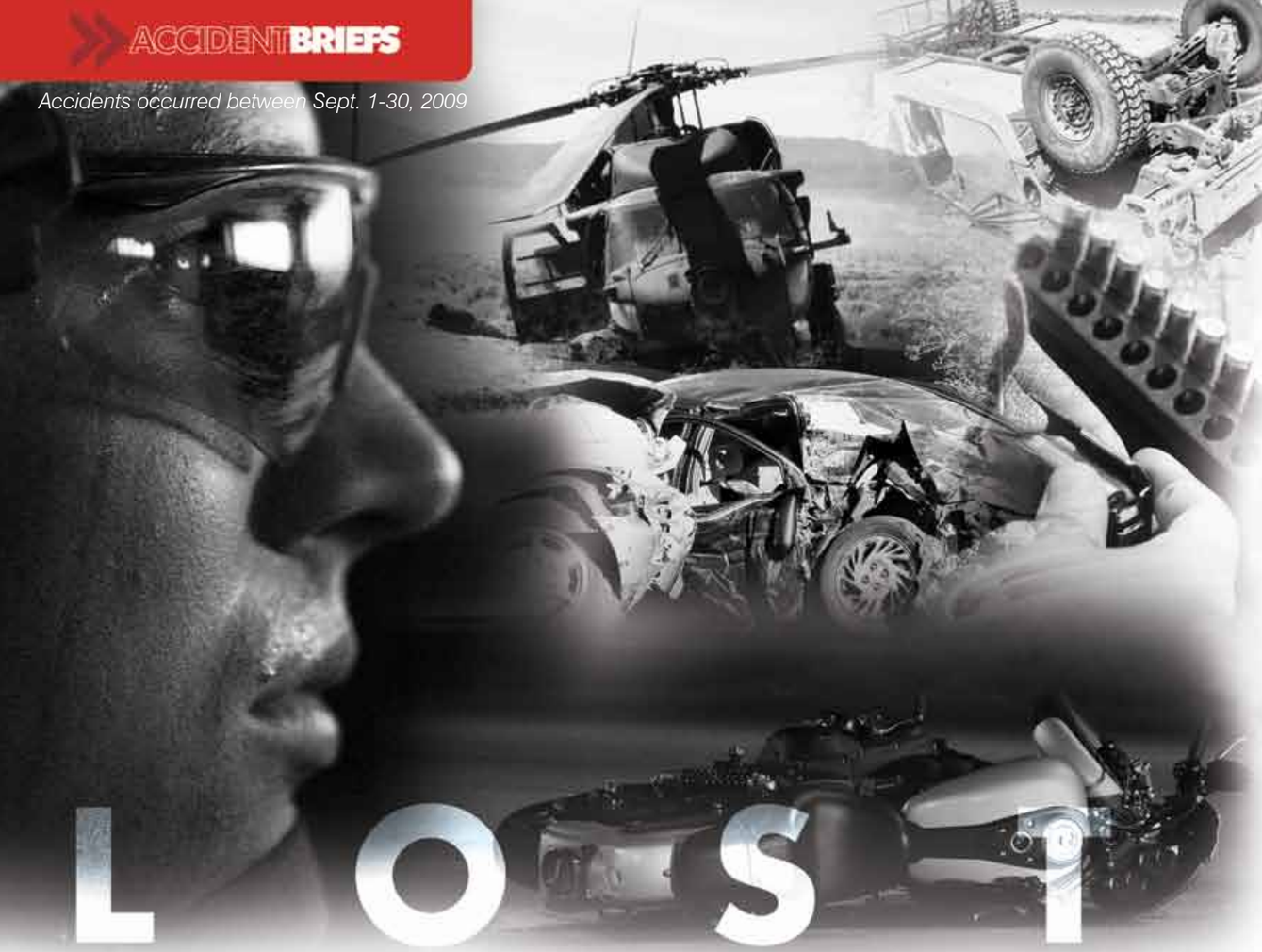
Holding Soldiers accountable helps them grasp the serious consequences of their decisions — consequences they might not recognize at the time. Waters explained that when Soldiers realize it only takes a fraction of a second to lose control of their vehicle and die in an accident, they take life more seriously.

NCOs who wear their stripes with authority and uphold safety standards can make a real difference, Waters said.

"It's by our actions and aggressiveness that we can impact the world in which we live and those we come into contact with on a daily basis," he said. "That's true whether they be Soldiers, civilians who work for us or our own Families."



Accidents occurred between Sept. 1-30, 2009



AVIATION

AH-64D

CLASS A

- The aircraft contacted the ground during a descending turn and sustained severe damage.

CLASS C

- The aircraft experienced a No. 2 generator fire while the crew was repositioning from the forward arming and refueling point to parking.

OH-58A

CLASS B

- The pilot was returning to the airfield after refueling when he reported engine surges and uncommanded yaws. The pilot performed an autorotation, resulting in a hard landing.

OH-58D(I)

CLASS A

- Fire initiated onboard the aircraft during run-up for flight. The crew was able to egress without injury.

OH-58D(R)

CLASS B

- The aircraft's right skid tube contacted terrain during close combat attack operations. The air bags deployed; however, the crew maintained level flight and returned to the forward operating base.

TH-67A

CLASS B

- The aircraft main rotor system contacted terrain during a slope landing iteration.

UH-60A

CLASS A

- The aircraft crashed as the crew was returning to home base in deteriorating weather.

CLASS C

- The aircraft main rotor system contacted trees during confined area operations. All four blades sustained damage.

UAS

RQ-5A

CLASS C

- The nose landing gear of the unmanned aircraft contacted the arresting gear drum on the runway as the crew was conducting an abort-takeoff procedure, causing the landing gear to separate from the fuselage.

GROUND

ACV

CLASS A

- Two Soldiers died when a bridge collapsed as they drove their M1126 Stryker across it during a five-vehicle convoy movement. The Stryker fell about 50 feet and overturned in a dry riverbed. Five other Soldiers aboard the vehicle were injured and evacuated to a medical center.

AMV

CLASS A

- Two Soldiers suffered fatal injuries when their M1151 HMMWV overturned after striking a dirt mound in the roadway.
- A Soldier was killed when the M1151 HMMWV he was operating overturned.
- A Soldier was fatally injured when he was struck by a government vehicle driven by another Soldier.

Personnel Injury

CLASS A

- A Soldier suffered fatal injuries when the loaded rifle he was handling fired and struck him in the eye. At the time of the accident, the Soldier was attempting to spin the rifle.

DRIVING

POV

CLASS A

- A Soldier was negotiating a curve in his privately owned vehicle (POV) when an oncoming vehicle crossed the centerline and hit him head-on. The Soldier's vehicle overturned and he suffered fatal injuries. The Soldier was wearing his seat belt.
- A Soldier was driving with two other Soldiers as passengers when he drifted into the oncoming lanes of traffic. A tractor-trailer in the oncoming lanes swerved onto the right shoulder, but was unable to avoid hitting the Soldier's POV. The Soldier was evacuated to a local medical center, where he later died during surgery. Both passengers survived with non-life-threatening injuries. All three Soldiers were wearing their seat belts.
- A Soldier was driving her POV when she drifted off the right side of the road, overcorrected and caused the vehicle to overturn and enter the median. The driver, who was not wearing her seat belt, was ejected. She was taken to a medical facility for treatment, but died two days later after being removed from life support.

ARMY AVIATION LOSSES

Fiscal 2010

as of Dec. 3, 2009

	Class A/Fatalities
ATTACK	0/0
RECON	1/2
UTILITY	2/1
CARGO	1/0
TRAINING	0/0
FIXED-WING	1/0
UAS	1/0
TOTAL	6/3

ARMY GROUND LOSSES

Fiscal 2010

as of Dec. 3, 2009

	Class A/Fatalities
AMV	3/2
ACV	2/2
PERSONNEL INJURY includes weapons-handling accidents	6/7
FIRE/ EXPLOSIVE	0/0
PROPERTY DAMAGE	0/0
TOTAL	11/11

- A Soldier was driving his POV en route to his duty station when an oncoming vehicle crossed the centerline and struck him head-on, killing him on impact.
- A Soldier lost control of his POV, slid passenger-side first into an intersection and collided with a van. The Soldier was pronounced dead at the scene.
- A Soldier in emergency leave status was located by a state trooper at the scene of a single-vehicle crash. The Soldier had driven off the road and struck a tree, resulting in fatal injuries.
- A Soldier was on emergency leave when his POV left the road on an S-curve, crossed the median and oncoming lanes and struck a building. The Soldier was taken to a medical center, where he died three days later.
- A Soldier was driving his POV with another Soldier as a passenger when he lost control, left the road and struck a tree. The Soldier-passenger was taken to a medical center, where he was pronounced dead.
- A Soldier was driving his POV while on post-deployment block leave when he went through a T-intersection and descended 30 feet into a water-filled ravine. The Soldier died at the scene.

POM

CLASS A

- A Soldier was riding his newly purchased privately owned motorcycle (POM) when he collided head-on with an approaching sport utility vehicle. The Soldier, who was reportedly wearing all required personal protective equipment, was pronounced dead at the scene.
- A Soldier was riding his POM and leading two other riders when he struck the rear of a vehicle stopped in the left lane to make a left-hand turn. The Soldier, who was wearing his helmet, suffered fatal injuries.
- A Soldier riding with a group lost control in a curve, entered the shoulder and struck a guardrail, suffering fatal injuries. The Soldier was wearing his helmet.

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.

POV DRIVING LOSSES Fiscal 2010

as of Dec. 3, 2009

	Class A/Fatalities
CAR	8/9
SUV/JEEP	2/2
TRUCK	2/2
MOTORCYCLE	4/4
PEDESTRIAN	3/3
OTHER*	1/1

*Includes: vans and ATVs

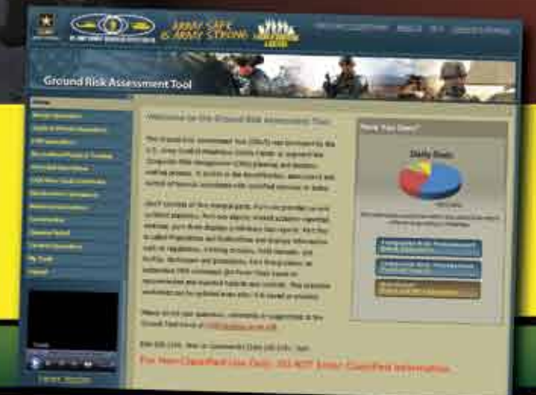
21 TOTAL DEATHS

Fiscal 2009: 21 3 year average: 18

READY FOR THE RISK?

The Ground Risk Assessment Tool is designed to aid in mitigating risk by reinforcing the five-step composite risk management process. Using this tool in concert with military decision-making processes will help Army Leaders achieve success in their missions and make safety an integral part of their planning. Visit the USACR/Safety Center Web site today and try it out for yourself.

- MAKE SOUND RISK DECISIONS
- REDUCE ACCIDENTAL LOSS
- INCREASE COMBAT POWER



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ARMY SAFE IS ARMY STRONG

A BAND OF BROTHERS & SISTERS

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OFFICIAL SAFETY MAGAZINE OF THE U.S. ARMY

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KNOWLEDGE

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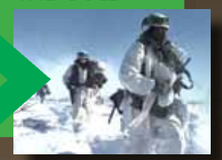

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U.S. ARMY COMBAT READINESS/SAFETY CENTER

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Mission statement: The United States Army Combat Readiness/Safety Center (USACR/Safety Center) supports our Army by collecting, analyzing and communicating 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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FROM THE DASAF

"WE SAW in 2009 that ENGAGED LEADERSHIP at ALL LEVELS of command DOES indeed WORK in KEEPING our SOLDIERS SAFE and MISSION-READY."

RENEWING THE COMMITMENT TO SOLDIER SAFETY

Happy New Year to everyone! January brings a sense of renewal and an opportunity to reflect on our past missteps and successes and map out a plan to make the coming year the best yet. Regarding accidents, our Army had a pretty good year in 2009. In fact, it was the best year since the terrorist attacks of Sept. 11, 2001. We can do even better in 2010 by taking a look at where we've been, finding those areas we can improve and renewing our commitment to keeping our great Soldiers, our "Band of Brothers and Sisters," safe in the months and years ahead.

A BAND OF BROTHERS & SISTERS

Here's a broad look at the numbers for fiscal 2009. Overall, Army fatalities were down 16 percent from fiscal 2008, with a reduction of just over 42 percent for the five-year period since the beginning of fiscal 2005. That's great news for the Soldiers, Families and civilians who make up our Army team and for engaged Leaders who have put forth great effort to drive down unnecessary losses.

We cannot allow positive statistics to lull us into complacency, however. The bottom line is 173 Soldiers were killed in accidents in fiscal 2009, the vast majority of them in off-duty privately owned vehicle (POV) accidents. Although both POV and motorcycle fatalities were down by about 13 percent in 2009, two specific factors — alcohol and/or speed — contributed to more than half these accidents. We also didn't reduce accidents across the board in 2009; fatalities in both Army Motor Vehicles and Army Combat Vehicles rose slightly from numbers logged in 2008.

We saw in 2009 that engaged leadership at all levels of command does indeed work in keeping our Soldiers safe and mission-ready. We've also learned Soldier-to-Soldier and direct Family engagement are vital to our safety programs. Leaders, please continue to search within your formations for those areas that need improvement while simultaneously strengthening your proven safety practices. I encourage all Leaders to utilize our Leader Risk Assessment, Individual Risk Assessment and the soon-to-be-released "Soldier-to-Soldier" Assessments to gain insights into their formations and develop a way ahead.

Our problems with off-duty Soldier indiscipline call for Leaders to personally engage their Soldiers regarding individual responsibility in off-duty activities, particularly behind the wheel of a POV. Similar effort is needed on the tactical side, where fatal accidents involving speed and nonuse of restraint systems remain an all-too-common occurrence. "Safety sense" while driving is especially important during this time of year, when many of our Soldiers will encounter snow and ice conditions in both their personal and tactical vehicles.

I am confident we can capitalize on this past year's many safety successes and make 2010 an even safer year for our total Army Family. A strong team effort and steadfast dedication to safety are proven winners in our strategy to eliminate needless losses, and the U.S. Army Combat Readiness/Safety Center stands ready to help as you renew your commitment to Soldier safety in 2010 and beyond.

Thank you for all you do to make each and every day safe for our Soldiers, Families and civilians. Have a happy, prosperous and safe new year!

WILLIAM T. WOLF
Brigadier General, USA
Director of Army Safety

HOW DID OUR ARMY DO?

Fiscal 2009 End-of-Year Review

MARY ANN THOMPSON, CHARISSE LYLE AND GLEN DAVIS
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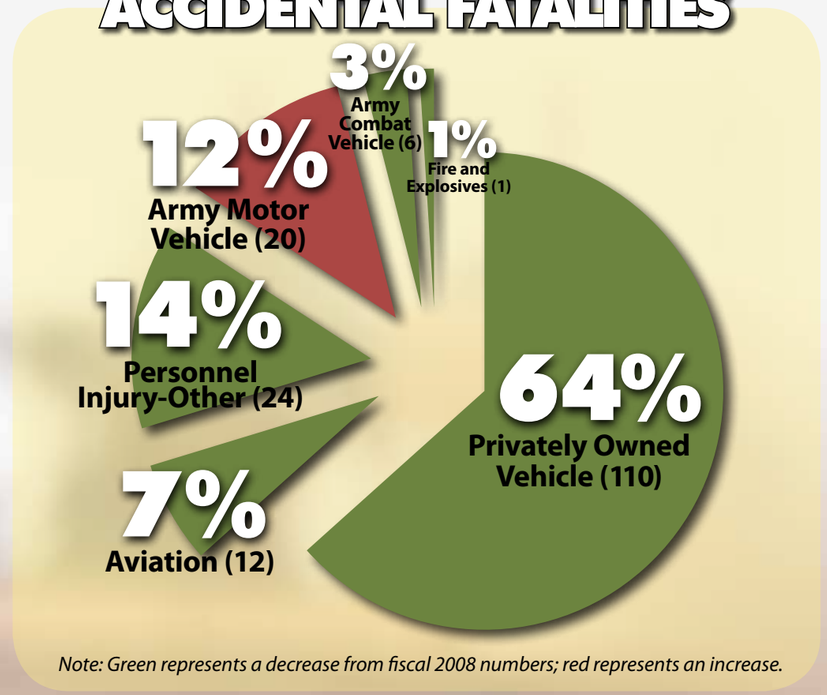
The Army's accidental fatality numbers dropped in fiscal 2009 to their lowest level since the terrorist attacks of Sept. 11, 2001. Additionally, the accidental fatality rate, 0.24 per 1,000 Soldiers, is at its lowest since 1974, the year the Army Safety Management Information System began. Leading the way in the decline were privately owned motorcycle deaths, which dropped by 19 when compared to fiscal 2008.

During fiscal 2009, the Army experienced 173 accidental military fatalities. Overall, fatalities were down 16 percent from the 207 experienced in fiscal 2008. As seen in the chart to the right, privately owned vehicle (POV) accidents accounted for 64 percent of the fatalities, followed by personnel injury-other (PIO) accidents at 14 percent, Army motor vehicle (AMV) accidents at 12 percent, manned aviation accidents at 7 percent, Army combat vehicle (ACV) accidents at 3 percent and explosive and fire accidents at 1 percent. This article provides a more detailed breakdown of Army on-duty and off-duty accidental fatalities during fiscal 2009.

ON-DUTY

There were 52 on-duty Soldier accidental fatalities in fiscal 2009, three fewer than in fiscal 2008. These deaths involved the AMV, ACV, manned aviation, explosive and fire and PIO. (Editor's note: In addition to these fatalities, a dismounted Soldier was fatally injured when he was struck by a POV.)



Note: Green represents a decrease from fiscal 2008 numbers; red represents an increase.

GROUND

Army Motor Vehicle

AMVs are all Army wheeled motor vehicles except the Stryker and Mine Resistant Ambush Protected (MRAP) vehicle. There were 20 Army military fatalities related to AMV accidents during fiscal 2009, two more Soldier deaths than the previous year. Of the 20 fiscal 2009 AMV fatalities, 18 occurred during Operation Iraqi Freedom/ Operation Enduring Freedom (OIF/OEF).

Tactical vehicle accidents accounted for 15 of the 20 fatalities, 12 of which involved the HMMWV. This total was three more HMMWV fatalities than in fiscal 2008. Of the 12 HMMWV fatalities, 11 occurred during OIF/OEF. The M1151 accounted for 10 of the 12 HMMWV fatalities.

Army Combat Vehicle

ACVs include all tracked combat vehicles, as well as the MRAP and Stryker. There were six ACV-related Soldier accidental fatalities in fiscal 2009, which was down one fatality from the previous year. All six of the fatalities occurred during OIF/OEF.

Three of the six fatalities resulted from MRAP vehicles overturning and fatally injuring the gunner. One Stryker accident also involved a rollover, resulting in two Soldier deaths. The remaining ACV fatality resulted from an M1117 Armored Security Vehicle rollover that fatally injured the gunner.

Explosive and Fire

There was one Soldier accidental fatality due to fire in fiscal 2009, compared to two fatalities the previous year. A Soldier in Iraq died in a fire that started when he tried to ignite a propane stove with a lit piece of paper.

Personnel Injury-Other

PIO accidents are Army accidents that involve injury to personnel not covered by any other accident type. There were 12 on-duty PIO accidental fatalities in fiscal 2009, compared to 14 fatalities in fiscal 2008.

Four of the fiscal 2009 fatalities occurred during OIF/OEF.

Physical training (PT) and weapons handling were the most frequent activities involved in the 12 PIO fatalities. Three PT-related fatalities included a Soldier suffering a heat injury during a road march, a Soldier collapsing after participating in organized flag football and a Soldier failing to surface while swimming as part of personal PT (the Soldier died four days later). There were two on-duty weapons-handling fatalities, including a Soldier death from a negligent discharge and a Soldier death from friendly fire.

Two fatalities involved parachuting, while two other fatalities involved Soldiers being pinned by falling loads. One Soldier drowned when he fell into a river while on dismounted patrol in Iraq, and a Soldier drowned while participating in recreational swimming activities. Another Soldier was presumed drowned after he fell overboard from a tug during vessel qualification.

AVIATION

The Army lost 12 Soldiers in fiscal 2009 aviation accidents, compared to 14 Soldiers killed the previous year. One-third of the fiscal 2009 fatalities occurred in OIF/OEF. The UH-60 Black Hawk, OH-58D Kiowa Warrior (KW) and AH-64 Apache were involved in these fatal accidents.

As depicted in the chart on page 7, fiscal 2009 Class A and B manned aircraft accidents increased by seven and three, respectively, from fiscal 2008. Class C accident numbers show a substantial decrease from fiscal 2008. However, in accordance with Army Regulation 385-10, units have 90 calendar days to submit their Class C accident reports to the USACR/Safety Center. Therefore, this number will change as more reports are received.

Aviation Accident Areas of Concern

Power management. Power management errors caused four Class A accidents, three in the Black Hawk and one in the KW, and resulted in four Soldier deaths. All occurred in a mountainous environment and involved mission-planning errors. In three of these accidents, the crews did not take the prevailing tail winds into consideration.

Materiel failures/ malfunctions. Three of the fiscal 2009 fatalities occurred in two accidents involving materiel failures: An engine failure in an AH-64D and an uncommanded flight control input of unknown origin that caused a pilot-induced, low-airspeed left pedal turn to become uncontrollable in a UH-60L. Additionally, there were 12 nonfatal accidents caused by definite or suspected materiel failures or malfunctions (five Class A, two Class B and five Class C). In three of the 14 accidents, the crews responded incorrectly to an in-flight materiel failure (two full authority digital electronic control [FADEC] failures and one engine failure), which increased the severity of the accidents.

Wire strikes. There were two Class A wire strikes, both occurring in Iraq at night during night vision goggles (NVG) flight, which resulted in two fatalities.

Inadvertent instrument meteorological conditions (IIMC). One fatal accident in Iraq involved an incorrect response to IIMC. While attempting a nighttime visual meteorological conditions approach, the crew encountered IIMC but did not immediately initiate IIMC recovery procedures and transition to instruments. This delay allowed the pilot on controls to experience spatial disorientation and lose aircraft control, resulting in a destroyed aircraft, one Soldier fatality and 12 injuries.

Maintenance test flight (MTF) autorotational checks. Two Soldiers were fatally injured when their OH-58D(R) impacted the runway during an MTF autorotational check. The maintenance test pilot (MP) failed to ensure the throttle was increased to 100 percent before attempting the power recovery, thereby allowing airspeed and rotor rpm to decrease below that required for sustained flight. A similar accident occurred in which another MP also failed to return the throttle to full power, causing the OH-58D(R) to impact the ground with Class A damage and injuries, but no fatalities.

Emergency procedures training. Eleven accidents occurred during emergency procedures training (one Class A, three Class B and seven Class C). The majority of these accidents involved simulated single-engine failures (seven in single-engine and two in dual-engine aircraft) and two OH-58D(R) FADEC manual throttle operations.

Brownout. There were four brownout accidents: one Class A with no fatalities and three Class B. All occurred in OIF/OEF during landings at night under NVG.

A common thread across the fiscal 2009 aviation accidents was a breakdown in crew coordination, which contributed to 43 percent of the Class A accidents. Examples include crewmembers failing to monitor flight instruments or assist in obstacle clearance and failure of crewmembers to announce decisions or actions that affected the ability of other crewmembers to properly perform their duties (e.g., announce go-around).

MANNED AVIATION ACCIDENTS

SOLDIERS KILLED IN POV ACCIDENTS

Vehicle Type	Fiscal 2009	Fiscal 2008	Increase/ Decrease
Motorcycle	32	51	-19
Sedan	40	44	-4
Other POV	32	30	2
Pedestrian	5	4	1
Totals	109	129	-20

SOLDIERS KILLED IN MOTORCYCLE ACCIDENTS

Motorcycle Type	Fiscal 2009	Fiscal 2008	Increase/ Decrease
Sport	20	37	-17
Cruiser	10	7	+3
Not Reported	2	7	-5
Totals	32	51	-19

OFF-DUTY

There were 121 off-duty accidental fatalities in fiscal 2009, including those related to motorcycles, sedans, other vehicles, pedestrians, PIO, sports and human movement.

PRIVATELY OWNED VEHICLE

Fiscal 2009 ended with 109 off-duty POV Army military fatalities — 20 fewer than the previous year. The reduction in POV fatalities was accounted for largely by the decrease in fatal sport motorcycle accidents.

With many fiscal 2009 accident reports still pending, the USACR/Safety Center does not have a complete list of the causes of these accidents. However, current data indicate indiscipline to be among the leading causes of fatal POV accidents. When Soldiers know what's right but willfully choose an alternate course of action, we call that choice "indiscipline." Indiscipline can take many forms, including speeding, failure to wear a helmet or seat belt and driving under the influence.

Motorcycles

Speeding was involved in 17 motorcycle fatalities in fiscal 2009. Of these, 12 Soldiers were riding sport motorcycles, four were riding cruisers and one was on an unidentified motorcycle type. Failure to wear helmets contributed to the deaths of four riders — two on sport motorcycles and two on cruisers. Leaders comprised the largest portion of fatal motorcycle accidents in fiscal 2009, with 73 percent of the victims between the ranks of E5-O2.

Sedans

In fiscal 2009, 40 Soldiers were killed in sedan accidents, a reduction of four fatalities from fiscal 2008. Again, indiscipline appears to be a leading cause in these accidents. Sixteen Soldiers were killed in accidents involving excessive speed. Although wearing a seat belt is a proven method for reducing fatalities in POV crashes, many Soldiers still choose not to buckle up. In fiscal 2009, 12 Soldiers killed in sedan accidents were not wearing seat belts.

Other POV

Other POVs include all-terrain vehicles, bicycles, Jeeps/SUVs/utility vehicles, station wagons, trucks and vans. In fiscal 2009, 32 Soldiers were killed in other POV accidents, two more than in the previous year.

Indiscipline figured prominently in these losses as well. As with sedan and motorcycle fatalities, speed was a leading cause of the fiscal 2009 other POV fatal accidents. Ten Soldiers were killed in accidents where excessive speed was involved. Failure to wear seat belts was also a factor in several of the fiscal 2009 accidents. Of the 32 Soldiers who were killed, 10 were not wearing seat belts.

Pedestrian

Five Soldiers were killed as pedestrians in fiscal 2009, an increase of one over fiscal 2008. Three of the five Soldiers died while attempting to cross multi-lane highways.

Personnel Injury-Other

Off-duty PIO accidents in fiscal 2009 resulted in the deaths of 12 Soldiers. This is a significant decrease from fiscal 2008, when 22 Soldiers were killed.

Three of the fiscal 2009 Soldier fatalities resulted from water-related activities, including a Soldier who drowned when his raft overturned, a Soldier who drowned while swimming in a lake and a Soldier who died from hypothermia after falling into a river.

Three Soldiers died from the negligent discharge of personal weapons, which included a rifle, shotgun and handgun. Two Soldiers died in parachuting accidents, one in a recreational skydiving class and the other while BASE (buildings, antennas, spans and earth) jumping. A Soldier was killed when he fell from a barracks window; a Soldier died from carbon monoxide poisoning inside his residence; a Soldier died when he walked through a glass door, severing an artery in his arm; and a Soldier died after he was struck by a tree that was being cut down.

CONCLUSION

While the Army closed fiscal 2009 with an overall 16-percent decrease in Soldier fatalities, there is still much that can be done to prevent off-duty losses, which accounted for 70 percent of the total accidental fatalities. The many on-duty safety programs and policies that protect our Soldiers, in both combat and in garrison (on-duty), have to be applied in our approach to off-duty safety.

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 their responsibility and mission. Composite risk management should be inherent in every decision and Leaders must remain vigilant to protect against risk and prevent accidents to preserve our force.

We must also remember that our Band of Brothers and Sisters does not dissolve when the duty 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. Likewise, our Families have a strong influence over their Soldiers, especially during off-duty time. Families, friends and peers are our Soldier's off-duty battle buddies and have the responsibility to remain watchful of the increased hazards associated with off-duty activities.

We all must embrace Army safety and use the tools, programs and lessons learned to protect our most vital resource — our Soldiers — both on and off duty in combat or home station and off-duty with Family and friends. Our Army simply cannot afford to give accidents the opportunity to strike again; we must remain vigilant about safety and apply composite risk management to all our daily activities, both on and off the battlefield. Safety begins with awareness and we can never "give safety the day off." «

Editor's note: At the time this article was written, information on accidental fatalities experienced during this time frame was still filtering in to the U.S. Army Combat Readiness/Safety Center to be entered into the database, so the statistics and findings may change in the coming months.

WHAT DO YOU THINK?

From January through March, KNOWLEDGE magazine is conducting a survey to determine whether we're meeting our readers' needs. Please help us out by taking a couple of minutes to answer a few simple questions at https://safety.army.mil/.

After all, this is your magazine. Shouldn't it contain the information you find helpful?

Keeping Soldiers in the Fight

1ST LT. BRANDON PHILLIPS
AND 1ST LT. JARED HOFFMAN
Forward Support Company, 84th Engineer Battalion,
130th Engineer Brigade
Afghanistan

The gunner's restraint system (GRS) is often looked at by many Soldiers as just another type of seat belt restraint. However, our unit's combat experiences have shown just how important this system is. The GRS secures gunners in their vehicles, preventing them from being thrown out in the event of a rollover or the detonation of an improvised explosive device (IED). Two different incidents during our deployment illustrate this point.

A Tale of Two Rollovers

During a combat logistical patrol, the trail vehicle in a convoy experienced a rollover while trying to avoid an obstacle at high speed. The driver overcompensated while attempting to regain control of his Mine Resistant Ambush Protected (MRAP) vehicle, and the gunner was ejected from his turret. The gunner's back was fractured in several places and nearly every bone in both arms was shattered. His injuries could have been limited had he been wearing his GRS. Thankfully, this Soldier survived and is making a steady, albeit lengthy, recovery stateside.

A closer investigation of the events leading to the rollover indicated that Leaders within the convoy failed to adequately inspect all vehicle gunners before departure. In this case, Leaders failed their Soldiers by not mitigating a potential risk involved in their mission. A simple check that only takes a matter of seconds could have prevented this Soldier's substantial injuries.

On a later mission along the same main supply route, an MRAP was involved in a crush-wire IED detonation that caused minor damage to the hull and destroyed a rear tire. The driver was unable to maintain control of the vehicle because of the blown tire and, subsequently, the MRAP overturned. Fortunately, this gunner was wearing his GRS. Although he suffered injuries, they were not as severe as in the previous rollover incident. This time, Leaders adequately inspected each gunner for their GRS before the start of their mission. The key Leader's attentiveness may very well have saved the life of this Soldier or, at the very least, prevented more significant injuries.

As these cases illustrate, Leaders cannot afford to overlook even the smallest ways to mitigate risks and keep their Soldiers safe. There are far too many ways to become a casualty in a combat zone. We have the best training and equipment in the world, but all of that becomes null and void when leadership fails their Soldiers. So do what's right — identify risks, mitigate them to the lowest level and safeguard your Soldiers. We owe it to them.

> "Both **GARRISON** and **DEPLOYED MISSIONS** require a **CONSTANT REVIEW** of **RISKS** and developing **WAYS** to **MITIGATE** them."

Leaders are the Vital Key

Safety is one of the most important considerations Leaders must look at when planning and executing missions. Both garrison and deployed missions require a constant review of risks and developing ways to mitigate them. As a Leader in a deployed area of responsibility, there are scores of risks to take into account. Small-arms fire, IEDs, low-hanging wires, scorching temperatures and vehicle rollovers are just a handful of the risks Soldiers face downrange.

Thankfully, the equipment and resources available to Soldiers today are the best they have ever been. Items such as fire-retardant clothing, ballistic eye protection and state-of-the-art body armor have increased the level of protection for troops by leaps and bounds in recent years. In addition, MRAP vehicles protect troops with their thick armor hulls. They also possess enhanced optical devices that allow the quick and accurate identification of possible threats.

However, advances in protective equipment and technology can only take us so far. Leaders at all levels can mitigate risk and ensure the safety of their Soldiers by conducting proper pre-combat checks and pre-combat inspections. Noncommissioned officers (NCOs) are the start point for this vital process. It should be the first-line supervisor, normally a sergeant or staff sergeant, who checks each Soldier to ensure they have all the pieces of gear and equipment required for their mission.

In our unit, when the Soldier's first-line supervisor verifies they have all the proper equipment, that NCO signs a checklist indicating the check was performed accurately. Senior Leaders can then conduct random spot checks of the personnel involved in the mission and take note of any deficiencies that could affect the mission. Even when high-ranking "guests" are along, the convoy leadership must make it a priority to inspect their equipment, as well. No Soldier is above this standard.

Aside from the individual Soldier and his equipment, combat vehicles must also be inspected with the same vigor. Vehicle operators and Leaders need to perform preventive maintenance checks and services, as well as inspect the multitude of new equipment found in the field today. Electronic warfare devices, objective gunner protection kits and other new devices must be a part of this process. As we related in the first half of this article, we know how important this is because of our experiences with the GRS. Properly used, the GRS and risk mitigation have proved to be a vital component in our unit's effort to enforce safety.

Troops In, Brown Out

CHIEF WARRANT OFFICER 2 KENNETH G. MCALISTER
C Company, 3rd Battalion, 227th Aviation Regiment
1st Air Combat Brigade, 1st Cavalry Division
Fort Hood, Texas

It was a cool November night. The mission called for an air assault insertion into a small village just north of Baghdad, Iraq. Although we were both pilots in command (PC), I was the air mission commander for this particular flight. It was our commander's practice to put two PCs in the lead aircraft, whenever possible, to lessen the workload of flight lead.

We took off from Taji shortly after 2300. The flight was not a long one, six minutes at the most. We soon picked up our landing direction, due north, and hit our release point. The AH-64 gunships (Chalk 2) for our close air support called our landing zone (LZ) "ice," a term used to indicate the LZ was free of hostile activity. We slowed to 70 knots indicated airspeed (KIAS) and performed our before-landing checks. I was on the controls and the PC was navigating and calling out airspeeds, altitude and distance to set up for a time-on-target landing. The LZ was small and situated in the middle of a small town surrounded on three sides by buildings and many small sets of wires.

The LZ was on a road that ran north to south, just north of an intersection with a berm on the east side parallel to it. I began our landing just after flying over the large set of wires along the intersecting road, but had to extend because of another set of wires that were on short final. I had accomplished plenty of brownout landings before; however, nothing — not even training in Kuwait — could have prepared me for this.

The brownout landing started out like any other landing, but it quickly got worse. I lost all visual references; nonetheless, I continued to hover until I couldn't stand it any longer. I knew the ground was there and I knew I would eventually land. My thoughts were that if I had to complete a go-around, the bad guy would get away. I couldn't stand not being able to see anything. I announced that I was totally brownout.

The PC quickly took the controls and told me he could still see a building on his side of the aircraft. He completed the landing with me guarding the controls. Chalk 2 never made it even close to landing in their LZ, which was 50 to 60 meters away at another road intersection. They completed a go-around and landed back at the original takeoff point. We inserted our troops and headed back to Taji, which was less than five miles away, to wait for the extraction call.

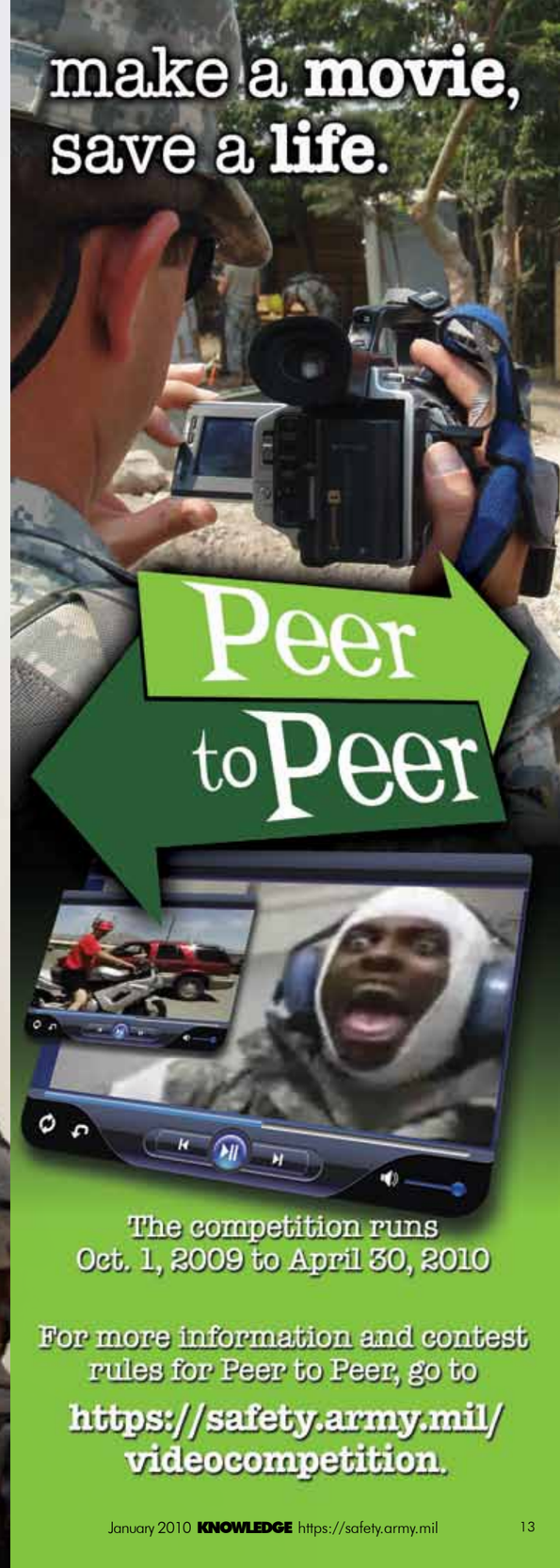
Our flight got the call for extraction just after midnight. We didn't need a route and we didn't have a timeline. We had a pickup zone (PZ) with a landing direction and it happened to be on the same road as the original LZ. We picked up our landing direction again, hit our release point and called the troops on the ground.

I transferred the controls after slowing to 70 KIAS. I told the PC that he should probably land since he had a visual reference during the last landing. After a three-way positive transfer of the flight controls, I called out airspeed, altitude and distance to the PZ. The PC gave the "bounce" call to the flight and began landing. This time, he lost visual cues and I didn't. In fact, I saw the ground getting closer to us through the chin bubble after we initially touched down. I shouted that we were rolling right and put my hand on the cyclic control to move it to the left to level us out. This put the left main landing gear on the ground. After he reduced the collective, the PC transferred the flight controls back to me and monitored the loading of our passengers.

Chalk 2, flown by our commander and a platoon leader, again failed to land on the first try. They did a go-around to our right and launched flares in the process, which started a fire in the field to the east. We again took off to the north and met our sister ship after their pickup.

This whole ordeal reveals how hastily planned air assault missions into unknown areas can be extremely hazardous. This situation also illustrates how good crew mix can mitigate hazards to an acceptable level. As for the marginal crew mix of the other aircraft, that's a whole other story.

Oh, yeah, we got the bad guy too!



Smashed, Trashed and Stranded on the Road

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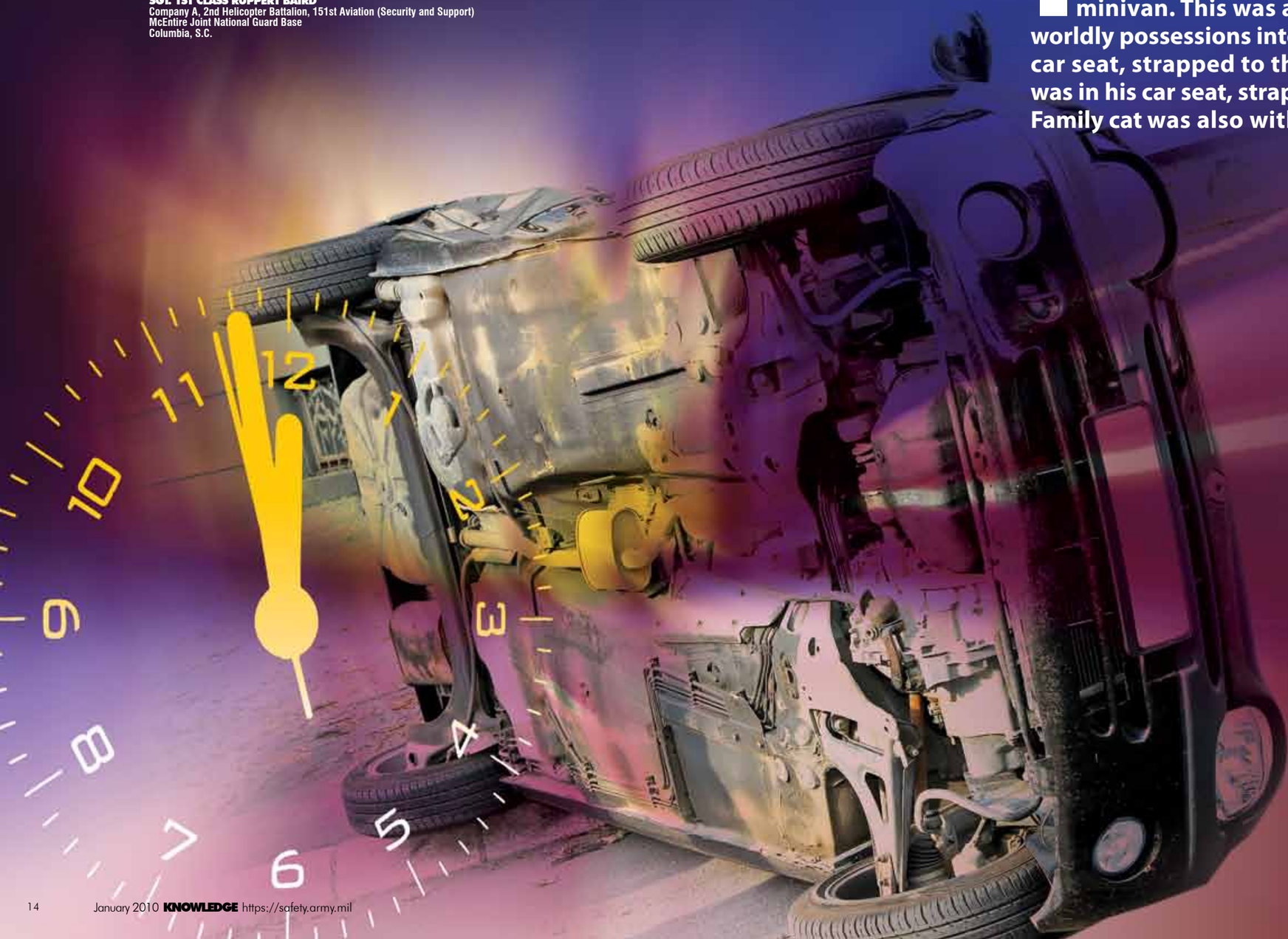


It was just before New Year's and I was leaving Fort Lewis, Wash., to move my Family back to South Carolina. I was coming off active duty and had rented a twin-axle trailer and installed a hitch on my minivan. This was a do-it-yourself move and we'd loaded all our worldly possessions into the trailer. Our 4-year-old daughter was in her car seat, strapped to the front passenger seat, and our 2-year-old son was in his car seat, strapped to the rear bench seat next to my wife. The Family cat was also with us as we left a few minutes before midnight.

I was anxious as we pulled out of Tacoma, Wash., and headed east toward Snoqualmie Pass and the Cascade Mountains. As we made our way through the pass, we encountered gusting winds that rocked the van and trailer. I slowed down to ensure I kept full control. After we got through the pass, the winds died down. We merged onto Interstate 82 and I settled in for a night of driving.

One of the strange anomalies of the interstate system is a loop on I-82 in southeastern Washington. I planned to bypass this loop by going through Prosser, Wash., on State Highway 221 and reentering I-82 just north of Umatilla, Ore. Mind you, this was before Google Maps and MapQuest, so the only thing I had was a map. It seemed logical to me that this would be a safe, well-traveled route.

As we pulled through Prosser, I recognized the dangers posed by the ice, snow and wind and drove at or below the speed limit. I then began climbing into Horse Heaven Hills.

As I drove, I saw a warning sign for a 90-degree right turn and a 25-mph speed limit. I slowed, feeling sure I would be fine at 20 mph; however, the black ice didn't agree. As I eased around the turn, I felt the trailer rock. Thinking I had encountered winds again, I decelerated. That was a mistake. Even though the van made the corner, the trailer began sliding on the ice. Before I knew what happened, the van and trailer jackknifed and I was out of control. I tried steering into the direction of the skid, but to no avail. All I could do was hold on as my van was pushed diagonally across the road and into the oncoming lane. Fortunately, there were no other drivers on the road.

I watched helplessly as the van's passenger door struck a road sign, shattering glass all over my daughter and into the van. My wife had been sleeping on the van's floor and woke up just in time to feel the wheels come off the pavement as we encountered soft dirt on the roadside. We felt the van tilt and roll over at least twice before landing on its right side.

My daughter and son were screaming. I reached down from my now-elevated seat, brushed the glass shards off my daughter and found her unhurt. I then looked to the rear to check on my wife and son. He was firmly strapped into his car seat while my wife was sitting cross-legged on the interior right side of the van. Although stunned, she was amazingly calm. I repeatedly asked her if she and our son were all right. Incredibly, they were.

I looked forward and was surprised the van's engine, headlights, radio and heater were still functioning perfectly. I took a breath, shut off the van and smelled for gasoline. Fortunately, I didn't smell any fumes. Nevertheless, I decided we needed to exit the van immediately. I removed my seat belt, carefully pushed open the driver-side door, pulled myself out of the van and had my wife hand our children up to me. Then I helped my wife out of the van. A carload of boys rolled up to the accident scene. They helped me move my wife and kids off the side of the van and placed them inside their warm car while I assessed the situation.

The rear hatch and the left-rear portion of the van's body and roof were caved in. The trailer had stayed connected to the hitch and rolled over with us as we overturned in the minivan. The trailer doors had popped open, scattering many of our belongings, and our cat was gone. I returned over the next few days, but I never found him. The people of Prosser were incredible and took excellent care of us during our six-day stay.

The van and the trailer were totaled. We ended up driving home in the largest rental truck U-Haul had — the only one that fit a Family of four. We spent all of our travel money and maxed-out our credit card. Thankfully, the only injury was a bruise to my wife's shoulder. The rest of our trip home was uneventful.

I've always been impatient to get on the road. On this journey, I let that get in the way of proper trip planning and risk assessment. I'd rented a trailer that was too large for my minivan. And, while I was aware of the black ice danger on the roads, I assumed my two years of winter driving had adequately prepared me for it. Unfortunately, an unfamiliar road, an extra-heavy load and a typical "GI" effort to save money proved to be my downfall.

Clearly, I should have hired a professional moving company. Also, I should have waited until the morning to leave, when much of the ice would have been melted. I also should have ensured everyone in the van remained properly buckled in.

The good thing about lessons learned is that you get the opportunity to avoid repeating your mistakes. Back then, online tools like the U.S. Army Combat Readiness/Safety Center's Travel Risk Planning System (TRiPS) didn't exist. Now that they do, I — as a full-time National Guardsman — use them. It sure beats being smashed, trashed and stranded on the road.

FYI

If you're new to towing with your POV, visit the following link: https://safety.army.mil/ and type "towing safety" in the search window.

Behold the Cold

SGT. 1ST CLASS STEVEN DECKER
Northern Warfare Training Center
Fort Wainwright, Alaska

Do you want to know the secret to staying warm? Don't get cold.

At the beginning of a winter training course here at the Northern Warfare Training Center (NWTC) at Fort Wainwright, Alaska, I'll occasionally pose that question to a group of Soldiers. Some look disappointed when I tell them the answer, but others get it right away and their whole outlook on winter training changes in an instant. By the end of the course, most of them understand the simplicity of this complex and often daunting task.

Fort Wainwright is probably the coldest post in the U.S. military. During the winter months, the temperatures regularly drop to minus 20 F or below for weeks at a time. We teach units in U.S. Army Alaska (USARAK) and, to a smaller degree, other military personnel how to operate in a cold, snow-covered, mountainous area. We train about 500 students a year who then go back and become the trainers for their respective units. The following are some of the training tips we pass down to Soldiers.

Fuel Your Body

The first step to staying warm in a cold environment is to properly fuel your body. Depending on your exertion level, Soldiers should consume between 4,500 and 6,000 calories and three-and-a-half to five quarts of water per day. Light infantrymen will require the upper end of that scale, while someone who works in the tactical operations center will be on the lower end.

Meals, Ready to Eat (MREs) provide about 1,400 calories per menu, so four per day will usually do the job. Meals, Cold Weather (MCW) provide about 1,700 per meal. However, palatability is a challenge. MCWs require rehydration for the main meal component. This is best accomplished with boiling water. You can mix cold water with MCWs, but it will take longer to rehydrate and the food won't taste as pleasant.

An MRE can be used even after being frozen, but it must not be refrozen. The main components of the meal can be placed inside clothing for an hour or so to thaw or even in a sleeping bag overnight for a "warmish" breakfast. The other part of the meal, "grazing foods," should be eaten between meals to refuel your body. Remember, a near constant calorie intake is vital to staying warm.

Cover Your Body

Clothing should do three things: insulate, ventilate and provide protection from the wind. The older Extreme Cold Weather Clothing System (ECWCS) and new seven-layer Generation III ECWCS both do this very well. The challenge is figuring out what to do with all that clothing.

The most important measure to take with any clothing system is to layer. Start out with the lightest polypropylene underwear and build from there. The layers then must be protected by a shell. The ECWCS Gore-Tex pants/jacket combo is an excellent all-round choice. The soft-shell pants/jacket from the seven-layer system works best in high-aerobic activities in very cold conditions. A complete class on the proper use of the seven-layer system and ECWCS is available for download at http://www.wainwright.army.mil/nwtc/slides.html.

Heat management is a constant challenge when operating in cold weather. Knowing when to dump or hold heat is the key. I watch students after the 10-kilometer snowshoe march and quite a few will be dripping with sweat at the finish. They invariably say, "I just wanted to get it over with." I counter with, "What would you do if you were forced to stay outside for another five or so hours?" They usually don't have an answer.

Soldiers must ventilate before it is needed and reduce insulation before a movement or exertion. The big, puffy suit in the seven-layer system is meant to be put on while static and put away when moving. Likewise, that fleece jacket may be soft and cuddly and quite the fashion accessory around post, but you really don't need to wear it on a good, long dismounted movement. If at all possible, have dry layers available to replace or upgrade clothing if needed.

Move Your Body

Cold weather requires people to be proactive. If your fingers become cold, windmill your arms to force blood into the fingertips. Cold toes? Wiggle them or swing your legs. Shivering? Exercise a little. The point is to not allow cold to gain ground in your body.

Observe the other people around you, looking beyond the obvious. We know what is wrong with the Soldier who is shivering and twitching on the ground or has a white patch on his nose. The Soldier who escapes our attention is the one who stands perfectly still with his head drawn down between his shoulders and his arms hanging stiffly at his sides. He grumbles at tiny issues, mumbles when addressed, fumbles when handling simple tasks and stumbles when walking on easy ground. This Soldier needs help now; but just as important, look for the symptoms of cold weather injury in yourself.

At the NWTC, the cadre not only trains in the cold, they enjoy the weather. Winter doesn't have to be a time of fear and loathing. Embrace the cold — but be smart about it.

+ INEXPERIENCE
INEFFECTIVE CREW COORDINATION
= DISASTER

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

The makeup of an aircrew can be an important factor in crew coordination errors. Let's examine an accident scenario involving an OH-58D maintenance test flight (MTF). We'll look at what happened, what should have happened and what we can learn from the experience.

The mission was to conduct preventive phase maintenance (PPM), which included an autorotational RPM check. The weather was agreeable, the preflight looked good and, on the surface, the crew mix seemed right for the mission. The maintenance examiner (ME) had more than 1,000 hours in the OH-58D and the pilot (PI) had almost 300 hours of flight time in the aircraft.

What Happened?

It was a typical day. The crew met in the morning to ensure the aircraft would be ready for the MTF. They had lunch later that day with other members of the unit. That afternoon, the crew received the weather briefing and, shortly thereafter, departed for the maintenance test flight area (MTFA) to conduct the PPM.

The ME sat in the right seat and the PI in the left seat. After the majority of the MTF had been conducted in the MTFA, the crew planned to complete the autorotational RPM check in the traffic pattern upon return to the airfield. On their way back from the MTFA, tower informed them that the winds had shifted and for them to use the active runway. The ME requested to remain west of the airfield to avoid a fog layer and enter left, downwind from the west. The tower approved the request and, a few minutes later, the ME requested an altitude deviation to 2,000 feet mean sea level (MSL) to conduct the autorotational RPM check. The tower approved the request and, on final approach, the aircraft entered an autorotational descent to the active runway.

During the maneuver, the ME allowed the airspeed and rotor RPM

to decrease to a level that did not allow for sustained flight. The aircraft failed to recover from the autorotative descent and crashed on the runway, destroying the aircraft and fatally injuring the two crewmembers.

What Went Wrong?

The circumstances indicate the crew failed to properly scan the aircraft's flight instruments while performing an autorotational RPM check. The ME allowed the airspeed to decrease below what is required for a steady state autorotation. As the airspeed decayed, the rate of descent increased.

When the aircraft dropped below 400 feet above ground level (AGL), the ME realized the throttle was still at idle and attempted to recover the aircraft. Unfortunately, there was insufficient time or altitude to allow the engine to spool the rotor system back to 100 percent and arrest the descent.

What Should Have Happened?

According to the MTF manual for the OH-58D, Technical Manual 1-1520-248-MTF, the pilot should have performed the following for an autorotation RPM check:

WARNING: If autorotation RPM cannot be maintained in the normal operating range, terminate the test flight. Select an altitude that will allow a power recovery climb to be accomplished by 500 feet above ground level (AGL).

NOTE: Ensure ENG ANTI-ICE and HTR switches are OFF. MTF mission gross weight is 4,500 pounds. Nr (rotor speed) should be stabilized at 100 percent ±2 percent at the selected baseline density altitude (DA) for your operating area. Nr will increase/decrease approximately 1 percent for every 1,000-foot increase/decrease in DA and/or 100-pound increase/decrease in gross weight.

(1) While maintaining 55 ±5 knots indicated airspeed (KIAS) and aircraft in trim, lower collective to the full down position when a safe touchdown area can be reached.

(2) RPM: Confirm within limits.

(3) Throttle: Reduce to idle; confirm clutch disengagement and that engine gas generator speed (Ng) is stabilized at 63 to 65 percent. Check mast torque/engine torque are at or near zero percent.

(4) Aircraft: Check pedals for sufficient right pedal remaining and cyclic for normal position; note any marked increase or decrease in vibrations and/or unusual noises.

(5) Nr: Record with aircraft stabilized at 55 ±5 KIAS and in trim.

(6) Power recovery: Perform. Climb will be accomplished by 500 feet AGL. During power application, confirm clutch engagement. Maintain airspeed above 50 KIAS on climbout.

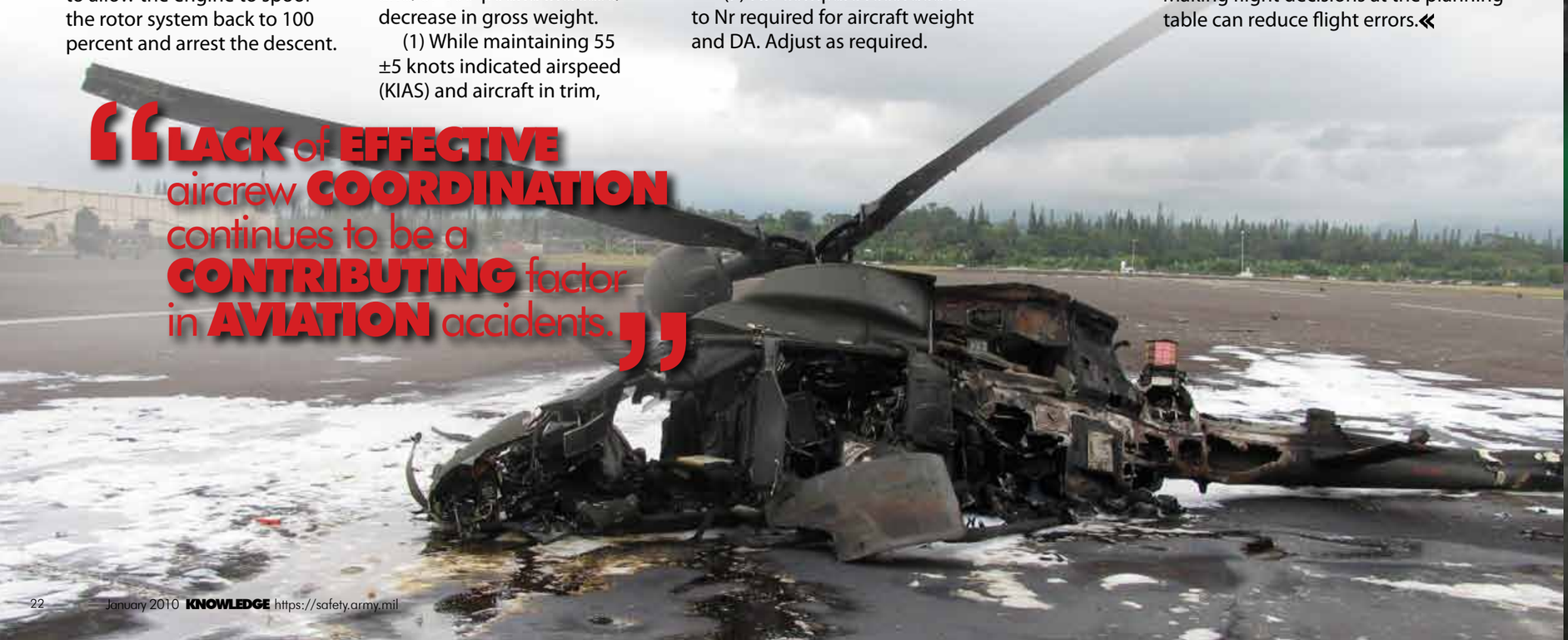
(7) Nr: Compare recorded Nr to Nr required for aircraft weight and DA. Adjust as required.

Lessons Learned

There are lessons learned from this accident scenario. First, selecting the right crew mix is extremely important in accomplishing the mission safely. Leaders must have oversight of the flight schedule and risk assessment matrix to ensure the risk is, in fact, low and includes the proper crew mix to alleviate overconfidence. Risk assessments are tools to help leadership make smart, informed decisions.

The second lesson learned is twofold: a breakdown in crew coordination and ineffective crew briefs. Lack of effective aircrew coordination continues to be a contributing factor in aviation accidents. Aircrew coordination discipline begins with the entire crew acting as a team in mission planning, execution and after-action reviews.

During crew briefs, it is essential to discuss the duties and responsibilities of all aircrew members beforehand, including alternate plans/actions should unexpected circumstances occur. Making flight decisions at the planning table can reduce flight errors.



"LACK of EFFECTIVE aircrew COORDINATION continues to be a CONTRIBUTING factor in AVIATION accidents."

SLOW CONNECTION?
LIGHTEN UP!

U.S. ARMY COMBAT READINESS/SAFETY CENTER

https://safety.army.mil/lite

The Safety Center's home page is now available in a lite capacity to allow forward-deployed Soldiers with limited Internet connectivity access to the risk mitigation tools and resources they need.

RICHARD FENNER
43rd Sustainment Brigade
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Get to Know Your Manuals

Technical manuals (TMs) are designed to ensure Soldiers and civilian personnel follow the proper procedures and heed safety warnings when operating equipment. Furthermore, Army Regulation (AR) 385-10 and the unit safety program provide additional guidance on procedures units should adhere to when conducting assigned missions or tasks. Unfortunately, personnel sometimes fail to follow this guidance and are seriously injured or killed.

Units are mandated to have the appropriate TMs on hand for each piece of equipment within their respective unit and for each mission. Sometimes, however, personnel view a task as so routine that they choose to do it from memory rather than use the TM. These folks might even question why we use TMs in the first place. Well, the answer to that question is simple: it's because you can't memorize all the step-by-step procedures and safety warnings in them. For the Soldier mentioned in the following accident sequence, reading the TM would have saved him a world of pain.

> "**SOLDIERS** also must be **PROPERLY** trained and **READ** the equipment's **TM** before **STARTING** any **TASK** or mission, no matter how **ROUTINE** or **SMALL** it may **SEEM.**"

The Accident

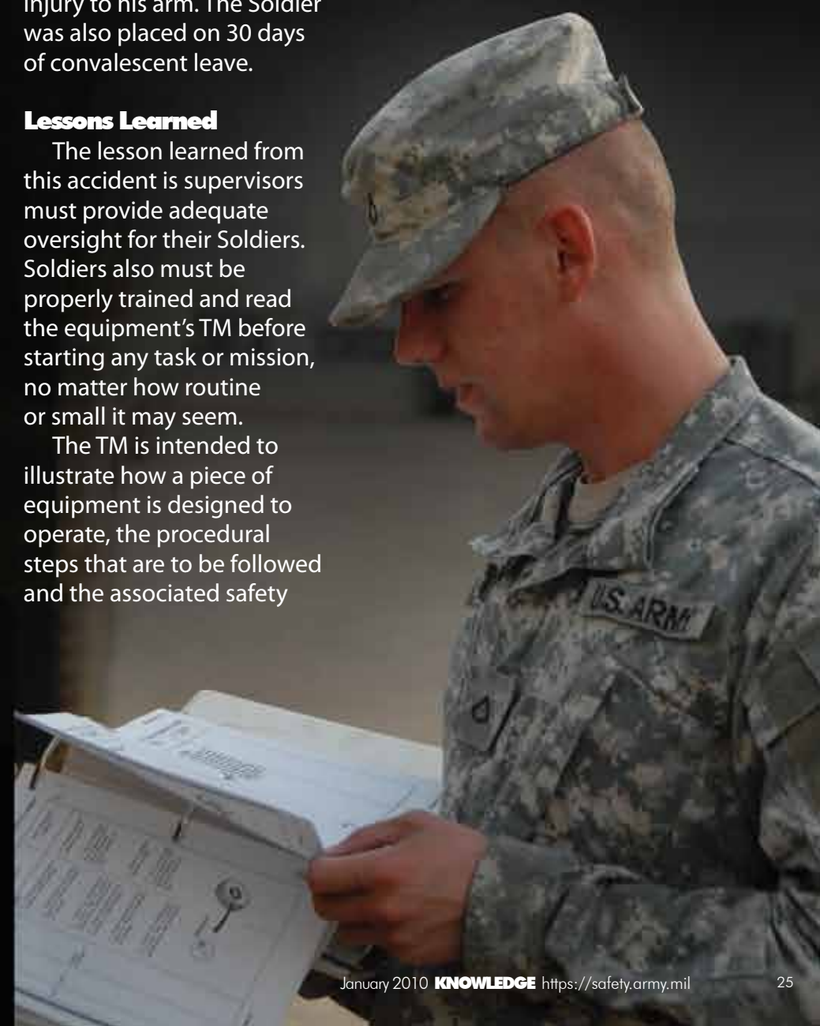
One afternoon, a group of 88M (motor transport operator) Soldiers were given a standard routine task: conduct routine maintenance on M3 Container Roll In/Out Platforms (CROPs). A Soldier who was untrained and had very little experience was removing one of the two retaining pins that held a critical piece of the equipment in place. Neither the supervisor nor the Soldier had read the TM, which revealed that this procedure involved using a lifting device such as a crane.

As the Soldier removed the last pin, the 370-pound CROP arch fell onto his right arm. Other Soldiers in the immediate area quickly rendered first aid while another Soldier summoned a noncommissioned officer to the scene. The injured Soldier was transported to a hospital, where he underwent several surgeries to fix the injury to his arm. The Soldier was also placed on 30 days of convalescent leave.

Lessons Learned

The lesson learned from this accident is supervisors must provide adequate oversight for their Soldiers. Soldiers also must be properly trained and read the equipment's TM before starting any task or mission, no matter how routine or small it may seem.

The TM is intended to illustrate how a piece of equipment is designed to operate, the procedural steps that are to be followed and the associated safety and warning hazards. Never become complacent and deviate from following the standard practical procedure of reading an equipment TM. It might just save your life, your Soldiers' lives or prevent injury to others around you.



Cheating Death

CHIEF WARRANT OFFICER 2 HERBERT W. STOVER IV
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Sandston, Va.

While most Soldiers, Sailors, Marines and Airmen concentrate on the insurgent enemy in Iraq, Army aviation faces a unique enemy not associated with any political faction. That foe is deteriorating weather conditions. In the following case, encountering instrument meteorological conditions inadvertently endangered the lives of all onboard four aircraft.

As with every mission, we ran through our checklists, paying particular attention to the weather. We requested current and forecast weather conditions from several different agencies. While in Iraq, we noticed most weather reports were skewed or, as the pilots sensed, deceptive.

Our minimum requirements for night flying were a 1,000-foot ceiling and three statute miles visibility. Every night that we checked the weather, the current condition reports and forecasts were inaccurate. Weather professionals weren't always accurate at home station either. In fact, they were wrong a lot too. However, in Iraq, we wondered if there was command pressure to not report below the legal limits, forcing aircrews to launch and fly the missions.

This particular time, we checked weather and, you guessed it, the current conditions and forecasts all said we would experience visibility no less than three miles — right at our minimum to fly — through expected time of arrival (ETA) plus one hour. Our instincts and the cloudy skies we'd seen on our way in to work told us to consult the satellite imagery on the Internet to see what was brewing in the area. We saw large swirls of thick clouds moving our way, but the forecasts and current conditions issued by the weather agencies cited nothing but clear weather for the night … at least "clear" as defined by the three-mile visibility requirement extending through our ETA by at least an hour.

At the preflight briefing, the briefing officer started with, "This is a lie, but I'll read it to you anyway," and then read the official weather forecast. We requested a more detailed forecast, specifically asking about the activity we were seeing on the satellite. Again, we were told weather was not going to be a factor during our flight period. We reviewed our flight route and, to mitigate our perceived risk, planned weather checks at specific points during the flight. Then, we took off on the mission.

The first leg left us with no doubt that the weather was acceptable to make the next leg of the trip. We continued heading east into Baghdad, flying away from our suspected foul weather coming in from the southeast. As we continued the mission, we began to see lightning flashes through our night vision goggles (NVG). While they were not visible to the naked eye, they were close enough that we requested weather updates over the radio before our planned weather checkpoints farther to the east.

The controlling agency over Baghdad gave a legal visibility report and made no mention of lightning or impending storms. "Let's hurry up because something is brewing and these bastards aren't admitting it," the pilot in command (PC) called over the radio to the other aircraft as we made our cargo drop and pickup in Baghdad.

We took off and asked the controlling agency for a weather update. Again, we were told nothing significant. The passengers had no idea what was transpiring in the cockpit or in the air around them. They trusted us to keep them safe and do the right thing; however, the system was failing.

Suddenly, lightning struck just to the east of our location. By our estimation, it was about five miles away. We called the controlling agency and reported the adverse weather we were

> "If **CREWS** don't **PERFORM** composite **RISK MANAGEMENT** and double-check **WEATHER INFORMATION** from several different **SOURCES**, then Army **AVIATION** will have more **INCIDENTS** like this."

experiencing. This was the first true weather update the system received, which was then reported to other aircraft. Knowing there were several aircraft sorties in the sky between Al Taqaddum (TQ) and Baghdad, we felt the need to correct the forecast weather reports with pilot-observed updates called PIREPS. We joked in the cockpit that our reports wouldn't be communicated to the other flight crews.

We flew west, heading back to TQ, thinking the weather was behind us to the east over Baghdad. However, our goggles suddenly picked up lightning in front of us to the west. As the pilot not on the controls, I announced the conditions and took off my NVG to see if the lightning was visible with the naked eye. It wasn't.

Halfway back to TQ, heading west, we changed controlling agencies and requested a weather update from Fallujah. The update went something like this, although I'm not 100 percent certain about the ceiling height, though it was way above our minimum of 1,000 feet:

"Winds from the south at five knots, visibility five miles with a ceiling of 20,000 feet."

The PC broke squelch and asked Fallujah, "What about any reporting of thunderstorms?"

Fallujah replied with, "Nothing has been reported within 40 nautical miles, sir."

Over the intercom, the PC asked, "Am I crazy? Doesn't that lightning look closer than 40 miles away?" Then, keying the radio to the Fallujah controller, he said, "Well, I'm not sure what your source for weather is, but it's wrong. And if you'd step outside and look, you would see there is lightning within 40 miles of here. Thanks for the update. We're on our way to TQ."

With that bitter exchange, we continued to the west thinking the worst of the weather was behind us, until we noticed the visibility dropping. TQ is only a 15-minute flight from Fallujah. Five minutes west of Fallujah, the visibility dropped to less than three miles. We began preparations for landing when the visibility dropped to almost nothing. The runway was less than four miles from our position and we couldn't see it. Each station in the aircraft announced visibility less than a half-mile.

This is when we began to sweat profusely. We went into survival mode, relying on our training and gut instincts to communicate and take actions quickly, with no time for review.

I keyed the microphone to check on the second aircraft at our six. Its crew replied they could still see us. I talked to TQ tower faster than they could talk back. Three miles out from landing, we declared ourselves en route to the airfield but then pulled a 180-degree turn for fear of other aircraft in the airspace.

"Return to Fallujah," we radioed the second aircraft. They acknowledged and followed. We called TQ tower, telling them we were outbound, heading back west, with visibility of a quarter-mile. Another aircraft came over the radio approaching TQ from the northeast, where they reported visibility as unlimited. Our response was to turn in the direction of the "unlimited" visibility. I entered a point just north of TQ into the global positioning system and called the tower for permission to change heading to the northeast, praying to break out of this mess. Permission was granted, but the visibility was no better.

Straight down was the only direction where we could see anything. We certainly had many unanswered questions: Should we land in the desert — right here, right now — even though we're outside the wire from TQ? Altitude — 200 feet. Map out. Are there towers below us? Wires? Other structures? No. Open area? Good! Put it down? No! Visibility no better, left turn, straight in.

"Tower, we're inbound." Three-tenths of a mile, no runway lights; two-tenths, a dim line; going straight down; one-tenth, a runway. Whew! OK, here we are.

"Tower, we're landing here and shutting down on taxiway Romeo."

We set the brakes and parked the aircraft. I looked at the PC and he looked at me. We both had smiles on our faces that said, "We did it, don't want to do it again and holy crap, let's get out of this thing!"

The relief was like nothing I'd ever experienced. My chest felt like a 1,000-pound brick had been lifted off it. I took the largest, deepest breaths I'd ever taken. Shutdown was quick and we started shedding our equipment quickly. We wanted out and to put our feet on solid ground, under our terms. There were three other aircraft with crews similarly elated to be on the ground. As the crews met on the taxiway, one of the more experienced pilots shook my shoulder and said, "Well, you're not a virgin anymore!"

This risk was not worth the reward. We were carrying troops mostly to get them out on rest and relaxation leave or pass. If crews don't perform composite risk management and double-check weather information from several different sources, then Army aviation will have more incidents like this. Statistically, we won the lottery that night. If we hadn't made it that night, the command would have had to write sympathy letters to our next of kin. The reward that night was we all lived for another mission.

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Michelle's Story

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

June 22, 2009, is a day that Spc. Michelle L. Waters of the Kentucky Army National Guard will never forget. As she got onto the highway to drive home, little did she know her life was about to forever change.

That Monday was Waters' "drop day" — an extra day off she got every other weekend for working nine-hour days as a full-time National Guardsman. She'd taken advantage of the long weekend to visit friends who lived in Ripley, Tenn., about five hours east of where she lived in Taylorsville, Ky. She'd gotten up about 8 a.m. after a good night's sleep and later hit the road. As she headed north, she stopped for gas and a soda. She'd driven the route countless times before with nothing extraordinary happening. She had no reason to believe that day would be any different.

But that day was about to become very different.

Wendy Freeman was headed southbound on Kentucky's Purchase Parkway, which offered two lanes in each direction divided by a grassy median. It was 2:50 p.m. when she saw Waters' car go out of control in the oncoming lanes.

"I just saw her kind of 'fall' (drift) off the right shoulder of the road and then it was like she overcorrected," Freeman said.

Waters, perhaps a bit fatigued behind the wheel, had drifted onto the right shoulder. Recognizing her mistake, she swerved hard to the left, sending her car out of control across both lanes and into the median. As the car plunged down the median's grassy side, it slammed nose-first into a concrete culvert. The violent impact sent her Honda Accord cartwheeling down the median into the oncoming fast lane, landing upright in front of Freeman. Avoiding the wreck, she stopped and ran to Waters' car to see if she could help.

"The car was totaled and she was unconscious when I got to her, but she came around quickly," Freeman said. "By the time the ambulance got there, she was coherent."

The accident scene was only a few miles from Benton, Ky., the location of the Marshall County Sheriff's Department. Deputy Dennis Lewis had been on duty less than an hour when he got the call from the dispatcher.

"It was 'toned-out' to emergency medical services (EMS) and the fire department with a 'serious overturned entrapment,' meaning that the driver was unable to get out of the vehicle under their own power," he said. "All agencies ran Signal Nine emergency traffic to her location on the Purchase Parkway."

Lewis got to the accident scene shortly after the fire department. Accident debris was scattered everywhere. He quickly went to Waters' car and looked inside. Despite the damage to the car's exterior, the driver's compartment remained relatively intact.

"She was sitting still in the driver's seat — her seat belt on — very obviously and visibly upset," Lewis said. "I don't really know that, at the time, she actually knew what had happened and what was going on. But she knew she was hurt and upset."

After EMS arrived, they faced the task of getting Waters out of the wrecked car. The driver-side door had become jammed during the crash. Lewis said, "We pried and prodded and did everything we could with the limited tools we had until, finally, we got the door to pop open."

EMS technicians carefully removed Waters from her car and placed her in an ambulance headed for Lourdes Hospital in Paducah, Ky. Although she drifted in and out of consciousness, she remembered bits and pieces of the ride.

"I vaguely remember waking up and thinking how surreal it was," she said. "It seemed like a dream — like it couldn't have been real because you don't expect things like this to happen to you. And I remember the emergency medical technician asking me for my name and for contact numbers — which I guess I provided — but I don't remember doing that. I must have passed out again and then I woke up a little bit later at the hospital."

When she arrived at the hospital at 3:43 p.m., Dr. Shiraz Patel, an orthopedic surgeon, met her and assessed her injuries. Broken glass from the driver-side window had badly cut her left shoulder. Her right elbow, Patel said, was in "horrible condition."

Waters recalled seeing Patel.

"He basically told me what had happened — that it looked like I had broken my right arm. I must have passed out again because when I woke up in the holding area, there was this little Mexican woman praying over me. I thought, 'Oh, my God, am I dying — what's going on here?'"

Patel ordered Waters be given a series of CT scans to X-ray her injuries from different angles and help him understand their extent. It wasn't a pleasant experience for her.

"I remember being X-rayed," she said. "That's really when it hit me that this is real. When they moved me from the gurney to the X-ray table, I was in an excruciating amount of pain."

Uncertain of her condition, Waters was badly shaken, according to Patel.

"She was scared — she was very scared that she was going to lose her

arm," he said. He calmed her by telling her, "Everything is going to be fine. We're going to take you to the operating room and get you comfortable real fast."

Patel knew she would need surgery within 72 hours. However, he first had to stabilize her arm and reduce the swelling that could block the blood flow to her forearm or damage the nerves to her hand. He accomplished that by splinting her arm to keep it straight and placing ice on the injury to control the swelling. On Waters' third day in the hospital, Patel decided to operate.

Waters' right elbow was shattered. Both the inner and outer condyles (the bony proturbances you can feel on the inside and outside of your elbow) were broken, leaving nothing for the bones of her forearm to move against. Left unrepaired, her right arm would be useless. Ultimately, through the use of steel plates, pins and screws, Patel was able to reconstruct her elbow well enough for her to regain about a 30-degree range of movement in her right arm when she left the hospital. In the three months since her surgery, that has improved to 80 degrees. Patel's goal is for her to improve to as much as 130 degrees — just 10 degrees short of the full range of motion. Physical therapy is helping her regain flexibility in her elbow.

Waters' dramatic accident would have had a different ending had she not been wearing a seat belt, Patel said. "She wouldn't have been here (survived to make it to the hospital) or, worse, she would have been paralyzed or in a coma," he said.

And the doctor knew whereof he spoke. Starting his career in 1993 working a trauma unit in St. Louis, he saw people die who, had they worn seat belts, would have lived to make it to the operating table. Five years later, when seat belts became mandatory and air bags had been added to supplement seat belts, he saw a huge change. Patients were coming in with new injuries the doctors hadn't seen before — things like crushed ankles from floorboards coming up or dashboard-related injuries from where they pushed back onto drivers. Those types of injuries had always been there. The difference was that accident victims who previously ended up on morgue slabs were, instead, ending up on operating tables.

Waters is grateful she survived the accident. Two days after her crash, her grandmother died in the hospital. Had it not been for her seat belt, her father — Fort Knox Garrison Command Sgt. Maj. Charles Waters — would have been attending two funerals that week — one for his mother and another for his daughter. It's a grief he described as "unimaginable."

"You never know — tomorrow is not guaranteed," Waters said. "The decisions you make in your life, they don't just affect you — they affect your Family, friends and colleagues at work."

As Waters considered what might have happened that day, tears flowed from her eyes.

"It kills me to think I could have put my Family through a double funeral," she said. "I'll never take them for granted. The fact something like this happened shows you just how fragile life is."

Being a Father, NCO and Leader

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

Command Sgt. Maj. Charles P. Waters is Army through and through. A tough, career Soldier with 30 years of service, he has served in armor and cavalry units. He saw combat during Desert Shield/Desert Storm and Operation Iraqi Freedom. During the past three years, he has served at Fort Knox, Ky., as the garrison command sergeant major.

June 2009 was a tough month for Waters and his Family. His mother had undergone open-heart surgery in a hospital in South Carolina and then suffered deadly complications. He'd just left the hospital one afternoon when his wife's cell phone rang. An emergency medical technician (EMT) in an ambulance hundreds of miles away was calling with information that would drive the Family deeper into crisis.

Waters said, "The person on the other side of the phone asked my wife, 'Are you the parents of Michelle Waters? My wife said, 'Yes, what's wrong?' and she said, 'Your daughter was involved in an accident.' At that time, my wife quickly handed the phone over to me. I spoke to the lady and she gave me what information she could at the time."

The news put him in an emotional bind. At that moment, his mother was struggling for life in the hospital. At the same time, his daughter was being rushed to Lourdes Hospital in Paducah, Ky., for emergency surgery after her car cartwheeled multiple times. His heart was torn in both directions.

"There is always the fear of the unknown," he said. Although the EMT explained his daughter had been stabilized, there was no way of determining the extent of her injuries at that moment.

"I was concerned about that and I was torn between trying to figure out how we were going to divide forces to deal with both critical issues at the same time," Waters said. "It made it difficult on the Family, to say the least."

Waters' mother passed away two days after his daughter's accident. Michelle was released from the hospital about the same time as her parents came back from South Carolina. In no condition to drive or take care of herself, a friend drove her back from Paducah to her parents' house in Elizabethtown, Ky. Her father remembered how he felt when he saw his badly injured daughter.

"I was relieved by the fact that she was still alive," he said, thankful Michelle had used her seat belts, which saved her life. "I was also told the preliminary report said there's only two ways folks normally come from an accident like that — they're either paralyzed for life or they're dead. I felt blessed that she was still with us."

Waters knows what it means when someone doesn't survive. While stationed at Fort Polk, La., he had a Soldier who was not so fortunate. The Soldier fell asleep, ran off the road, struck a tree and was killed.

"The report stated he was not belted in and he was thrown from the vehicle," Waters said.

While he may take his beret off when he walks through his front door at night, Waters never takes off his "safety" hat. He knows his responsibility for the safety

of his Soldiers doesn't end at the end of duty hours. He knows that what happens off duty affects what happens on duty.

He said, "You look at the statistics that are briefed to the chain of command that come down through the Army system. You see if there is any way you can reach out to the younger generation and, in some cases, the older generation, through the safety briefs in such a manner that it will relate to them."

Sometimes that means being a bit creative, he said. While at Fort Polk, he would scan the police blotter for "teaching" opportunities. He'd make the stories generic and interesting by pulling out the names and injecting a bit of humor. He'd pull the Soldiers together on Mondays during command maintenance to pass along a few jewels.

"We used to call them 'CNN Downloads,'" he said. "The Soldiers actually liked it from a perspective that only 'certain' Soldiers do crazy things that just make you scratch your head. I would try to make it somewhat entertaining, but the point was always going back to what not to do."

And it wasn't just his Soldiers who got the treatment — he shared them with his Family.

"Safety is a choice that you make in life. It's a lifestyle that you live, and you have to view it from that perspective," he said. "You have to address this from an issue that really hits close to the heart — the fact that if you really like life and enjoy living, you have to protect yourself. You could be the best driver in the world and still not be around tomorrow if a bad driver hits you."

That point hit home with Michelle as she grew up. Buckling up when she got inside a vehicle became second nature. But what if it hadn't been? What if she hadn't buckled up that June morning?

"I'm not sure how I would have handled that," Waters said. "… I can't possibly imagine how tough it would be going from Mom's funeral to Michelle's all in one week. Michelle is my first-born. She has so much potential to just to go out and grab life and enjoy it. It means the world to me and her mother that we still have her in our life. I believe that those in our world would be a lot less happy if she were not still with us."

MAKING THE MESSAGE STICK

BOB VAN ELSBERG
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Getting Soldiers to buy into the idea of managing the risks in their life isn't always easy. Because many see themselves as young and invincible, they don't understand the importance of making "safe" decisions. According to Fort Knox Garrison Command Sgt. Maj. Charles P. Waters, this creates another opportunity for noncommissioned officers (NCOs) to exercise leadership.

"I think we need to be aggressive and attack what we know to be right when it comes to safety and driving POVs," he said. "We cannot allow Soldiers to violate standards because there is a cost. If our most precious resource is the Soldier, then they deserve our greatest efforts to protect them."

But getting Soldiers to understand that can be tough, Waters said.

"All of these things can fall on deaf ears if you're not careful," he said. "You've got to remember your audience and ensure that when you engage them the message is being received. Sometimes that is easier said than done with the generation that we have today. I like inputting humor into it. If you have a standard safety brief, sometimes you've got to change it up a little bit — spice it up so that they still get the point when they walk away."

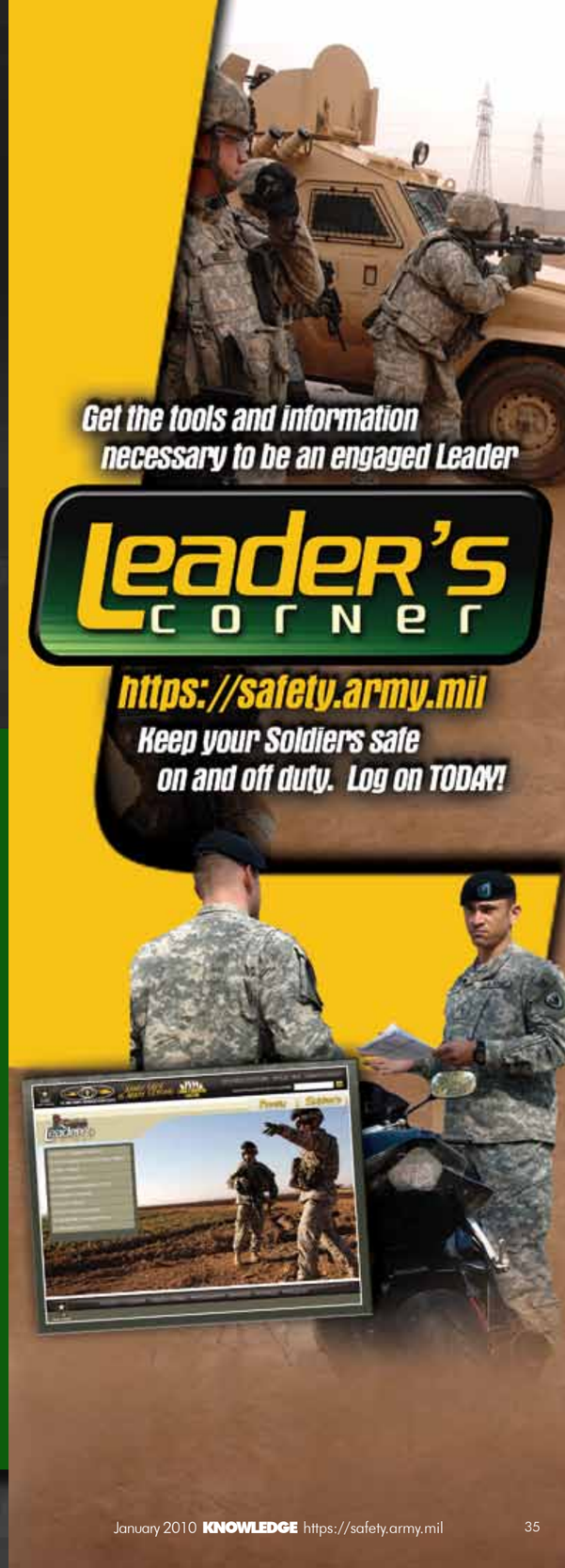
Beyond the humor, Leaders are responsible to ensure their Soldiers meet the standards.

"I think the most important thing we, as Leaders, need to do is constantly watch for violations with our Soldiers when we see them in day-to-day operations," he said. "We have to hold them accountable and make sure if we see violations, we correct them on the spot. Regardless how busy we are, we must take the time to make on-the-spot corrections and hold them accountable."

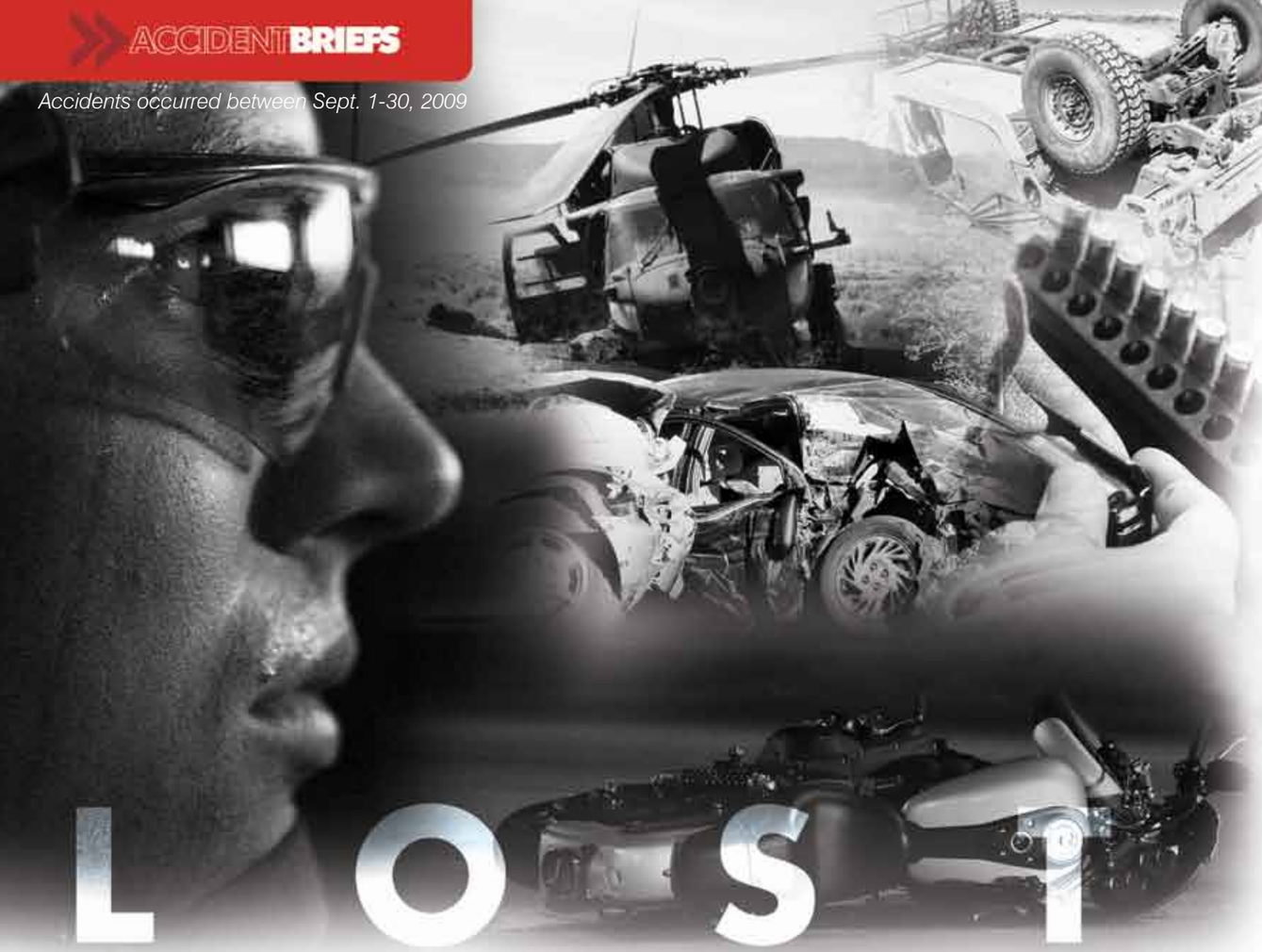
Holding Soldiers accountable helps them grasp the serious consequences of their decisions — consequences they might not recognize at the time. Waters explained that when Soldiers realize it only takes a fraction of a second to lose control of their vehicle and die in an accident, they take life more seriously.

NCOs who wear their stripes with authority and uphold safety standards can make a real difference, Waters said.

"It's by our actions and aggressiveness that we can impact the world in which we live and those we come into contact with on a daily basis," he said. "That's true whether they be Soldiers, civilians who work for us or our own Families."



Accidents occurred between Sept. 1-30, 2009



AVIATION

AH-64D

CLASS A

- The aircraft contacted the ground during a descending turn and sustained severe damage.

CLASS C

- The aircraft experienced a No. 2 generator fire while the crew was repositioning from the forward arming and refueling point to parking.

OH-58A

CLASS B

- The pilot was returning to the airfield after refueling when he reported engine surges and uncommanded yaws. The pilot performed an autorotation, resulting in a hard landing.

OH-58D(I)

CLASS A

- Fire initiated onboard the aircraft during run-up for flight. The crew was able to egress without injury.

OH-58D(R)

CLASS B

- The aircraft's right skid tube contacted terrain during close combat attack operations. The air bags deployed; however, the crew maintained level flight and returned to the forward operating base.

TH-67A

CLASS B

- The aircraft main rotor system contacted terrain during a slope landing iteration.

UH-60A

CLASS A

- The aircraft crashed as the crew was returning to home base in deteriorating weather.

CLASS C

- The aircraft main rotor system contacted trees during confined area operations. All four blades sustained damage.

UAS

RQ-5A

CLASS C

- The nose landing gear of the unmanned aircraft contacted the arresting gear drum on the runway as the crew was conducting an abort-takeoff procedure, causing the landing gear to separate from the fuselage.

GROUND

ACV

CLASS A

- Two Soldiers died when a bridge collapsed as they drove their M1126 Stryker across it during a five-vehicle convoy movement. The Stryker fell about 50 feet and overturned in a dry riverbed. Five other Soldiers aboard the vehicle were injured and evacuated to a medical center.

AMV

CLASS A

- Two Soldiers suffered fatal injuries when their M1151 HMMWV overturned after striking a dirt mound in the roadway.
- A Soldier was killed when the M1151 HMMWV he was operating overturned.
- A Soldier was fatally injured when he was struck by a government vehicle driven by another Soldier.

Personnel Injury

CLASS A

- A Soldier suffered fatal injuries when the loaded rifle he was handling fired and struck him in the eye. At the time of the accident, the Soldier was attempting to spin the rifle.

DRIVING

POV

CLASS A

- A Soldier was negotiating a curve in his privately owned vehicle (POV) when an oncoming vehicle crossed the centerline and hit him head-on. The Soldier's vehicle overturned and he suffered fatal injuries. The Soldier was wearing his seat belt.
- A Soldier was driving with two other Soldiers as passengers when he drifted into the oncoming lanes of traffic. A tractor-trailer in the oncoming lanes swerved onto the right shoulder, but was unable to avoid hitting the Soldier's POV. The Soldier was evacuated to a local medical center, where he later died during surgery. Both passengers survived with non-life-threatening injuries. All three Soldiers were wearing their seat belts.
- A Soldier was driving her POV when she drifted off the right side of the road, overcorrected and caused the vehicle to overturn and enter the median. The driver, who was not wearing her seat belt, was ejected. She was taken to a medical facility for treatment, but died two days later after being removed from life support.

ARMY AVIATION LOSSES

Fiscal 2010

as of Dec. 3, 2009

	Class A/Fatalities
ATTACK	0/0
RECON	1/2
UTILITY	2/1
CARGO	1/0
TRAINING	0/0
FIXED-WING	1/0
UAS	1/0
TOTAL	6/3

ARMY GROUND LOSSES

Fiscal 2010

as of Dec. 3, 2009

	Class A/Fatalities
AMV	3/2
ACV	2/2
PERSONNEL INJURY includes weapons-handling accidents	6/7
FIRE/ EXPLOSIVE	0/0
PROPERTY DAMAGE	0/0
TOTAL	11/11

- A Soldier was driving his POV en route to his duty station when an oncoming vehicle crossed the centerline and struck him head-on, killing him on impact.
- A Soldier lost control of his POV, slid passenger-side first into an intersection and collided with a van. The Soldier was pronounced dead at the scene.
- A Soldier in emergency leave status was located by a state trooper at the scene of a single-vehicle crash. The Soldier had driven off the road and struck a tree, resulting in fatal injuries.
- A Soldier was on emergency leave when his POV left the road on an S-curve, crossed the median and oncoming lanes and struck a building. The Soldier was taken to a medical center, where he died three days later.
- A Soldier was driving his POV with another Soldier as a passenger when he lost control, left the road and struck a tree. The Soldier-passenger was taken to a medical center, where he was pronounced dead.
- A Soldier was driving his POV while on post-deployment block leave when he went through a T-intersection and descended 30 feet into a water-filled ravine. The Soldier died at the scene.

POM

CLASS A

- A Soldier was riding his newly purchased privately owned motorcycle (POM) when he collided head-on with an approaching sport utility vehicle. The Soldier, who was reportedly wearing all required personal protective equipment, was pronounced dead at the scene.
- A Soldier was riding his POM and leading two other riders when he struck the rear of a vehicle stopped in the left lane to make a left-hand turn. The Soldier, who was wearing his helmet, suffered fatal injuries.
- A Soldier riding with a group lost control in a curve, entered the shoulder and struck a guardrail, suffering fatal injuries. The Soldier was wearing his helmet.

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.

POV DRIVING LOSSES Fiscal 2010

as of Dec. 3, 2009

	Class A/Fatalities
CAR	8/9
SUV/JEEP	2/2
TRUCK	2/2
MOTORCYCLE	4/4
PEDESTRIAN	3/3
OTHER*	1/1

*Includes: vans and ATVs

21 TOTAL DEATHS

Fiscal 2009: 21 3 year average: 18

READY FOR THE RISK?

The Ground Risk Assessment Tool is designed to aid in mitigating risk by reinforcing the five-step composite risk management process. Using this tool in concert with military decision-making processes will help Army Leaders achieve success in their missions and make safety an integral part of their planning. Visit the USACR/Safety Center Web site today and try it out for yourself.

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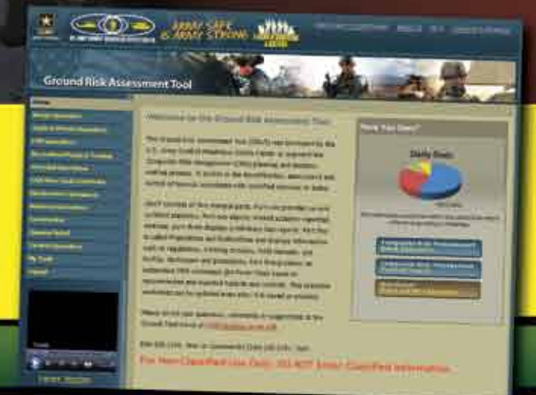
- REDUCE ACCIDENTAL LOSS
- INCREASE COMBAT POWER



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A BAND OF BROTHERS & SISTERS

GUNNER RESTRAINTS: KEEPING SOLDIERS IN THE FIGHT p. 10

KNOWLEDGE

VOL 4 JANUARY 2010

OFFICIAL SAFETY MAGAZINE OF THE U.S. ARMY

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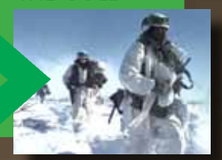

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Mission statement: The United States Army Combat Readiness/Safety Center (USACR/Safety Center) supports our Army by collecting, analyzing and communicating actionable information to assist Leaders, Soldiers, Families and Civilians in preserving/protecting our Army's combat resources.

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

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FROM THE DASAF

"WE SAW in 2009 that ENGAGED LEADERSHIP at ALL LEVELS of command DOES indeed WORK in KEEPING our SOLDIERS SAFE and MISSION-READY."

RENEWING THE COMMITMENT TO SOLDIER SAFETY

Happy New Year to everyone! January brings a sense of renewal and an opportunity to reflect on our past missteps and successes and map out a plan to make the coming year the best yet. Regarding accidents, our Army had a pretty good year in 2009. In fact, it was the best year since the terrorist attacks of Sept. 11, 2001. We can do even better in 2010 by taking a look at where we've been, finding those areas we can improve and renewing our commitment to keeping our great Soldiers, our "Band of Brothers and Sisters," safe in the months and years ahead.

A BAND OF BROTHERS & SISTERS

Here's a broad look at the numbers for fiscal 2009. Overall, Army fatalities were down 16 percent from fiscal 2008, with a reduction of just over 42 percent for the five-year period since the beginning of fiscal 2005. That's great news for the Soldiers, Families and civilians who make up our Army team and for engaged Leaders who have put forth great effort to drive down unnecessary losses.

We cannot allow positive statistics to lull us into complacency, however. The bottom line is 173 Soldiers were killed in accidents in fiscal 2009, the vast majority of them in off-duty privately owned vehicle (POV) accidents. Although both POV and motorcycle fatalities were down by about 13 percent in 2009, two specific factors — alcohol and/or speed — contributed to more than half these accidents. We also didn't reduce accidents across the board in 2009; fatalities in both Army Motor Vehicles and Army Combat Vehicles rose slightly from numbers logged in 2008.

We saw in 2009 that engaged leadership at all levels of command does indeed work in keeping our Soldiers safe and mission-ready. We've also learned Soldier-to-Soldier and direct Family engagement are vital to our safety programs. Leaders, please continue to search within your formations for those areas that need improvement while simultaneously strengthening your proven safety practices. I encourage all Leaders to utilize our Leader Risk Assessment, Individual Risk Assessment and the soon-to-be-released "Soldier-to-Soldier" Assessments to gain insights into their formations and develop a way ahead.

Our problems with off-duty Soldier indiscipline call for Leaders to personally engage their Soldiers regarding individual responsibility in off-duty activities, particularly behind the wheel of a POV. Similar effort is needed on the tactical side, where fatal accidents involving speed and nonuse of restraint systems remain an all-too-common occurrence. "Safety sense" while driving is especially important during this time of year, when many of our Soldiers will encounter snow and ice conditions in both their personal and tactical vehicles.

I am confident we can capitalize on this past year's many safety successes and make 2010 an even safer year for our total Army Family. A strong team effort and steadfast dedication to safety are proven winners in our strategy to eliminate needless losses, and the U.S. Army Combat Readiness/Safety Center stands ready to help as you renew your commitment to Soldier safety in 2010 and beyond.

Thank you for all you do to make each and every day safe for our Soldiers, Families and civilians. Have a happy, prosperous and safe new year!

WILLIAM T. WOLF
Brigadier General, USA
Director of Army Safety

HOW DID OUR ARMY DO?

Fiscal 2009 End-of-Year Review

MARY ANN THOMPSON, CHARISSE LYLE AND GLEN DAVIS
G5, Operations Research and Systems Analysis
U.S. Army Combat Readiness/Safety Center
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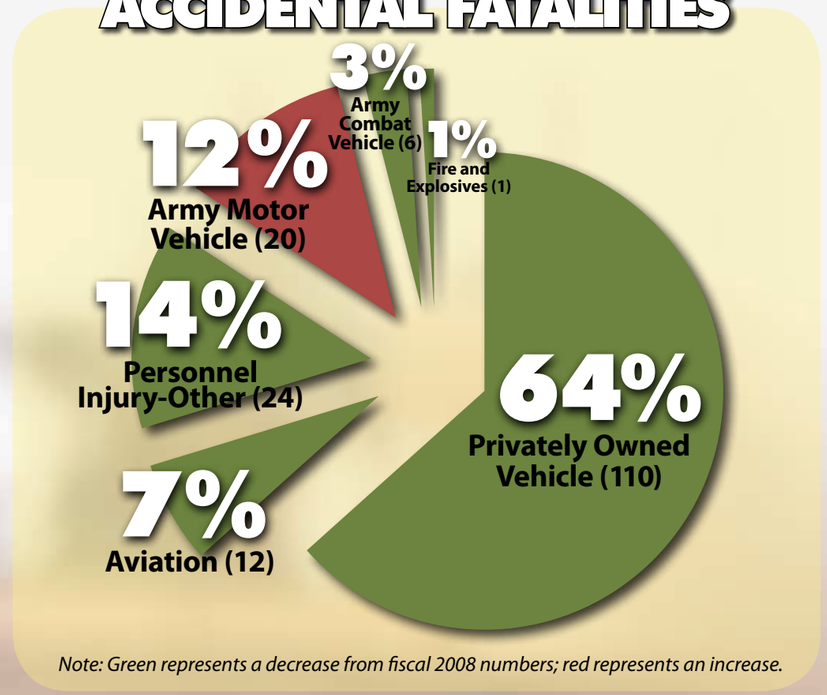
The Army's accidental fatality numbers dropped in fiscal 2009 to their lowest level since the terrorist attacks of Sept. 11, 2001. Additionally, the accidental fatality rate, 0.24 per 1,000 Soldiers, is at its lowest since 1974, the year the Army Safety Management Information System began. Leading the way in the decline were privately owned motorcycle deaths, which dropped by 19 when compared to fiscal 2008.

During fiscal 2009, the Army experienced 173 accidental military fatalities. Overall, fatalities were down 16 percent from the 207 experienced in fiscal 2008. As seen in the chart to the right, privately owned vehicle (POV) accidents accounted for 64 percent of the fatalities, followed by personnel injury-other (PIO) accidents at 14 percent, Army motor vehicle (AMV) accidents at 12 percent, manned aviation accidents at 7 percent, Army combat vehicle (ACV) accidents at 3 percent and explosive and fire accidents at 1 percent. This article provides a more detailed breakdown of Army on-duty and off-duty accidental fatalities during fiscal 2009.

ON-DUTY

There were 52 on-duty Soldier accidental fatalities in fiscal 2009, three fewer than in fiscal 2008. These deaths involved the AMV, ACV, manned aviation, explosive and fire and PIO. (Editor's note: In addition to these fatalities, a dismounted Soldier was fatally injured when he was struck by a POV.)



Note: Green represents a decrease from fiscal 2008 numbers; red represents an increase.

GROUND

Army Motor Vehicle

AMVs are all Army wheeled motor vehicles except the Stryker and Mine Resistant Ambush Protected (MRAP) vehicle. There were 20 Army military fatalities related to AMV accidents during fiscal 2009, two more Soldier deaths than the previous year. Of the 20 fiscal 2009 AMV fatalities, 18 occurred during Operation Iraqi Freedom/ Operation Enduring Freedom (OIF/OEF).

Tactical vehicle accidents accounted for 15 of the 20 fatalities, 12 of which involved the HMMWV. This total was three more HMMWV fatalities than in fiscal 2008. Of the 12 HMMWV fatalities, 11 occurred during OIF/OEF. The M1151 accounted for 10 of the 12 HMMWV fatalities.

Army Combat Vehicle

ACVs include all tracked combat vehicles, as well as the MRAP and Stryker. There were six ACV-related Soldier accidental fatalities in fiscal 2009, which was down one fatality from the previous year. All six of the fatalities occurred during OIF/OEF.

Three of the six fatalities resulted from MRAP vehicles overturning and fatally injuring the gunner. One Stryker accident also involved a rollover, resulting in two Soldier deaths. The remaining ACV fatality resulted from an M1117 Armored Security Vehicle rollover that fatally injured the gunner.

Explosive and Fire

There was one Soldier accidental fatality due to fire in fiscal 2009, compared to two fatalities the previous year. A Soldier in Iraq died in a fire that started when he tried to ignite a propane stove with a lit piece of paper.

Personnel Injury-Other

PIO accidents are Army accidents that involve injury to personnel not covered by any other accident type. There were 12 on-duty PIO accidental fatalities in fiscal 2009, compared to 14 fatalities in fiscal 2008.

Four of the fiscal 2009 fatalities occurred during OIF/OEF.

Physical training (PT) and weapons handling were the most frequent activities involved in the 12 PIO fatalities. Three PT-related fatalities included a Soldier suffering a heat injury during a road march, a Soldier collapsing after participating in organized flag football and a Soldier failing to surface while swimming as part of personal PT (the Soldier died four days later). There were two on-duty weapons-handling fatalities, including a Soldier death from a negligent discharge and a Soldier death from friendly fire.

Two fatalities involved parachuting, while two other fatalities involved Soldiers being pinned by falling loads. One Soldier drowned when he fell into a river while on dismounted patrol in Iraq, and a Soldier drowned while participating in recreational swimming activities. Another Soldier was presumed drowned after he fell overboard from a tug during vessel qualification.

AVIATION

The Army lost 12 Soldiers in fiscal 2009 aviation accidents, compared to 14 Soldiers killed the previous year. One-third of the fiscal 2009 fatalities occurred in OIF/OEF. The UH-60 Black Hawk, OH-58D Kiowa Warrior (KW) and AH-64 Apache were involved in these fatal accidents.

As depicted in the chart on page 7, fiscal 2009 Class A and B manned aircraft accidents increased by seven and three, respectively, from fiscal 2008. Class C accident numbers show a substantial decrease from fiscal 2008. However, in accordance with Army Regulation 385-10, units have 90 calendar days to submit their Class C accident reports to the USACR/Safety Center. Therefore, this number will change as more reports are received.

Aviation Accident Areas of Concern

Power management. Power management errors caused four Class A accidents, three in the Black Hawk and one in the KW, and resulted in four Soldier deaths. All occurred in a mountainous environment and involved mission-planning errors. In three of these accidents, the crews did not take the prevailing tail winds into consideration.

Materiel failures/ malfunctions. Three of the fiscal 2009 fatalities occurred in two accidents involving materiel failures: An engine failure in an AH-64D and an uncommanded flight control input of unknown origin that caused a pilot-induced, low-airspeed left pedal turn to become uncontrollable in a UH-60L. Additionally, there were 12 nonfatal accidents caused by definite or suspected materiel failures or malfunctions (five Class A, two Class B and five Class C). In three of the 14 accidents, the crews responded incorrectly to an in-flight materiel failure (two full authority digital electronic control [FADEC] failures and one engine failure), which increased the severity of the accidents.

Wire strikes. There were two Class A wire strikes, both occurring in Iraq at night during night vision goggles (NVG) flight, which resulted in two fatalities.

Inadvertent instrument meteorological conditions (IIMC). One fatal accident in Iraq involved an incorrect response to IIMC. While attempting a nighttime visual meteorological conditions approach, the crew encountered IIMC but did not immediately initiate IIMC recovery procedures and transition to instruments. This delay allowed the pilot on controls to experience spatial disorientation and lose aircraft control, resulting in a destroyed aircraft, one Soldier fatality and 12 injuries.

Maintenance test flight (MTF) autorotational checks. Two Soldiers were fatally injured when their OH-58D(R) impacted the runway during an MTF autorotational check. The maintenance test pilot (MP) failed to ensure the throttle was increased to 100 percent before attempting the power recovery, thereby allowing airspeed and rotor rpm to decrease below that required for sustained flight. A similar accident occurred in which another MP also failed to return the throttle to full power, causing the OH-58D(R) to impact the ground with Class A damage and injuries, but no fatalities.

Emergency procedures training. Eleven accidents occurred during emergency procedures training (one Class A, three Class B and seven Class C). The majority of these accidents involved simulated single-engine failures (seven in single-engine and two in dual-engine aircraft) and two OH-58D(R) FADEC manual throttle operations.

Brownout. There were four brownout accidents: one Class A with no fatalities and three Class B. All occurred in OIF/OEF during landings at night under NVG.

A common thread across the fiscal 2009 aviation accidents was a breakdown in crew coordination, which contributed to 43 percent of the Class A accidents. Examples include crewmembers failing to monitor flight instruments or assist in obstacle clearance and failure of crewmembers to announce decisions or actions that affected the ability of other crewmembers to properly perform their duties (e.g., announce go-around).

MANNED AVIATION ACCIDENTS

SOLDIERS KILLED IN POV ACCIDENTS

Vehicle Type	Fiscal 2009	Fiscal 2008	Increase/ Decrease
Motorcycle	32	51	-19
Sedan	40	44	-4
Other POV	32	30	2
Pedestrian	5	4	1
Totals	109	129	-20

SOLDIERS KILLED IN MOTORCYCLE ACCIDENTS

Motorcycle Type	Fiscal 2009	Fiscal 2008	Increase/ Decrease
Sport	20	37	-17
Cruiser	10	7	+3
Not Reported	2	7	-5
Totals	32	51	-19

OFF-DUTY

There were 121 off-duty accidental fatalities in fiscal 2009, including those related to motorcycles, sedans, other vehicles, pedestrians, PIO, sports and human movement.

PRIVATELY OWNED VEHICLE

Fiscal 2009 ended with 109 off-duty POV Army military fatalities — 20 fewer than the previous year. The reduction in POV fatalities was accounted for largely by the decrease in fatal sport motorcycle accidents.

With many fiscal 2009 accident reports still pending, the USACR/Safety Center does not have a complete list of the causes of these accidents. However, current data indicate indiscipline to be among the leading causes of fatal POV accidents. When Soldiers know what's right but willfully choose an alternate course of action, we call that choice "indiscipline." Indiscipline can take many forms, including speeding, failure to wear a helmet or seat belt and driving under the influence.

Motorcycles

Speeding was involved in 17 motorcycle fatalities in fiscal 2009. Of these, 12 Soldiers were riding sport motorcycles, four were riding cruisers and one was on an unidentified motorcycle type. Failure to wear helmets contributed to the deaths of four riders — two on sport motorcycles and two on cruisers. Leaders comprised the largest portion of fatal motorcycle accidents in fiscal 2009, with 73 percent of the victims between the ranks of E5-O2.

Sedans

In fiscal 2009, 40 Soldiers were killed in sedan accidents, a reduction of four fatalities from fiscal 2008. Again, indiscipline appears to be a leading cause in these accidents. Sixteen Soldiers were killed in accidents involving excessive speed. Although wearing a seat belt is a proven method for reducing fatalities in POV crashes, many Soldiers still choose not to buckle up. In fiscal 2009, 12 Soldiers killed in sedan accidents were not wearing seat belts.

Other POV

Other POVs include all-terrain vehicles, bicycles, Jeeps/SUVs/utility vehicles, station wagons, trucks and vans. In fiscal 2009, 32 Soldiers were killed in other POV accidents, two more than in the previous year.

Indiscipline figured prominently in these losses as well. As with sedan and motorcycle fatalities, speed was a leading cause of the fiscal 2009 other POV fatal accidents. Ten Soldiers were killed in accidents where excessive speed was involved. Failure to wear seat belts was also a factor in several of the fiscal 2009 accidents. Of the 32 Soldiers who were killed, 10 were not wearing seat belts.

Pedestrian

Five Soldiers were killed as pedestrians in fiscal 2009, an increase of one over fiscal 2008. Three of the five Soldiers died while attempting to cross multi-lane highways.

Personnel Injury-Other

Off-duty PIO accidents in fiscal 2009 resulted in the deaths of 12 Soldiers. This is a significant decrease from fiscal 2008, when 22 Soldiers were killed.

Three of the fiscal 2009 Soldier fatalities resulted from water-related activities, including a Soldier who drowned when his raft overturned, a Soldier who drowned while swimming in a lake and a Soldier who died from hypothermia after falling into a river.

Three Soldiers died from the negligent discharge of personal weapons, which included a rifle, shotgun and handgun. Two Soldiers died in parachuting accidents, one in a recreational skydiving class and the other while BASE (buildings, antennas, spans and earth) jumping. A Soldier was killed when he fell from a barracks window; a Soldier died from carbon monoxide poisoning inside his residence; a Soldier died when he walked through a glass door, severing an artery in his arm; and a Soldier died after he was struck by a tree that was being cut down.

CONCLUSION

While the Army closed fiscal 2009 with an overall 16-percent decrease in Soldier fatalities, there is still much that can be done to prevent off-duty losses, which accounted for 70 percent of the total accidental fatalities. The many on-duty safety programs and policies that protect our Soldiers, in both combat and in garrison (on-duty), have to be applied in our approach to off-duty safety.

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 their responsibility and mission. Composite risk management should be inherent in every decision and Leaders must remain vigilant to protect against risk and prevent accidents to preserve our force.

We must also remember that our Band of Brothers and Sisters does not dissolve when the duty 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. Likewise, our Families have a strong influence over their Soldiers, especially during off-duty time. Families, friends and peers are our Soldier's off-duty battle buddies and have the responsibility to remain watchful of the increased hazards associated with off-duty activities.

We all must embrace Army safety and use the tools, programs and lessons learned to protect our most vital resource — our Soldiers — both on and off duty in combat or home station and off-duty with Family and friends. Our Army simply cannot afford to give accidents the opportunity to strike again; we must remain vigilant about safety and apply composite risk management to all our daily activities, both on and off the battlefield. Safety begins with awareness and we can never "give safety the day off." «

Editor's note: At the time this article was written, information on accidental fatalities experienced during this time frame was still filtering in to the U.S. Army Combat Readiness/Safety Center to be entered into the database, so the statistics and findings may change in the coming months.

WHAT DO YOU THINK?

From January through March, KNOWLEDGE magazine is conducting a survey to determine whether we're meeting our readers' needs. Please help us out by taking a couple of minutes to answer a few simple questions at https://safety.army.mil/.

After all, this is your magazine. Shouldn't it contain the information you find helpful?

Keeping Soldiers in the Fight

1ST LT. BRANDON PHILLIPS
AND 1ST LT. JARED HOFFMAN
Forward Support Company, 84th Engineer Battalion,
130th Engineer Brigade
Afghanistan

The gunner's restraint system (GRS) is often looked at by many Soldiers as just another type of seat belt restraint. However, our unit's combat experiences have shown just how important this system is. The GRS secures gunners in their vehicles, preventing them from being thrown out in the event of a rollover or the detonation of an improvised explosive device (IED). Two different incidents during our deployment illustrate this point.

A Tale of Two Rollovers

During a combat logistical patrol, the trail vehicle in a convoy experienced a rollover while trying to avoid an obstacle at high speed. The driver overcompensated while attempting to regain control of his Mine Resistant Ambush Protected (MRAP) vehicle, and the gunner was ejected from his turret. The gunner's back was fractured in several places and nearly every bone in both arms was shattered. His injuries could have been limited had he been wearing his GRS. Thankfully, this Soldier survived and is making a steady, albeit lengthy, recovery stateside.

A closer investigation of the events leading to the rollover indicated that Leaders within the convoy failed to adequately inspect all vehicle gunners before departure. In this case, Leaders failed their Soldiers by not mitigating a potential risk involved in their mission. A simple check that only takes a matter of seconds could have prevented this Soldier's substantial injuries.

On a later mission along the same main supply route, an MRAP was involved in a crush-wire IED detonation that caused minor damage to the hull and destroyed a rear tire. The driver was unable to maintain control of the vehicle because of the blown tire and, subsequently, the MRAP overturned. Fortunately, this gunner was wearing his GRS. Although he suffered injuries, they were not as severe as in the previous rollover incident. This time, Leaders adequately inspected each gunner for their GRS before the start of their mission. The key Leader's attentiveness may very well have saved the life of this Soldier or, at the very least, prevented more significant injuries.

As these cases illustrate, Leaders cannot afford to overlook even the smallest ways to mitigate risks and keep their Soldiers safe. There are far too many ways to become a casualty in a combat zone. We have the best training and equipment in the world, but all of that becomes null and void when leadership fails their Soldiers. So do what's right — identify risks, mitigate them to the lowest level and safeguard your Soldiers. We owe it to them.

> "Both **GARRISON** and **DEPLOYED MISSIONS** require a **CONSTANT REVIEW** of **RISKS** and developing **WAYS** to **MITIGATE** them."

Leaders are the Vital Key

Safety is one of the most important considerations Leaders must look at when planning and executing missions. Both garrison and deployed missions require a constant review of risks and developing ways to mitigate them. As a Leader in a deployed area of responsibility, there are scores of risks to take into account. Small-arms fire, IEDs, low-hanging wires, scorching temperatures and vehicle rollovers are just a handful of the risks Soldiers face downrange.

Thankfully, the equipment and resources available to Soldiers today are the best they have ever been. Items such as fire-retardant clothing, ballistic eye protection and state-of-the-art body armor have increased the level of protection for troops by leaps and bounds in recent years. In addition, MRAP vehicles protect troops with their thick armor hulls. They also possess enhanced optical devices that allow the quick and accurate identification of possible threats.

However, advances in protective equipment and technology can only take us so far. Leaders at all levels can mitigate risk and ensure the safety of their Soldiers by conducting proper pre-combat checks and pre-combat inspections. Noncommissioned officers (NCOs) are the start point for this vital process. It should be the first-line supervisor, normally a sergeant or staff sergeant, who checks each Soldier to ensure they have all the pieces of gear and equipment required for their mission.

In our unit, when the Soldier's first-line supervisor verifies they have all the proper equipment, that NCO signs a checklist indicating the check was performed accurately. Senior Leaders can then conduct random spot checks of the personnel involved in the mission and take note of any deficiencies that could affect the mission. Even when high-ranking "guests" are along, the convoy leadership must make it a priority to inspect their equipment, as well. No Soldier is above this standard.

Aside from the individual Soldier and his equipment, combat vehicles must also be inspected with the same vigor. Vehicle operators and Leaders need to perform preventive maintenance checks and services, as well as inspect the multitude of new equipment found in the field today. Electronic warfare devices, objective gunner protection kits and other new devices must be a part of this process. As we related in the first half of this article, we know how important this is because of our experiences with the GRS. Properly used, the GRS and risk mitigation have proved to be a vital component in our unit's effort to enforce safety.

Troops In, Brown Out

CHIEF WARRANT OFFICER 2 KENNETH G. MCALISTER
C Company, 3rd Battalion, 227th Aviation Regiment
1st Air Combat Brigade, 1st Cavalry Division
Fort Hood, Texas

It was a cool November night. The mission called for an air assault insertion into a small village just north of Baghdad, Iraq. Although we were both pilots in command (PC), I was the air mission commander for this particular flight. It was our commander's practice to put two PCs in the lead aircraft, whenever possible, to lessen the workload of flight lead.

We took off from Taji shortly after 2300. The flight was not a long one, six minutes at the most. We soon picked up our landing direction, due north, and hit our release point. The AH-64 gunships (Chalk 2) for our close air support called our landing zone (LZ) "ice," a term used to indicate the LZ was free of hostile activity. We slowed to 70 knots indicated airspeed (KIAS) and performed our before-landing checks. I was on the controls and the PC was navigating and calling out airspeeds, altitude and distance to set up for a time-on-target landing. The LZ was small and situated in the middle of a small town surrounded on three sides by buildings and many small sets of wires.

The LZ was on a road that ran north to south, just north of an intersection with a berm on the east side parallel to it. I began our landing just after flying over the large set of wires along the intersecting road, but had to extend because of another set of wires that were on short final. I had accomplished plenty of brownout landings before; however, nothing — not even training in Kuwait — could have prepared me for this.

The brownout landing started out like any other landing, but it quickly got worse. I lost all visual references; nonetheless, I continued to hover until I couldn't stand it any longer. I knew the ground was there and I knew I would eventually land. My thoughts were that if I had to complete a go-around, the bad guy would get away. I couldn't stand not being able to see anything. I announced that I was totally brownout.

The PC quickly took the controls and told me he could still see a building on his side of the aircraft. He completed the landing with me guarding the controls. Chalk 2 never made it even close to landing in their LZ, which was 50 to 60 meters away at another road intersection. They completed a go-around and landed back at the original takeoff point. We inserted our troops and headed back to Taji, which was less than five miles away, to wait for the extraction call.

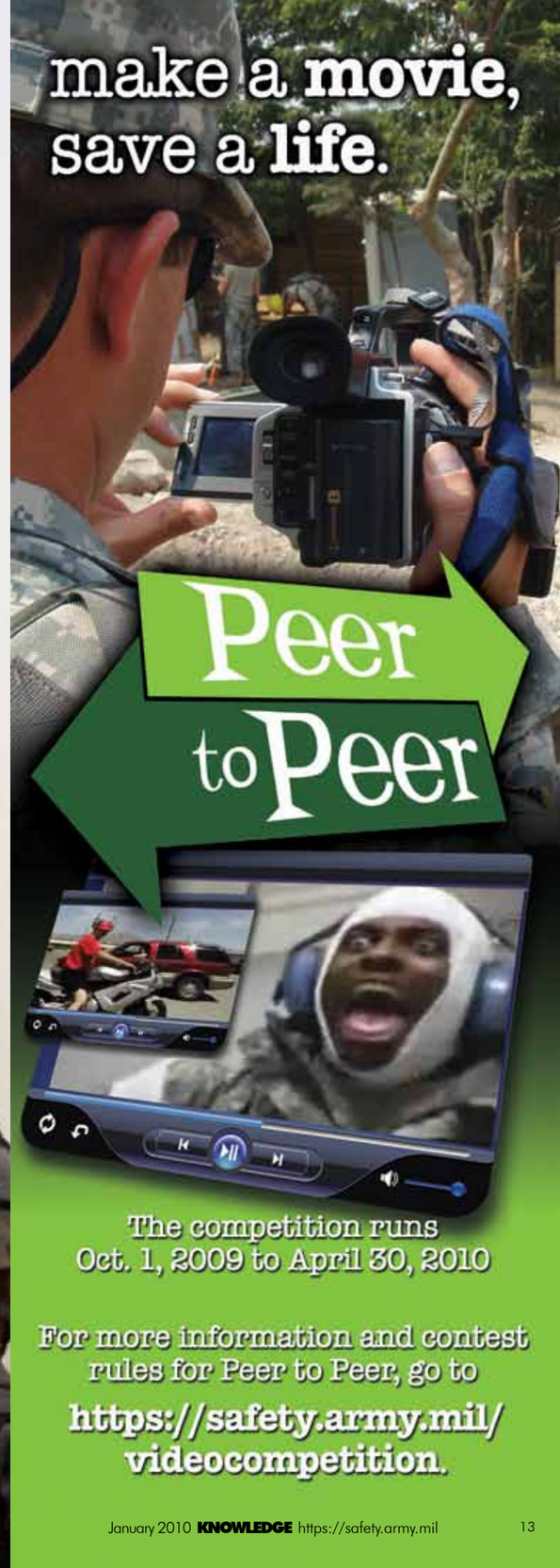
Our flight got the call for extraction just after midnight. We didn't need a route and we didn't have a timeline. We had a pickup zone (PZ) with a landing direction and it happened to be on the same road as the original LZ. We picked up our landing direction again, hit our release point and called the troops on the ground.

I transferred the controls after slowing to 70 KIAS. I told the PC that he should probably land since he had a visual reference during the last landing. After a three-way positive transfer of the flight controls, I called out airspeed, altitude and distance to the PZ. The PC gave the "bounce" call to the flight and began landing. This time, he lost visual cues and I didn't. In fact, I saw the ground getting closer to us through the chin bubble after we initially touched down. I shouted that we were rolling right and put my hand on the cyclic control to move it to the left to level us out. This put the left main landing gear on the ground. After he reduced the collective, the PC transferred the flight controls back to me and monitored the loading of our passengers.

Chalk 2, flown by our commander and a platoon leader, again failed to land on the first try. They did a go-around to our right and launched flares in the process, which started a fire in the field to the east. We again took off to the north and met our sister ship after their pickup.

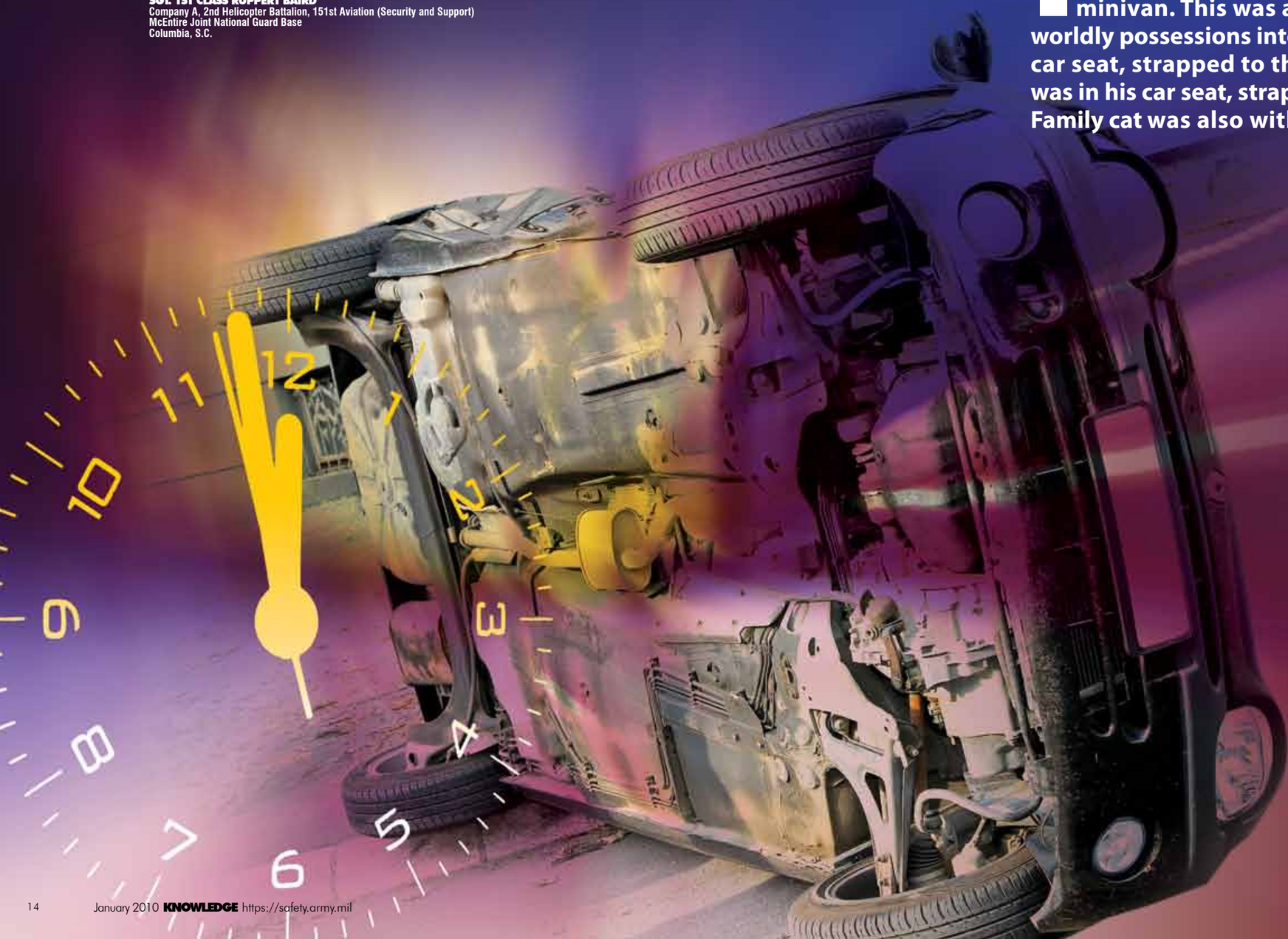
This whole ordeal reveals how hastily planned air assault missions into unknown areas can be extremely hazardous. This situation also illustrates how good crew mix can mitigate hazards to an acceptable level. As for the marginal crew mix of the other aircraft, that's a whole other story.

Oh, yeah, we got the bad guy too!



Smashed, Trashed and Stranded on the Road

SGT. 1ST CLASS RUPPERT BAIRD
Company A, 2nd Helicopter Battalion, 151st Aviation (Security and Support)
McEntire Joint National Guard Base
Columbia, S.C.



It was just before New Year's and I was leaving Fort Lewis, Wash., to move my Family back to South Carolina. I was coming off active duty and had rented a twin-axle trailer and installed a hitch on my minivan. This was a do-it-yourself move and we'd loaded all our worldly possessions into the trailer. Our 4-year-old daughter was in her car seat, strapped to the front passenger seat, and our 2-year-old son was in his car seat, strapped to the rear bench seat next to my wife. The Family cat was also with us as we left a few minutes before midnight.

I was anxious as we pulled out of Tacoma, Wash., and headed east toward Snoqualmie Pass and the Cascade Mountains. As we made our way through the pass, we encountered gusting winds that rocked the van and trailer. I slowed down to ensure I kept full control. After we got through the pass, the winds died down. We merged onto Interstate 82 and I settled in for a night of driving.

One of the strange anomalies of the interstate system is a loop on I-82 in southeastern Washington. I planned to bypass this loop by going through Prosser, Wash., on State Highway 221 and reentering I-82 just north of Umatilla, Ore. Mind you, this was before Google Maps and MapQuest, so the only thing I had was a map. It seemed logical to me that this would be a safe, well-traveled route.

As we pulled through Prosser, I recognized the dangers posed by the ice, snow and wind and drove at or below the speed limit. I then began climbing into Horse Heaven Hills.

As I drove, I saw a warning sign for a 90-degree right turn and a 25-mph speed limit. I slowed, feeling sure I would be fine at 20 mph; however, the black ice didn't agree. As I eased around the turn, I felt the trailer rock. Thinking I had encountered winds again, I decelerated. That was a mistake. Even though the van made the corner, the trailer began sliding on the ice. Before I knew what happened, the van and trailer jackknifed and I was out of control. I tried steering into the direction of the skid, but to no avail. All I could do was hold on as my van was pushed diagonally across the road and into the oncoming lane. Fortunately, there were no other drivers on the road.

I watched helplessly as the van's passenger door struck a road sign, shattering glass all over my daughter and into the van. My wife had been sleeping on the van's floor and woke up just in time to feel the wheels come off the pavement as we encountered soft dirt on the roadside. We felt the van tilt and roll over at least twice before landing on its right side.

My daughter and son were screaming. I reached down from my now-elevated seat, brushed the glass shards off my daughter and found her unhurt. I then looked to the rear to check on my wife and son. He was firmly strapped into his car seat while my wife was sitting cross-legged on the interior right side of the van. Although stunned, she was amazingly calm. I repeatedly asked her if she and our son were all right. Incredibly, they were.

I looked forward and was surprised the van's engine, headlights, radio and heater were still functioning perfectly. I took a breath, shut off the van and smelled for gasoline. Fortunately, I didn't smell any fumes. Nevertheless, I decided we needed to exit the van immediately. I removed my seat belt, carefully pushed open the driver-side door, pulled myself out of the van and had my wife hand our children up to me. Then I helped my wife out of the van. A carload of boys rolled up to the accident scene. They helped me move my wife and kids off the side of the van and placed them inside their warm car while I assessed the situation.

The rear hatch and the left-rear portion of the van's body and roof were caved in. The trailer had stayed connected to the hitch and rolled over with us as we overturned in the minivan. The trailer doors had popped open, scattering many of our belongings, and our cat was gone. I returned over the next few days, but I never found him. The people of Prosser were incredible and took excellent care of us during our six-day stay.

The van and the trailer were totaled. We ended up driving home in the largest rental truck U-Haul had — the only one that fit a Family of four. We spent all of our travel money and maxed-out our credit card. Thankfully, the only injury was a bruise to my wife's shoulder. The rest of our trip home was uneventful.

I've always been impatient to get on the road. On this journey, I let that get in the way of proper trip planning and risk assessment. I'd rented a trailer that was too large for my minivan. And, while I was aware of the black ice danger on the roads, I assumed my two years of winter driving had adequately prepared me for it. Unfortunately, an unfamiliar road, an extra-heavy load and a typical "GI" effort to save money proved to be my downfall.

Clearly, I should have hired a professional moving company. Also, I should have waited until the morning to leave, when much of the ice would have been melted. I also should have ensured everyone in the van remained properly buckled in.

The good thing about lessons learned is that you get the opportunity to avoid repeating your mistakes. Back then, online tools like the U.S. Army Combat Readiness/Safety Center's Travel Risk Planning System (TRiPS) didn't exist. Now that they do, I — as a full-time National Guardsman — use them. It sure beats being smashed, trashed and stranded on the road.

FYI

If you're new to towing with your POV, visit the following link: https://safety.army.mil/ and type "towing safety" in the search window.

Behold the Cold

SGT. 1ST CLASS STEVEN DECKER
Northern Warfare Training Center
Fort Wainwright, Alaska

Do you want to know the secret to staying warm? Don't get cold.

At the beginning of a winter training course here at the Northern Warfare Training Center (NWTC) at Fort Wainwright, Alaska, I'll occasionally pose that question to a group of Soldiers. Some look disappointed when I tell them the answer, but others get it right away and their whole outlook on winter training changes in an instant. By the end of the course, most of them understand the simplicity of this complex and often daunting task.

Fort Wainwright is probably the coldest post in the U.S. military. During the winter months, the temperatures regularly drop to minus 20 F or below for weeks at a time. We teach units in U.S. Army Alaska (USARAK) and, to a smaller degree, other military personnel how to operate in a cold, snow-covered, mountainous area. We train about 500 students a year who then go back and become the trainers for their respective units. The following are some of the training tips we pass down to Soldiers.

Fuel Your Body

The first step to staying warm in a cold environment is to properly fuel your body. Depending on your exertion level, Soldiers should consume between 4,500 and 6,000 calories and three-and-a-half to five quarts of water per day. Light infantrymen will require the upper end of that scale, while someone who works in the tactical operations center will be on the lower end.

Meals, Ready to Eat (MREs) provide about 1,400 calories per menu, so four per day will usually do the job. Meals, Cold Weather (MCW) provide about 1,700 per meal. However, palatability is a challenge. MCWs require rehydration for the main meal component. This is best accomplished with boiling water. You can mix cold water with MCWs, but it will take longer to rehydrate and the food won't taste as pleasant.

An MRE can be used even after being frozen, but it must not be refrozen. The main components of the meal can be placed inside clothing for an hour or so to thaw or even in a sleeping bag overnight for a "warmish" breakfast. The other part of the meal, "grazing foods," should be eaten between meals to refuel your body. Remember, a near constant calorie intake is vital to staying warm.

Cover Your Body

Clothing should do three things: insulate, ventilate and provide protection from the wind. The older Extreme Cold Weather Clothing System (ECWCS) and new seven-layer Generation III ECWCS both do this very well. The challenge is figuring out what to do with all that clothing.

The most important measure to take with any clothing system is to layer. Start out with the lightest polypropylene underwear and build from there. The layers then must be protected by a shell. The ECWCS Gore-Tex pants/jacket combo is an excellent all-round choice. The soft-shell pants/jacket from the seven-layer system works best in high-aerobic activities in very cold conditions. A complete class on the proper use of the seven-layer system and ECWCS is available for download at http://www.wainwright.army.mil/nwtc/slides.html.

Heat management is a constant challenge when operating in cold weather. Knowing when to dump or hold heat is the key. I watch students after the 10-kilometer snowshoe march and quite a few will be dripping with sweat at the finish. They invariably say, "I just wanted to get it over with." I counter with, "What would you do if you were forced to stay outside for another five or so hours?" They usually don't have an answer.

Soldiers must ventilate before it is needed and reduce insulation before a movement or exertion. The big, puffy suit in the seven-layer system is meant to be put on while static and put away when moving. Likewise, that fleece jacket may be soft and cuddly and quite the fashion accessory around post, but you really don't need to wear it on a good, long dismounted movement. If at all possible, have dry layers available to replace or upgrade clothing if needed.

Move Your Body

Cold weather requires people to be proactive. If your fingers become cold, windmill your arms to force blood into the fingertips. Cold toes? Wiggle them or swing your legs. Shivering? Exercise a little. The point is to not allow cold to gain ground in your body.

Observe the other people around you, looking beyond the obvious. We know what is wrong with the Soldier who is shivering and twitching on the ground or has a white patch on his nose. The Soldier who escapes our attention is the one who stands perfectly still with his head drawn down between his shoulders and his arms hanging stiffly at his sides. He grumbles at tiny issues, mumbles when addressed, fumbles when handling simple tasks and stumbles when walking on easy ground. This Soldier needs help now; but just as important, look for the symptoms of cold weather injury in yourself.

At the NWTC, the cadre not only trains in the cold, they enjoy the weather. Winter doesn't have to be a time of fear and loathing. Embrace the cold — but be smart about it.

+ INEXPERIENCE
INEFFECTIVE CREW COORDINATION
= DISASTER

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

The makeup of an aircrew can be an important factor in crew coordination errors. Let's examine an accident scenario involving an OH-58D maintenance test flight (MTF). We'll look at what happened, what should have happened and what we can learn from the experience.

The mission was to conduct preventive phase maintenance (PPM), which included an autorotational RPM check. The weather was agreeable, the preflight looked good and, on the surface, the crew mix seemed right for the mission. The maintenance examiner (ME) had more than 1,000 hours in the OH-58D and the pilot (PI) had almost 300 hours of flight time in the aircraft.

What Happened?

It was a typical day. The crew met in the morning to ensure the aircraft would be ready for the MTF. They had lunch later that day with other members of the unit. That afternoon, the crew received the weather briefing and, shortly thereafter, departed for the maintenance test flight area (MTFA) to conduct the PPM.

The ME sat in the right seat and the PI in the left seat. After the majority of the MTF had been conducted in the MTFA, the crew planned to complete the autorotational RPM check in the traffic pattern upon return to the airfield. On their way back from the MTFA, tower informed them that the winds had shifted and for them to use the active runway. The ME requested to remain west of the airfield to avoid a fog layer and enter left, downwind from the west. The tower approved the request and, a few minutes later, the ME requested an altitude deviation to 2,000 feet mean sea level (MSL) to conduct the autorotational RPM check. The tower approved the request and, on final approach, the aircraft entered an autorotational descent to the active runway.

During the maneuver, the ME allowed the airspeed and rotor RPM

to decrease to a level that did not allow for sustained flight. The aircraft failed to recover from the autorotative descent and crashed on the runway, destroying the aircraft and fatally injuring the two crewmembers.

What Went Wrong?

The circumstances indicate the crew failed to properly scan the aircraft's flight instruments while performing an autorotational RPM check. The ME allowed the airspeed to decrease below what is required for a steady state autorotation. As the airspeed decayed, the rate of descent increased.

When the aircraft dropped below 400 feet above ground level (AGL), the ME realized the throttle was still at idle and attempted to recover the aircraft. Unfortunately, there was insufficient time or altitude to allow the engine to spool the rotor system back to 100 percent and arrest the descent.

What Should Have Happened?

According to the MTF manual for the OH-58D, Technical Manual 1-1520-248-MTF, the pilot should have performed the following for an autorotation RPM check:

WARNING: If autorotation RPM cannot be maintained in the normal operating range, terminate the test flight. Select an altitude that will allow a power recovery climb to be accomplished by 500 feet above ground level (AGL).

NOTE: Ensure ENG ANTI-ICE and HTR switches are OFF. MTF mission gross weight is 4,500 pounds. Nr (rotor speed) should be stabilized at 100 percent ±2 percent at the selected baseline density altitude (DA) for your operating area. Nr will increase/decrease approximately 1 percent for every 1,000-foot increase/decrease in DA and/or 100-pound increase/decrease in gross weight.

(1) While maintaining 55 ±5 knots indicated airspeed (KIAS) and aircraft in trim, lower collective to the full down position when a safe touchdown area can be reached.

(2) RPM: Confirm within limits.

(3) Throttle: Reduce to idle; confirm clutch disengagement and that engine gas generator speed (Ng) is stabilized at 63 to 65 percent. Check mast torque/engine torque are at or near zero percent.

(4) Aircraft: Check pedals for sufficient right pedal remaining and cyclic for normal position; note any marked increase or decrease in vibrations and/or unusual noises.

(5) Nr: Record with aircraft stabilized at 55 ±5 KIAS and in trim.

(6) Power recovery: Perform. Climb will be accomplished by 500 feet AGL. During power application, confirm clutch engagement. Maintain airspeed above 50 KIAS on climbout.

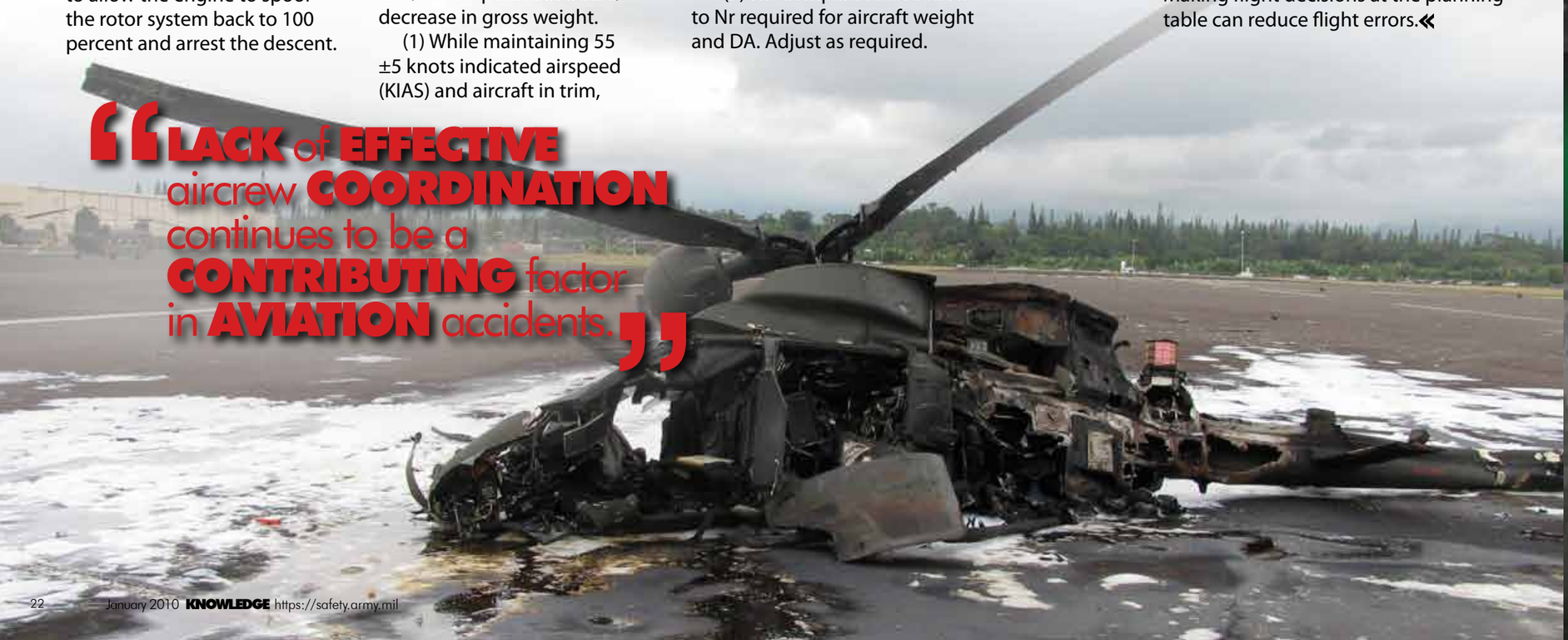
(7) Nr: Compare recorded Nr to Nr required for aircraft weight and DA. Adjust as required.

Lessons Learned

There are lessons learned from this accident scenario. First, selecting the right crew mix is extremely important in accomplishing the mission safely. Leaders must have oversight of the flight schedule and risk assessment matrix to ensure the risk is, in fact, low and includes the proper crew mix to alleviate overconfidence. Risk assessments are tools to help leadership make smart, informed decisions.

The second lesson learned is twofold: a breakdown in crew coordination and ineffective crew briefs. Lack of effective aircrew coordination continues to be a contributing factor in aviation accidents. Aircrew coordination discipline begins with the entire crew acting as a team in mission planning, execution and after-action reviews.

During crew briefs, it is essential to discuss the duties and responsibilities of all aircrew members beforehand, including alternate plans/actions should unexpected circumstances occur. Making flight decisions at the planning table can reduce flight errors.



"LACK of EFFECTIVE aircrew COORDINATION continues to be a CONTRIBUTING factor in AVIATION accidents."

SLOW CONNECTION?
LIGHTEN UP!

U.S. ARMY COMBAT READINESS/SAFETY CENTER

https://safety.army.mil/lite

The Safety Center's home page is now available in a lite capacity to allow forward-deployed Soldiers with limited Internet connectivity access to the risk mitigation tools and resources they need.

RICHARD FENNER
43rd Sustainment Brigade
Fort Carson, Colo.

Get to Know Your Manuals

Technical manuals (TMs) are designed to ensure Soldiers and civilian personnel follow the proper procedures and heed safety warnings when operating equipment. Furthermore, Army Regulation (AR) 385-10 and the unit safety program provide additional guidance on procedures units should adhere to when conducting assigned missions or tasks. Unfortunately, personnel sometimes fail to follow this guidance and are seriously injured or killed.

Units are mandated to have the appropriate TMs on hand for each piece of equipment within their respective unit and for each mission. Sometimes, however, personnel view a task as so routine that they choose to do it from memory rather than use the TM. These folks might even question why we use TMs in the first place. Well, the answer to that question is simple: it's because you can't memorize all the step-by-step procedures and safety warnings in them. For the Soldier mentioned in the following accident sequence, reading the TM would have saved him a world of pain.

> "**SOLDIERS** also must be **PROPERLY** trained and **READ** the equipment's **TM** before **STARTING** any **TASK** or mission, no matter how **ROUTINE** or **SMALL** it may **SEEM.**"

The Accident

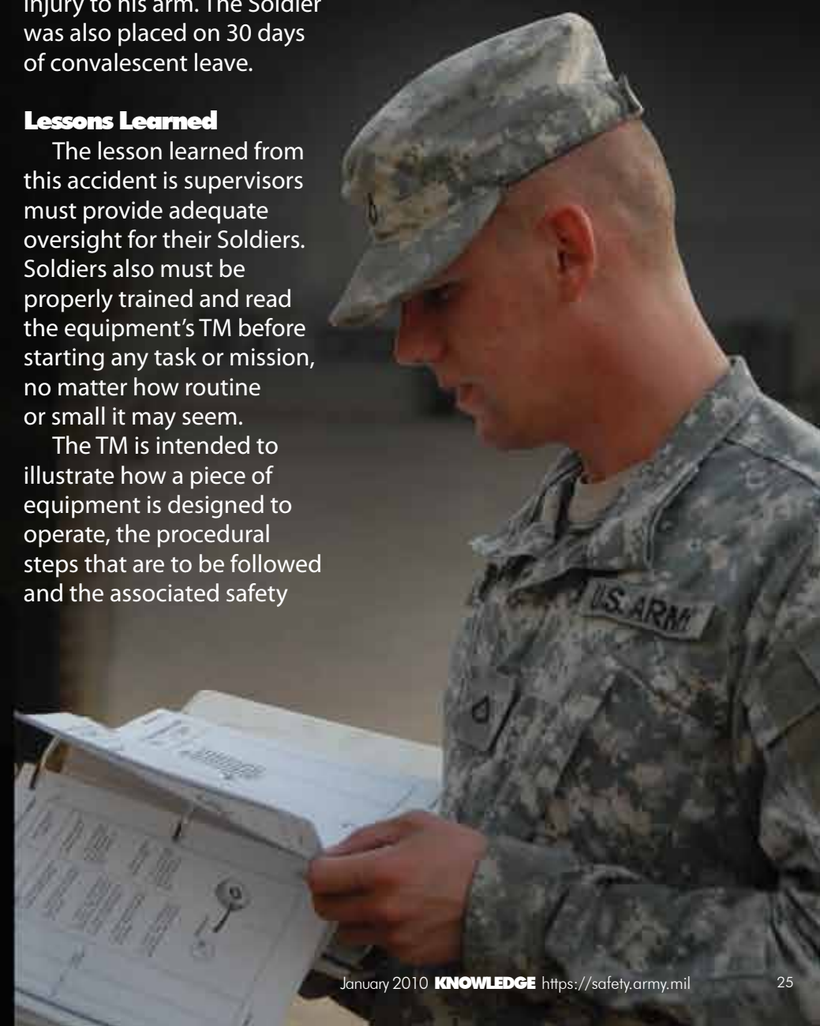
One afternoon, a group of 88M (motor transport operator) Soldiers were given a standard routine task: conduct routine maintenance on M3 Container Roll In/Out Platforms (CROPs). A Soldier who was untrained and had very little experience was removing one of the two retaining pins that held a critical piece of the equipment in place. Neither the supervisor nor the Soldier had read the TM, which revealed that this procedure involved using a lifting device such as a crane.

As the Soldier removed the last pin, the 370-pound CROP arch fell onto his right arm. Other Soldiers in the immediate area quickly rendered first aid while another Soldier summoned a noncommissioned officer to the scene. The injured Soldier was transported to a hospital, where he underwent several surgeries to fix the injury to his arm. The Soldier was also placed on 30 days of convalescent leave.

Lessons Learned

The lesson learned from this accident is supervisors must provide adequate oversight for their Soldiers. Soldiers also must be properly trained and read the equipment's TM before starting any task or mission, no matter how routine or small it may seem.

The TM is intended to illustrate how a piece of equipment is designed to operate, the procedural steps that are to be followed and the associated safety and warning hazards. Never become complacent and deviate from following the standard practical procedure of reading an equipment TM. It might just save your life, your Soldiers' lives or prevent injury to others around you.



Cheating Death

CHIEF WARRANT OFFICER 2 HERBERT W. STOVER IV
A Company, 2nd Battalion, 224th Aviation Regiment
Virginia Army National Guard
Sandston, Va.

While most Soldiers, Sailors, Marines and Airmen concentrate on the insurgent enemy in Iraq, Army aviation faces a unique enemy not associated with any political faction. That foe is deteriorating weather conditions. In the following case, encountering instrument meteorological conditions inadvertently endangered the lives of all onboard four aircraft.

As with every mission, we ran through our checklists, paying particular attention to the weather. We requested current and forecast weather conditions from several different agencies. While in Iraq, we noticed most weather reports were skewed or, as the pilots sensed, deceptive.

Our minimum requirements for night flying were a 1,000-foot ceiling and three statute miles visibility. Every night that we checked the weather, the current condition reports and forecasts were inaccurate. Weather professionals weren't always accurate at home station either. In fact, they were wrong a lot too. However, in Iraq, we wondered if there was command pressure to not report below the legal limits, forcing aircrews to launch and fly the missions.

This particular time, we checked weather and, you guessed it, the current conditions and forecasts all said we would experience visibility no less than three miles — right at our minimum to fly — through expected time of arrival (ETA) plus one hour. Our instincts and the cloudy skies we'd seen on our way in to work told us to consult the satellite imagery on the Internet to see what was brewing in the area. We saw large swirls of thick clouds moving our way, but the forecasts and current conditions issued by the weather agencies cited nothing but clear weather for the night … at least "clear" as defined by the three-mile visibility requirement extending through our ETA by at least an hour.

At the preflight briefing, the briefing officer started with, "This is a lie, but I'll read it to you anyway," and then read the official weather forecast. We requested a more detailed forecast, specifically asking about the activity we were seeing on the satellite. Again, we were told weather was not going to be a factor during our flight period. We reviewed our flight route and, to mitigate our perceived risk, planned weather checks at specific points during the flight. Then, we took off on the mission.

The first leg left us with no doubt that the weather was acceptable to make the next leg of the trip. We continued heading east into Baghdad, flying away from our suspected foul weather coming in from the southeast. As we continued the mission, we began to see lightning flashes through our night vision goggles (NVG). While they were not visible to the naked eye, they were close enough that we requested weather updates over the radio before our planned weather checkpoints farther to the east.

The controlling agency over Baghdad gave a legal visibility report and made no mention of lightning or impending storms. "Let's hurry up because something is brewing and these bastards aren't admitting it," the pilot in command (PC) called over the radio to the other aircraft as we made our cargo drop and pickup in Baghdad.

We took off and asked the controlling agency for a weather update. Again, we were told nothing significant. The passengers had no idea what was transpiring in the cockpit or in the air around them. They trusted us to keep them safe and do the right thing; however, the system was failing.

Suddenly, lightning struck just to the east of our location. By our estimation, it was about five miles away. We called the controlling agency and reported the adverse weather we were

> "If **CREWS** don't **PERFORM** composite **RISK MANAGEMENT** and double-check **WEATHER INFORMATION** from several different **SOURCES**, then Army **AVIATION** will have more **INCIDENTS** like this."

experiencing. This was the first true weather update the system received, which was then reported to other aircraft. Knowing there were several aircraft sorties in the sky between Al Taqaddum (TQ) and Baghdad, we felt the need to correct the forecast weather reports with pilot-observed updates called PIREPS. We joked in the cockpit that our reports wouldn't be communicated to the other flight crews.

We flew west, heading back to TQ, thinking the weather was behind us to the east over Baghdad. However, our goggles suddenly picked up lightning in front of us to the west. As the pilot not on the controls, I announced the conditions and took off my NVG to see if the lightning was visible with the naked eye. It wasn't.

Halfway back to TQ, heading west, we changed controlling agencies and requested a weather update from Fallujah. The update went something like this, although I'm not 100 percent certain about the ceiling height, though it was way above our minimum of 1,000 feet:

"Winds from the south at five knots, visibility five miles with a ceiling of 20,000 feet."

The PC broke squelch and asked Fallujah, "What about any reporting of thunderstorms?"

Fallujah replied with, "Nothing has been reported within 40 nautical miles, sir."

Over the intercom, the PC asked, "Am I crazy? Doesn't that lightning look closer than 40 miles away?" Then, keying the radio to the Fallujah controller, he said, "Well, I'm not sure what your source for weather is, but it's wrong. And if you'd step outside and look, you would see there is lightning within 40 miles of here. Thanks for the update. We're on our way to TQ."

With that bitter exchange, we continued to the west thinking the worst of the weather was behind us, until we noticed the visibility dropping. TQ is only a 15-minute flight from Fallujah. Five minutes west of Fallujah, the visibility dropped to less than three miles. We began preparations for landing when the visibility dropped to almost nothing. The runway was less than four miles from our position and we couldn't see it. Each station in the aircraft announced visibility less than a half-mile.

This is when we began to sweat profusely. We went into survival mode, relying on our training and gut instincts to communicate and take actions quickly, with no time for review.

I keyed the microphone to check on the second aircraft at our six. Its crew replied they could still see us. I talked to TQ tower faster than they could talk back. Three miles out from landing, we declared ourselves en route to the airfield but then pulled a 180-degree turn for fear of other aircraft in the airspace.

"Return to Fallujah," we radioed the second aircraft. They acknowledged and followed. We called TQ tower, telling them we were outbound, heading back west, with visibility of a quarter-mile. Another aircraft came over the radio approaching TQ from the northeast, where they reported visibility as unlimited. Our response was to turn in the direction of the "unlimited" visibility. I entered a point just north of TQ into the global positioning system and called the tower for permission to change heading to the northeast, praying to break out of this mess. Permission was granted, but the visibility was no better.

Straight down was the only direction where we could see anything. We certainly had many unanswered questions: Should we land in the desert — right here, right now — even though we're outside the wire from TQ? Altitude — 200 feet. Map out. Are there towers below us? Wires? Other structures? No. Open area? Good! Put it down? No! Visibility no better, left turn, straight in.

"Tower, we're inbound." Three-tenths of a mile, no runway lights; two-tenths, a dim line; going straight down; one-tenth, a runway. Whew! OK, here we are.

"Tower, we're landing here and shutting down on taxiway Romeo."

We set the brakes and parked the aircraft. I looked at the PC and he looked at me. We both had smiles on our faces that said, "We did it, don't want to do it again and holy crap, let's get out of this thing!"

The relief was like nothing I'd ever experienced. My chest felt like a 1,000-pound brick had been lifted off it. I took the largest, deepest breaths I'd ever taken. Shutdown was quick and we started shedding our equipment quickly. We wanted out and to put our feet on solid ground, under our terms. There were three other aircraft with crews similarly elated to be on the ground. As the crews met on the taxiway, one of the more experienced pilots shook my shoulder and said, "Well, you're not a virgin anymore!"

This risk was not worth the reward. We were carrying troops mostly to get them out on rest and relaxation leave or pass. If crews don't perform composite risk management and double-check weather information from several different sources, then Army aviation will have more incidents like this. Statistically, we won the lottery that night. If we hadn't made it that night, the command would have had to write sympathy letters to our next of kin. The reward that night was we all lived for another mission.

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Michelle's Story

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

June 22, 2009, is a day that Spc. Michelle L. Waters of the Kentucky Army National Guard will never forget. As she got onto the highway to drive home, little did she know her life was about to forever change.

That Monday was Waters' "drop day" — an extra day off she got every other weekend for working nine-hour days as a full-time National Guardsman. She'd taken advantage of the long weekend to visit friends who lived in Ripley, Tenn., about five hours east of where she lived in Taylorsville, Ky. She'd gotten up about 8 a.m. after a good night's sleep and later hit the road. As she headed north, she stopped for gas and a soda. She'd driven the route countless times before with nothing extraordinary happening. She had no reason to believe that day would be any different.

But that day was about to become very different.

Wendy Freeman was headed southbound on Kentucky's Purchase Parkway, which offered two lanes in each direction divided by a grassy median. It was 2:50 p.m. when she saw Waters' car go out of control in the oncoming lanes.

"I just saw her kind of 'fall' (drift) off the right shoulder of the road and then it was like she overcorrected," Freeman said.

Waters, perhaps a bit fatigued behind the wheel, had drifted onto the right shoulder. Recognizing her mistake, she swerved hard to the left, sending her car out of control across both lanes and into the median. As the car plunged down the median's grassy side, it slammed nose-first into a concrete culvert. The violent impact sent her Honda Accord cartwheeling down the median into the oncoming fast lane, landing upright in front of Freeman. Avoiding the wreck, she stopped and ran to Waters' car to see if she could help.

"The car was totaled and she was unconscious when I got to her, but she came around quickly," Freeman said. "By the time the ambulance got there, she was coherent."

The accident scene was only a few miles from Benton, Ky., the location of the Marshall County Sheriff's Department. Deputy Dennis Lewis had been on duty less than an hour when he got the call from the dispatcher.

"It was 'toned-out' to emergency medical services (EMS) and the fire department with a 'serious overturned entrapment,' meaning that the driver was unable to get out of the vehicle under their own power," he said. "All agencies ran Signal Nine emergency traffic to her location on the Purchase Parkway."

Lewis got to the accident scene shortly after the fire department. Accident debris was scattered everywhere. He quickly went to Waters' car and looked inside. Despite the damage to the car's exterior, the driver's compartment remained relatively intact.

"She was sitting still in the driver's seat — her seat belt on — very obviously and visibly upset," Lewis said. "I don't really know that, at the time, she actually knew what had happened and what was going on. But she knew she was hurt and upset."

After EMS arrived, they faced the task of getting Waters out of the wrecked car. The driver-side door had become jammed during the crash. Lewis said, "We pried and prodded and did everything we could with the limited tools we had until, finally, we got the door to pop open."

EMS technicians carefully removed Waters from her car and placed her in an ambulance headed for Lourdes Hospital in Paducah, Ky. Although she drifted in and out of consciousness, she remembered bits and pieces of the ride.

"I vaguely remember waking up and thinking how surreal it was," she said. "It seemed like a dream — like it couldn't have been real because you don't expect things like this to happen to you. And I remember the emergency medical technician asking me for my name and for contact numbers — which I guess I provided — but I don't remember doing that. I must have passed out again and then I woke up a little bit later at the hospital."

When she arrived at the hospital at 3:43 p.m., Dr. Shiraz Patel, an orthopedic surgeon, met her and assessed her injuries. Broken glass from the driver-side window had badly cut her left shoulder. Her right elbow, Patel said, was in "horrible condition."

Waters recalled seeing Patel.

"He basically told me what had happened — that it looked like I had broken my right arm. I must have passed out again because when I woke up in the holding area, there was this little Mexican woman praying over me. I thought, 'Oh, my God, am I dying — what's going on here?'"

Patel ordered Waters be given a series of CT scans to X-ray her injuries from different angles and help him understand their extent. It wasn't a pleasant experience for her.

"I remember being X-rayed," she said. "That's really when it hit me that this is real. When they moved me from the gurney to the X-ray table, I was in an excruciating amount of pain."

Uncertain of her condition, Waters was badly shaken, according to Patel.

"She was scared — she was very scared that she was going to lose her

arm," he said. He calmed her by telling her, "Everything is going to be fine. We're going to take you to the operating room and get you comfortable real fast."

Patel knew she would need surgery within 72 hours. However, he first had to stabilize her arm and reduce the swelling that could block the blood flow to her forearm or damage the nerves to her hand. He accomplished that by splinting her arm to keep it straight and placing ice on the injury to control the swelling. On Waters' third day in the hospital, Patel decided to operate.

Waters' right elbow was shattered. Both the inner and outer condyles (the bony proturbances you can feel on the inside and outside of your elbow) were broken, leaving nothing for the bones of her forearm to move against. Left unrepaired, her right arm would be useless. Ultimately, through the use of steel plates, pins and screws, Patel was able to reconstruct her elbow well enough for her to regain about a 30-degree range of movement in her right arm when she left the hospital. In the three months since her surgery, that has improved to 80 degrees. Patel's goal is for her to improve to as much as 130 degrees — just 10 degrees short of the full range of motion. Physical therapy is helping her regain flexibility in her elbow.

Waters' dramatic accident would have had a different ending had she not been wearing a seat belt, Patel said. "She wouldn't have been here (survived to make it to the hospital) or, worse, she would have been paralyzed or in a coma," he said.

And the doctor knew whereof he spoke. Starting his career in 1993 working a trauma unit in St. Louis, he saw people die who, had they worn seat belts, would have lived to make it to the operating table. Five years later, when seat belts became mandatory and air bags had been added to supplement seat belts, he saw a huge change. Patients were coming in with new injuries the doctors hadn't seen before — things like crushed ankles from floorboards coming up or dashboard-related injuries from where they pushed back onto drivers. Those types of injuries had always been there. The difference was that accident victims who previously ended up on morgue slabs were, instead, ending up on operating tables.

Waters is grateful she survived the accident. Two days after her crash, her grandmother died in the hospital. Had it not been for her seat belt, her father — Fort Knox Garrison Command Sgt. Maj. Charles Waters — would have been attending two funerals that week — one for his mother and another for his daughter. It's a grief he described as "unimaginable."

"You never know — tomorrow is not guaranteed," Waters said. "The decisions you make in your life, they don't just affect you — they affect your Family, friends and colleagues at work."

As Waters considered what might have happened that day, tears flowed from her eyes.

"It kills me to think I could have put my Family through a double funeral," she said. "I'll never take them for granted. The fact something like this happened shows you just how fragile life is."

Being a Father, NCO and Leader

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

Command Sgt. Maj. Charles P. Waters is Army through and through. A tough, career Soldier with 30 years of service, he has served in armor and cavalry units. He saw combat during Desert Shield/Desert Storm and Operation Iraqi Freedom. During the past three years, he has served at Fort Knox, Ky., as the garrison command sergeant major.

June 2009 was a tough month for Waters and his Family. His mother had undergone open-heart surgery in a hospital in South Carolina and then suffered deadly complications. He'd just left the hospital one afternoon when his wife's cell phone rang. An emergency medical technician (EMT) in an ambulance hundreds of miles away was calling with information that would drive the Family deeper into crisis.

Waters said, "The person on the other side of the phone asked my wife, 'Are you the parents of Michelle Waters? My wife said, 'Yes, what's wrong?' and she said, 'Your daughter was involved in an accident.' At that time, my wife quickly handed the phone over to me. I spoke to the lady and she gave me what information she could at the time."

The news put him in an emotional bind. At that moment, his mother was struggling for life in the hospital. At the same time, his daughter was being rushed to Lourdes Hospital in Paducah, Ky., for emergency surgery after her car cartwheeled multiple times. His heart was torn in both directions.

"There is always the fear of the unknown," he said. Although the EMT explained his daughter had been stabilized, there was no way of determining the extent of her injuries at that moment.

"I was concerned about that and I was torn between trying to figure out how we were going to divide forces to deal with both critical issues at the same time," Waters said. "It made it difficult on the Family, to say the least."

Waters' mother passed away two days after his daughter's accident. Michelle was released from the hospital about the same time as her parents came back from South Carolina. In no condition to drive or take care of herself, a friend drove her back from Paducah to her parents' house in Elizabethtown, Ky. Her father remembered how he felt when he saw his badly injured daughter.

"I was relieved by the fact that she was still alive," he said, thankful Michelle had used her seat belts, which saved her life. "I was also told the preliminary report said there's only two ways folks normally come from an accident like that — they're either paralyzed for life or they're dead. I felt blessed that she was still with us."

Waters knows what it means when someone doesn't survive. While stationed at Fort Polk, La., he had a Soldier who was not so fortunate. The Soldier fell asleep, ran off the road, struck a tree and was killed.

"The report stated he was not belted in and he was thrown from the vehicle," Waters said.

While he may take his beret off when he walks through his front door at night, Waters never takes off his "safety" hat. He knows his responsibility for the safety

of his Soldiers doesn't end at the end of duty hours. He knows that what happens off duty affects what happens on duty.

He said, "You look at the statistics that are briefed to the chain of command that come down through the Army system. You see if there is any way you can reach out to the younger generation and, in some cases, the older generation, through the safety briefs in such a manner that it will relate to them."

Sometimes that means being a bit creative, he said. While at Fort Polk, he would scan the police blotter for "teaching" opportunities. He'd make the stories generic and interesting by pulling out the names and injecting a bit of humor. He'd pull the Soldiers together on Mondays during command maintenance to pass along a few jewels.

"We used to call them 'CNN Downloads,'" he said. "The Soldiers actually liked it from a perspective that only 'certain' Soldiers do crazy things that just make you scratch your head. I would try to make it somewhat entertaining, but the point was always going back to what not to do."

And it wasn't just his Soldiers who got the treatment — he shared them with his Family.

"Safety is a choice that you make in life. It's a lifestyle that you live, and you have to view it from that perspective," he said. "You have to address this from an issue that really hits close to the heart — the fact that if you really like life and enjoy living, you have to protect yourself. You could be the best driver in the world and still not be around tomorrow if a bad driver hits you."

That point hit home with Michelle as she grew up. Buckling up when she got inside a vehicle became second nature. But what if it hadn't been? What if she hadn't buckled up that June morning?

"I'm not sure how I would have handled that," Waters said. "… I can't possibly imagine how tough it would be going from Mom's funeral to Michelle's all in one week. Michelle is my first-born. She has so much potential to just to go out and grab life and enjoy it. It means the world to me and her mother that we still have her in our life. I believe that those in our world would be a lot less happy if she were not still with us."

MAKING THE MESSAGE STICK

BOB VAN ELSBERG
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Getting Soldiers to buy into the idea of managing the risks in their life isn't always easy. Because many see themselves as young and invincible, they don't understand the importance of making "safe" decisions. According to Fort Knox Garrison Command Sgt. Maj. Charles P. Waters, this creates another opportunity for noncommissioned officers (NCOs) to exercise leadership.

"I think we need to be aggressive and attack what we know to be right when it comes to safety and driving POVs," he said. "We cannot allow Soldiers to violate standards because there is a cost. If our most precious resource is the Soldier, then they deserve our greatest efforts to protect them."

But getting Soldiers to understand that can be tough, Waters said.

"All of these things can fall on deaf ears if you're not careful," he said. "You've got to remember your audience and ensure that when you engage them the message is being received. Sometimes that is easier said than done with the generation that we have today. I like inputting humor into it. If you have a standard safety brief, sometimes you've got to change it up a little bit — spice it up so that they still get the point when they walk away."

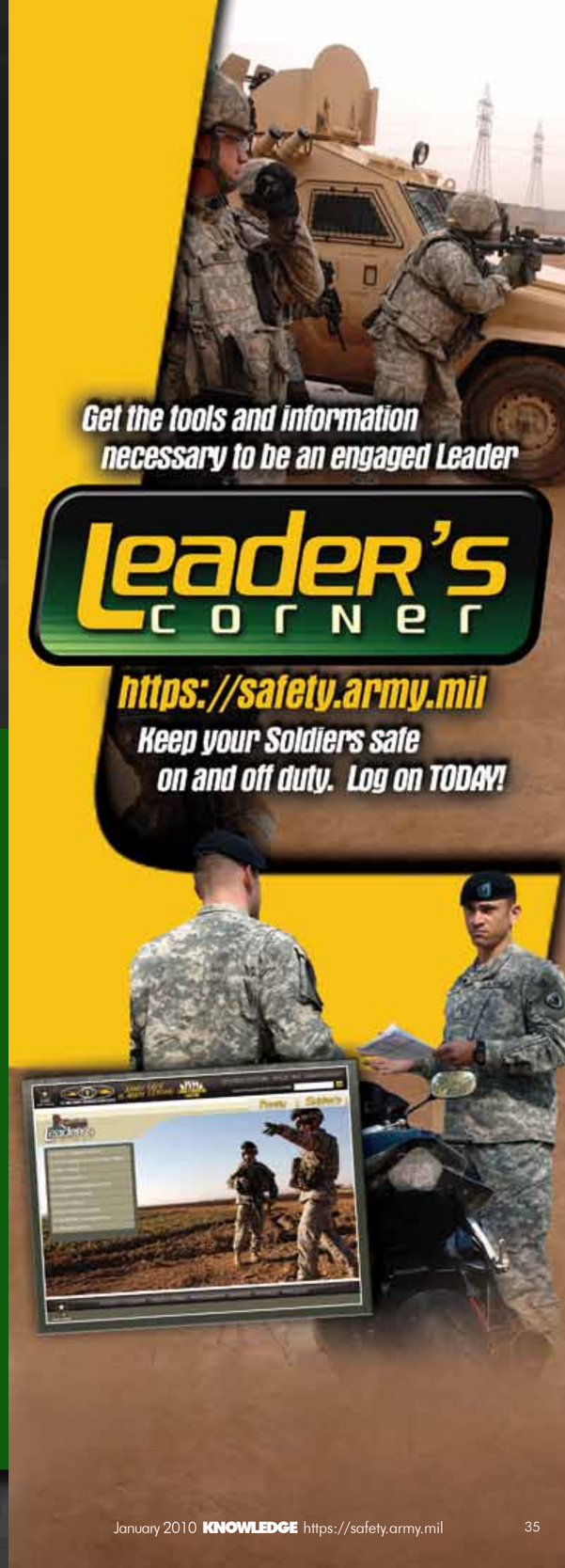
Beyond the humor, Leaders are responsible to ensure their Soldiers meet the standards.

"I think the most important thing we, as Leaders, need to do is constantly watch for violations with our Soldiers when we see them in day-to-day operations," he said. "We have to hold them accountable and make sure if we see violations, we correct them on the spot. Regardless how busy we are, we must take the time to make on-the-spot corrections and hold them accountable."

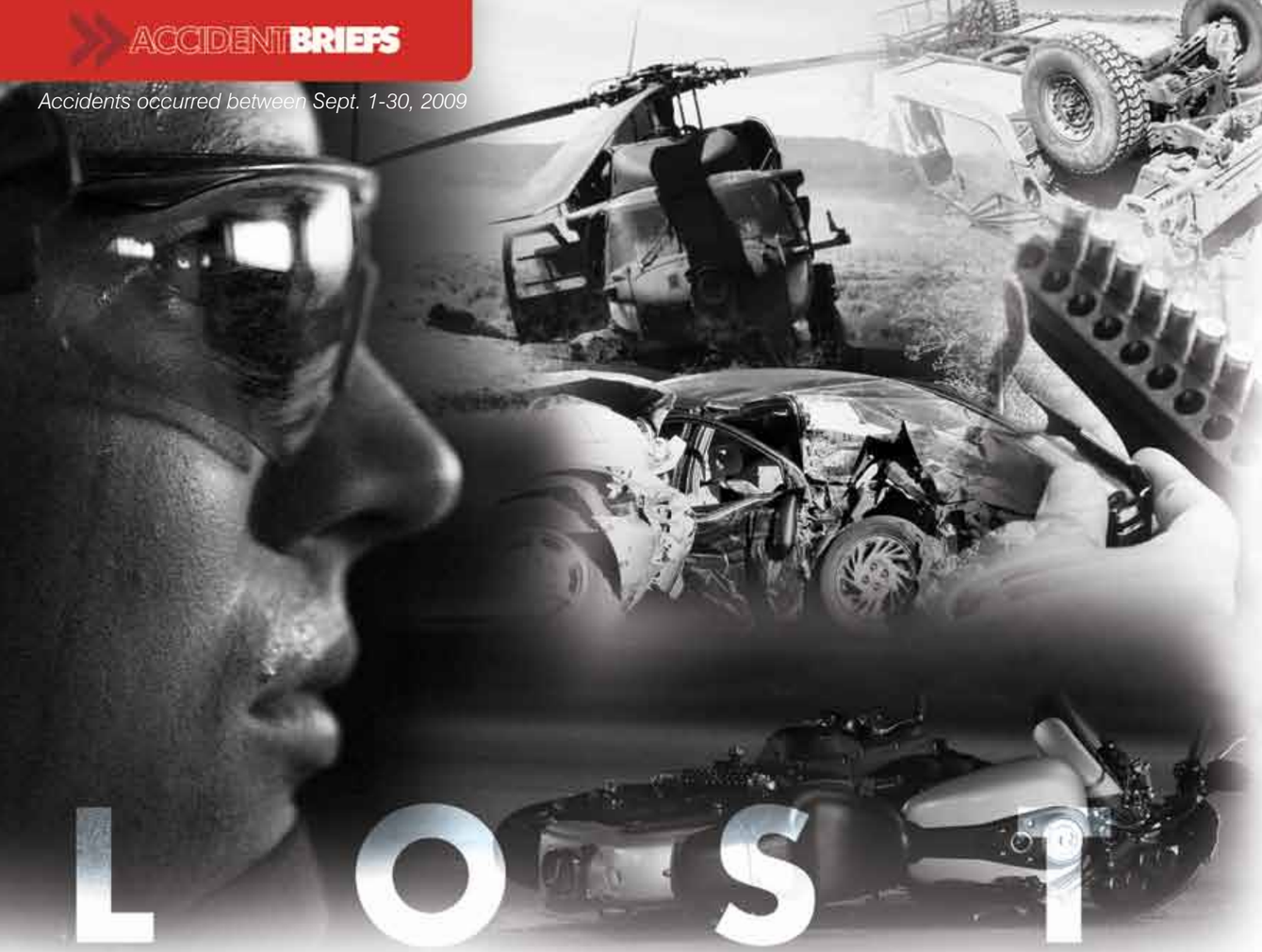
Holding Soldiers accountable helps them grasp the serious consequences of their decisions — consequences they might not recognize at the time. Waters explained that when Soldiers realize it only takes a fraction of a second to lose control of their vehicle and die in an accident, they take life more seriously.

NCOs who wear their stripes with authority and uphold safety standards can make a real difference, Waters said.

"It's by our actions and aggressiveness that we can impact the world in which we live and those we come into contact with on a daily basis," he said. "That's true whether they be Soldiers, civilians who work for us or our own Families."



Accidents occurred between Sept. 1-30, 2009



AVIATION

AH-64D

CLASS A

- The aircraft contacted the ground during a descending turn and sustained severe damage.

CLASS C

- The aircraft experienced a No. 2 generator fire while the crew was repositioning from the forward arming and refueling point to parking.

OH-58A

CLASS B

- The pilot was returning to the airfield after refueling when he reported engine surges and uncommanded yaws. The pilot performed an autorotation, resulting in a hard landing.

OH-58D(I)

CLASS A

- Fire initiated onboard the aircraft during run-up for flight. The crew was able to egress without injury.

OH-58D(R)

CLASS B

- The aircraft's right skid tube contacted terrain during close combat attack operations. The air bags deployed; however, the crew maintained level flight and returned to the forward operating base.

TH-67A

CLASS B

- The aircraft main rotor system contacted terrain during a slope landing iteration.

UH-60A

CLASS A

- The aircraft crashed as the crew was returning to home base in deteriorating weather.

CLASS C

- The aircraft main rotor system contacted trees during confined area operations. All four blades sustained damage.

UAS

RQ-5A

CLASS C

- The nose landing gear of the unmanned aircraft contacted the arresting gear drum on the runway as the crew was conducting an abort-takeoff procedure, causing the landing gear to separate from the fuselage.

GROUND

ACV

CLASS A

- Two Soldiers died when a bridge collapsed as they drove their M1126 Stryker across it during a five-vehicle convoy movement. The Stryker fell about 50 feet and overturned in a dry riverbed. Five other Soldiers aboard the vehicle were injured and evacuated to a medical center.

AMV

CLASS A

- Two Soldiers suffered fatal injuries when their M1151 HMMWV overturned after striking a dirt mound in the roadway.
- A Soldier was killed when the M1151 HMMWV he was operating overturned.
- A Soldier was fatally injured when he was struck by a government vehicle driven by another Soldier.

Personnel Injury

CLASS A

- A Soldier suffered fatal injuries when the loaded rifle he was handling fired and struck him in the eye. At the time of the accident, the Soldier was attempting to spin the rifle.

DRIVING

POV

CLASS A

- A Soldier was negotiating a curve in his privately owned vehicle (POV) when an oncoming vehicle crossed the centerline and hit him head-on. The Soldier's vehicle overturned and he suffered fatal injuries. The Soldier was wearing his seat belt.
- A Soldier was driving with two other Soldiers as passengers when he drifted into the oncoming lanes of traffic. A tractor-trailer in the oncoming lanes swerved onto the right shoulder, but was unable to avoid hitting the Soldier's POV. The Soldier was evacuated to a local medical center, where he later died during surgery. Both passengers survived with non-life-threatening injuries. All three Soldiers were wearing their seat belts.
- A Soldier was driving her POV when she drifted off the right side of the road, overcorrected and caused the vehicle to overturn and enter the median. The driver, who was not wearing her seat belt, was ejected. She was taken to a medical facility for treatment, but died two days later after being removed from life support.

ARMY AVIATION LOSSES

Fiscal 2010

as of Dec. 3, 2009

	Class A/Fatalities
ATTACK	0/0
RECON	1/2
UTILITY	2/1
CARGO	1/0
TRAINING	0/0
FIXED-WING	1/0
UAS	1/0
TOTAL	6/3

ARMY GROUND LOSSES

Fiscal 2010

as of Dec. 3, 2009

	Class A/Fatalities
AMV	3/2
ACV	2/2
PERSONNEL INJURY includes weapons-handling accidents	6/7
FIRE/ EXPLOSIVE	0/0
PROPERTY DAMAGE	0/0
TOTAL	11/11

- A Soldier was driving his POV en route to his duty station when an oncoming vehicle crossed the centerline and struck him head-on, killing him on impact.
- A Soldier lost control of his POV, slid passenger-side first into an intersection and collided with a van. The Soldier was pronounced dead at the scene.
- A Soldier in emergency leave status was located by a state trooper at the scene of a single-vehicle crash. The Soldier had driven off the road and struck a tree, resulting in fatal injuries.
- A Soldier was on emergency leave when his POV left the road on an S-curve, crossed the median and oncoming lanes and struck a building. The Soldier was taken to a medical center, where he died three days later.
- A Soldier was driving his POV with another Soldier as a passenger when he lost control, left the road and struck a tree. The Soldier-passenger was taken to a medical center, where he was pronounced dead.
- A Soldier was driving his POV while on post-deployment block leave when he went through a T-intersection and descended 30 feet into a water-filled ravine. The Soldier died at the scene.

POM

CLASS A

- A Soldier was riding his newly purchased privately owned motorcycle (POM) when he collided head-on with an approaching sport utility vehicle. The Soldier, who was reportedly wearing all required personal protective equipment, was pronounced dead at the scene.
- A Soldier was riding his POM and leading two other riders when he struck the rear of a vehicle stopped in the left lane to make a left-hand turn. The Soldier, who was wearing his helmet, suffered fatal injuries.
- A Soldier riding with a group lost control in a curve, entered the shoulder and struck a guardrail, suffering fatal injuries. The Soldier was wearing his helmet.

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.

POV DRIVING LOSSES Fiscal 2010

as of Dec. 3, 2009

	Class A/Fatalities
CAR	8/9
SUV/JEEP	2/2
TRUCK	2/2
MOTORCYCLE	4/4
PEDESTRIAN	3/3
OTHER*	1/1

*Includes: vans and ATVs

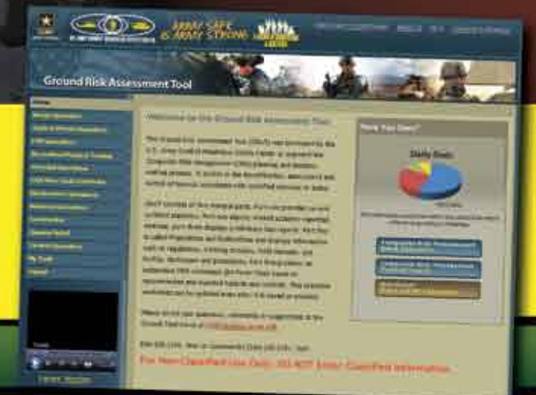
21 TOTAL DEATHS

Fiscal 2009: 21 3 year average: 18

READY FOR THE RISK?

The Ground Risk Assessment Tool is designed to aid in mitigating risk by reinforcing the five-step composite risk management process. Using this tool in concert with military decision-making processes will help Army Leaders achieve success in their missions and make safety an integral part of their planning. Visit the USACR/Safety Center Web site today and try it out for yourself.

- MAKE SOUND RISK DECISIONS
- REDUCE ACCIDENTAL LOSS
- INCREASE COMBAT POWER



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ARMY SAFE IS ARMY STRONG

A BAND OF BROTHERS & SISTERS

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OFFICIAL SAFETY MAGAZINE OF THE U.S. ARMY

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KNOWLEDGE

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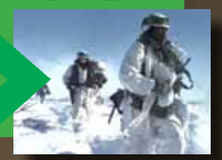

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U.S. ARMY COMBAT READINESS/SAFETY CENTER

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https://safety.army.mil

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Mission statement: The United States Army Combat Readiness/Safety Center (USACR/Safety Center) supports our Army by collecting, analyzing and communicating 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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FROM THE DASAF

"WE SAW in 2009 that ENGAGED LEADERSHIP at ALL LEVELS of command DOES indeed WORK in KEEPING our SOLDIERS SAFE and MISSION-READY."

RENEWING THE COMMITMENT TO SOLDIER SAFETY

Happy New Year to everyone! January brings a sense of renewal and an opportunity to reflect on our past missteps and successes and map out a plan to make the coming year the best yet. Regarding accidents, our Army had a pretty good year in 2009. In fact, it was the best year since the terrorist attacks of Sept. 11, 2001. We can do even better in 2010 by taking a look at where we've been, finding those areas we can improve and renewing our commitment to keeping our great Soldiers, our "Band of Brothers and Sisters," safe in the months and years ahead.

A BAND OF BROTHERS & SISTERS

Here's a broad look at the numbers for fiscal 2009. Overall, Army fatalities were down 16 percent from fiscal 2008, with a reduction of just over 42 percent for the five-year period since the beginning of fiscal 2005. That's great news for the Soldiers, Families and civilians who make up our Army team and for engaged Leaders who have put forth great effort to drive down unnecessary losses.

We cannot allow positive statistics to lull us into complacency, however. The bottom line is 173 Soldiers were killed in accidents in fiscal 2009, the vast majority of them in off-duty privately owned vehicle (POV) accidents. Although both POV and motorcycle fatalities were down by about 13 percent in 2009, two specific factors — alcohol and/or speed — contributed to more than half these accidents. We also didn't reduce accidents across the board in 2009; fatalities in both Army Motor Vehicles and Army Combat Vehicles rose slightly from numbers logged in 2008.

We saw in 2009 that engaged leadership at all levels of command does indeed work in keeping our Soldiers safe and mission-ready. We've also learned Soldier-to-Soldier and direct Family engagement are vital to our safety programs. Leaders, please continue to search within your formations for those areas that need improvement while simultaneously strengthening your proven safety practices. I encourage all Leaders to utilize our Leader Risk Assessment, Individual Risk Assessment and the soon-to-be-released "Soldier-to-Soldier" Assessments to gain insights into their formations and develop a way ahead.

Our problems with off-duty Soldier indiscipline call for Leaders to personally engage their Soldiers regarding individual responsibility in off-duty activities, particularly behind the wheel of a POV. Similar effort is needed on the tactical side, where fatal accidents involving speed and nonuse of restraint systems remain an all-too-common occurrence. "Safety sense" while driving is especially important during this time of year, when many of our Soldiers will encounter snow and ice conditions in both their personal and tactical vehicles.

I am confident we can capitalize on this past year's many safety successes and make 2010 an even safer year for our total Army Family. A strong team effort and steadfast dedication to safety are proven winners in our strategy to eliminate needless losses, and the U.S. Army Combat Readiness/Safety Center stands ready to help as you renew your commitment to Soldier safety in 2010 and beyond.

Thank you for all you do to make each and every day safe for our Soldiers, Families and civilians. Have a happy, prosperous and safe new year!

WILLIAM T. WOLF
Brigadier General, USA
Director of Army Safety

HOW DID OUR ARMY DO?

Fiscal 2009 End-of-Year Review

MARY ANN THOMPSON, CHARISSE LYLE AND GLEN DAVIS
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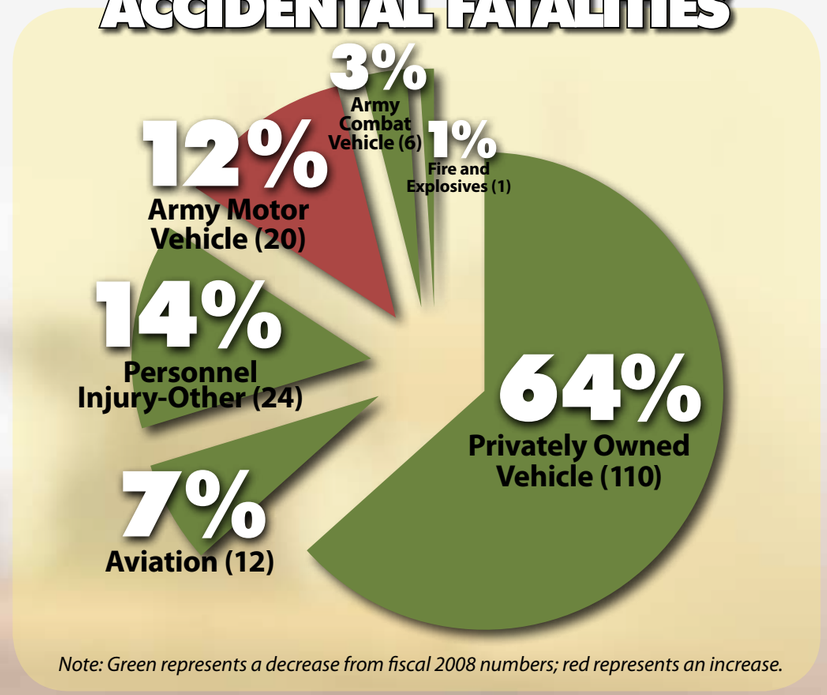
The Army's accidental fatality numbers dropped in fiscal 2009 to their lowest level since the terrorist attacks of Sept. 11, 2001. Additionally, the accidental fatality rate, 0.24 per 1,000 Soldiers, is at its lowest since 1974, the year the Army Safety Management Information System began. Leading the way in the decline were privately owned motorcycle deaths, which dropped by 19 when compared to fiscal 2008.

During fiscal 2009, the Army experienced 173 accidental military fatalities. Overall, fatalities were down 16 percent from the 207 experienced in fiscal 2008. As seen in the chart to the right, privately owned vehicle (POV) accidents accounted for 64 percent of the fatalities, followed by personnel injury-other (PIO) accidents at 14 percent, Army motor vehicle (AMV) accidents at 12 percent, manned aviation accidents at 7 percent, Army combat vehicle (ACV) accidents at 3 percent and explosive and fire accidents at 1 percent. This article provides a more detailed breakdown of Army on-duty and off-duty accidental fatalities during fiscal 2009.

ON-DUTY

There were 52 on-duty Soldier accidental fatalities in fiscal 2009, three fewer than in fiscal 2008. These deaths involved the AMV, ACV, manned aviation, explosive and fire and PIO. (Editor's note: In addition to these fatalities, a dismounted Soldier was fatally injured when he was struck by a POV.)



Note: Green represents a decrease from fiscal 2008 numbers; red represents an increase.

GROUND

Army Motor Vehicle

AMVs are all Army wheeled motor vehicles except the Stryker and Mine Resistant Ambush Protected (MRAP) vehicle. There were 20 Army military fatalities related to AMV accidents during fiscal 2009, two more Soldier deaths than the previous year. Of the 20 fiscal 2009 AMV fatalities, 18 occurred during Operation Iraqi Freedom/ Operation Enduring Freedom (OIF/OEF).

Tactical vehicle accidents accounted for 15 of the 20 fatalities, 12 of which involved the HMMWV. This total was three more HMMWV fatalities than in fiscal 2008. Of the 12 HMMWV fatalities, 11 occurred during OIF/OEF. The M1151 accounted for 10 of the 12 HMMWV fatalities.

Army Combat Vehicle

ACVs include all tracked combat vehicles, as well as the MRAP and Stryker. There were six ACV-related Soldier accidental fatalities in fiscal 2009, which was down one fatality from the previous year. All six of the fatalities occurred during OIF/OEF.

Three of the six fatalities resulted from MRAP vehicles overturning and fatally injuring the gunner. One Stryker accident also involved a rollover, resulting in two Soldier deaths. The remaining ACV fatality resulted from an M1117 Armored Security Vehicle rollover that fatally injured the gunner.

Explosive and Fire

There was one Soldier accidental fatality due to fire in fiscal 2009, compared to two fatalities the previous year. A Soldier in Iraq died in a fire that started when he tried to ignite a propane stove with a lit piece of paper.

Personnel Injury-Other

PIO accidents are Army accidents that involve injury to personnel not covered by any other accident type. There were 12 on-duty PIO accidental fatalities in fiscal 2009, compared to 14 fatalities in fiscal 2008.

Four of the fiscal 2009 fatalities occurred during OIF/OEF.

Physical training (PT) and weapons handling were the most frequent activities involved in the 12 PIO fatalities. Three PT-related fatalities included a Soldier suffering a heat injury during a road march, a Soldier collapsing after participating in organized flag football and a Soldier failing to surface while swimming as part of personal PT (the Soldier died four days later). There were two on-duty weapons-handling fatalities, including a Soldier death from a negligent discharge and a Soldier death from friendly fire.

Two fatalities involved parachuting, while two other fatalities involved Soldiers being pinned by falling loads. One Soldier drowned when he fell into a river while on dismounted patrol in Iraq, and a Soldier drowned while participating in recreational swimming activities. Another Soldier was presumed drowned after he fell overboard from a tug during vessel qualification.

AVIATION

The Army lost 12 Soldiers in fiscal 2009 aviation accidents, compared to 14 Soldiers killed the previous year. One-third of the fiscal 2009 fatalities occurred in OIF/OEF. The UH-60 Black Hawk, OH-58D Kiowa Warrior (KW) and AH-64 Apache were involved in these fatal accidents.

As depicted in the chart on page 7, fiscal 2009 Class A and B manned aircraft accidents increased by seven and three, respectively, from fiscal 2008. Class C accident numbers show a substantial decrease from fiscal 2008. However, in accordance with Army Regulation 385-10, units have 90 calendar days to submit their Class C accident reports to the USACR/Safety Center. Therefore, this number will change as more reports are received.

Aviation Accident Areas of Concern

Power management. Power management errors caused four Class A accidents, three in the Black Hawk and one in the KW, and resulted in four Soldier deaths. All occurred in a mountainous environment and involved mission-planning errors. In three of these accidents, the crews did not take the prevailing tail winds into consideration.

Materiel failures/ malfunctions. Three of the fiscal 2009 fatalities occurred in two accidents involving materiel failures: An engine failure in an AH-64D and an uncommanded flight control input of unknown origin that caused a pilot-induced, low-airspeed left pedal turn to become uncontrollable in a UH-60L. Additionally, there were 12 nonfatal accidents caused by definite or suspected materiel failures or malfunctions (five Class A, two Class B and five Class C). In three of the 14 accidents, the crews responded incorrectly to an in-flight materiel failure (two full authority digital electronic control [FADEC] failures and one engine failure), which increased the severity of the accidents.

Wire strikes. There were two Class A wire strikes, both occurring in Iraq at night during night vision goggles (NVG) flight, which resulted in two fatalities.

Inadvertent instrument meteorological conditions (IIMC). One fatal accident in Iraq involved an incorrect response to IIMC. While attempting a nighttime visual meteorological conditions approach, the crew encountered IIMC but did not immediately initiate IIMC recovery procedures and transition to instruments. This delay allowed the pilot on controls to experience spatial disorientation and lose aircraft control, resulting in a destroyed aircraft, one Soldier fatality and 12 injuries.

Maintenance test flight (MTF) autorotational checks. Two Soldiers were fatally injured when their OH-58D(R) impacted the runway during an MTF autorotational check. The maintenance test pilot (MP) failed to ensure the throttle was increased to 100 percent before attempting the power recovery, thereby allowing airspeed and rotor rpm to decrease below that required for sustained flight. A similar accident occurred in which another MP also failed to return the throttle to full power, causing the OH-58D(R) to impact the ground with Class A damage and injuries, but no fatalities.

Emergency procedures training. Eleven accidents occurred during emergency procedures training (one Class A, three Class B and seven Class C). The majority of these accidents involved simulated single-engine failures (seven in single-engine and two in dual-engine aircraft) and two OH-58D(R) FADEC manual throttle operations.

Brownout. There were four brownout accidents: one Class A with no fatalities and three Class B. All occurred in OIF/OEF during landings at night under NVG.

A common thread across the fiscal 2009 aviation accidents was a breakdown in crew coordination, which contributed to 43 percent of the Class A accidents. Examples include crewmembers failing to monitor flight instruments or assist in obstacle clearance and failure of crewmembers to announce decisions or actions that affected the ability of other crewmembers to properly perform their duties (e.g., announce go-around).

MANNED AVIATION ACCIDENTS

SOLDIERS KILLED IN POV ACCIDENTS

Vehicle Type	Fiscal 2009	Fiscal 2008	Increase/ Decrease
Motorcycle	32	51	-19
Sedan	40	44	-4
Other POV	32	30	2
Pedestrian	5	4	1
Totals	109	129	-20

SOLDIERS KILLED IN MOTORCYCLE ACCIDENTS

Motorcycle Type	Fiscal 2009	Fiscal 2008	Increase/ Decrease
Sport	20	37	-17
Cruiser	10	7	+3
Not Reported	2	7	-5
Totals	32	51	-19

OFF-DUTY

There were 121 off-duty accidental fatalities in fiscal 2009, including those related to motorcycles, sedans, other vehicles, pedestrians, PIO, sports and human movement.

PRIVATELY OWNED VEHICLE

Fiscal 2009 ended with 109 off-duty POV Army military fatalities — 20 fewer than the previous year. The reduction in POV fatalities was accounted for largely by the decrease in fatal sport motorcycle accidents.

With many fiscal 2009 accident reports still pending, the USACR/Safety Center does not have a complete list of the causes of these accidents. However, current data indicate indiscipline to be among the leading causes of fatal POV accidents. When Soldiers know what's right but willfully choose an alternate course of action, we call that choice "indiscipline." Indiscipline can take many forms, including speeding, failure to wear a helmet or seat belt and driving under the influence.

Motorcycles

Speeding was involved in 17 motorcycle fatalities in fiscal 2009. Of these, 12 Soldiers were riding sport motorcycles, four were riding cruisers and one was on an unidentified motorcycle type. Failure to wear helmets contributed to the deaths of four riders — two on sport motorcycles and two on cruisers. Leaders comprised the largest portion of fatal motorcycle accidents in fiscal 2009, with 73 percent of the victims between the ranks of E5-O2.

Sedans

In fiscal 2009, 40 Soldiers were killed in sedan accidents, a reduction of four fatalities from fiscal 2008. Again, indiscipline appears to be a leading cause in these accidents. Sixteen Soldiers were killed in accidents involving excessive speed. Although wearing a seat belt is a proven method for reducing fatalities in POV crashes, many Soldiers still choose not to buckle up. In fiscal 2009, 12 Soldiers killed in sedan accidents were not wearing seat belts.

Other POV

Other POVs include all-terrain vehicles, bicycles, Jeeps/SUVs/utility vehicles, station wagons, trucks and vans. In fiscal 2009, 32 Soldiers were killed in other POV accidents, two more than in the previous year.

Indiscipline figured prominently in these losses as well. As with sedan and motorcycle fatalities, speed was a leading cause of the fiscal 2009 other POV fatal accidents. Ten Soldiers were killed in accidents where excessive speed was involved. Failure to wear seat belts was also a factor in several of the fiscal 2009 accidents. Of the 32 Soldiers who were killed, 10 were not wearing seat belts.

Pedestrian

Five Soldiers were killed as pedestrians in fiscal 2009, an increase of one over fiscal 2008. Three of the five Soldiers died while attempting to cross multi-lane highways.

Personnel Injury-Other

Off-duty PIO accidents in fiscal 2009 resulted in the deaths of 12 Soldiers. This is a significant decrease from fiscal 2008, when 22 Soldiers were killed.

Three of the fiscal 2009 Soldier fatalities resulted from water-related activities, including a Soldier who drowned when his raft overturned, a Soldier who drowned while swimming in a lake and a Soldier who died from hypothermia after falling into a river.

Three Soldiers died from the negligent discharge of personal weapons, which included a rifle, shotgun and handgun. Two Soldiers died in parachuting accidents, one in a recreational skydiving class and the other while BASE (buildings, antennas, spans and earth) jumping. A Soldier was killed when he fell from a barracks window; a Soldier died from carbon monoxide poisoning inside his residence; a Soldier died when he walked through a glass door, severing an artery in his arm; and a Soldier died after he was struck by a tree that was being cut down.

CONCLUSION

While the Army closed fiscal 2009 with an overall 16-percent decrease in Soldier fatalities, there is still much that can be done to prevent off-duty losses, which accounted for 70 percent of the total accidental fatalities. The many on-duty safety programs and policies that protect our Soldiers, in both combat and in garrison (on-duty), have to be applied in our approach to off-duty safety.

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 their responsibility and mission. Composite risk management should be inherent in every decision and Leaders must remain vigilant to protect against risk and prevent accidents to preserve our force.

We must also remember that our Band of Brothers and Sisters does not dissolve when the duty 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. Likewise, our Families have a strong influence over their Soldiers, especially during off-duty time. Families, friends and peers are our Soldier's off-duty battle buddies and have the responsibility to remain watchful of the increased hazards associated with off-duty activities.

We all must embrace Army safety and use the tools, programs and lessons learned to protect our most vital resource — our Soldiers — both on and off duty in combat or home station and off-duty with Family and friends. Our Army simply cannot afford to give accidents the opportunity to strike again; we must remain vigilant about safety and apply composite risk management to all our daily activities, both on and off the battlefield. Safety begins with awareness and we can never "give safety the day off." «

Editor's note: At the time this article was written, information on accidental fatalities experienced during this time frame was still filtering in to the U.S. Army Combat Readiness/Safety Center to be entered into the database, so the statistics and findings may change in the coming months.

WHAT DO YOU THINK?

From January through March, KNOWLEDGE magazine is conducting a survey to determine whether we're meeting our readers' needs. Please help us out by taking a couple of minutes to answer a few simple questions at https://safety.army.mil/.

After all, this is your magazine. Shouldn't it contain the information you find helpful?

Keeping Soldiers in the Fight

1ST LT. BRANDON PHILLIPS
AND 1ST LT. JARED HOFFMAN
Forward Support Company, 84th Engineer Battalion,
130th Engineer Brigade
Afghanistan

The gunner's restraint system (GRS) is often looked at by many Soldiers as just another type of seat belt restraint. However, our unit's combat experiences have shown just how important this system is. The GRS secures gunners in their vehicles, preventing them from being thrown out in the event of a rollover or the detonation of an improvised explosive device (IED). Two different incidents during our deployment illustrate this point.

A Tale of Two Rollovers

During a combat logistical patrol, the trail vehicle in a convoy experienced a rollover while trying to avoid an obstacle at high speed. The driver overcompensated while attempting to regain control of his Mine Resistant Ambush Protected (MRAP) vehicle, and the gunner was ejected from his turret. The gunner's back was fractured in several places and nearly every bone in both arms was shattered. His injuries could have been limited had he been wearing his GRS. Thankfully, this Soldier survived and is making a steady, albeit lengthy, recovery stateside.

A closer investigation of the events leading to the rollover indicated that Leaders within the convoy failed to adequately inspect all vehicle gunners before departure. In this case, Leaders failed their Soldiers by not mitigating a potential risk involved in their mission. A simple check that only takes a matter of seconds could have prevented this Soldier's substantial injuries.

On a later mission along the same main supply route, an MRAP was involved in a crush-wire IED detonation that caused minor damage to the hull and destroyed a rear tire. The driver was unable to maintain control of the vehicle because of the blown tire and, subsequently, the MRAP overturned. Fortunately, this gunner was wearing his GRS. Although he suffered injuries, they were not as severe as in the previous rollover incident. This time, Leaders adequately inspected each gunner for their GRS before the start of their mission. The key Leader's attentiveness may very well have saved the life of this Soldier or, at the very least, prevented more significant injuries.

As these cases illustrate, Leaders cannot afford to overlook even the smallest ways to mitigate risks and keep their Soldiers safe. There are far too many ways to become a casualty in a combat zone. We have the best training and equipment in the world, but all of that becomes null and void when leadership fails their Soldiers. So do what's right — identify risks, mitigate them to the lowest level and safeguard your Soldiers. We owe it to them.

> "Both **GARRISON** and **DEPLOYED MISSIONS** require a **CONSTANT REVIEW** of **RISKS** and developing **WAYS** to **MITIGATE** them."

Leaders are the Vital Key

Safety is one of the most important considerations Leaders must look at when planning and executing missions. Both garrison and deployed missions require a constant review of risks and developing ways to mitigate them. As a Leader in a deployed area of responsibility, there are scores of risks to take into account. Small-arms fire, IEDs, low-hanging wires, scorching temperatures and vehicle rollovers are just a handful of the risks Soldiers face downrange.

Thankfully, the equipment and resources available to Soldiers today are the best they have ever been. Items such as fire-retardant clothing, ballistic eye protection and state-of-the-art body armor have increased the level of protection for troops by leaps and bounds in recent years. In addition, MRAP vehicles protect troops with their thick armor hulls. They also possess enhanced optical devices that allow the quick and accurate identification of possible threats.

However, advances in protective equipment and technology can only take us so far. Leaders at all levels can mitigate risk and ensure the safety of their Soldiers by conducting proper pre-combat checks and pre-combat inspections. Noncommissioned officers (NCOs) are the start point for this vital process. It should be the first-line supervisor, normally a sergeant or staff sergeant, who checks each Soldier to ensure they have all the pieces of gear and equipment required for their mission.

In our unit, when the Soldier's first-line supervisor verifies they have all the proper equipment, that NCO signs a checklist indicating the check was performed accurately. Senior Leaders can then conduct random spot checks of the personnel involved in the mission and take note of any deficiencies that could affect the mission. Even when high-ranking "guests" are along, the convoy leadership must make it a priority to inspect their equipment, as well. No Soldier is above this standard.

Aside from the individual Soldier and his equipment, combat vehicles must also be inspected with the same vigor. Vehicle operators and Leaders need to perform preventive maintenance checks and services, as well as inspect the multitude of new equipment found in the field today. Electronic warfare devices, objective gunner protection kits and other new devices must be a part of this process. As we related in the first half of this article, we know how important this is because of our experiences with the GRS. Properly used, the GRS and risk mitigation have proved to be a vital component in our unit's effort to enforce safety.

Troops In, Brown Out

CHIEF WARRANT OFFICER 2 KENNETH G. MCALISTER
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Fort Hood, Texas

It was a cool November night. The mission called for an air assault insertion into a small village just north of Baghdad, Iraq. Although we were both pilots in command (PC), I was the air mission commander for this particular flight. It was our commander's practice to put two PCs in the lead aircraft, whenever possible, to lessen the workload of flight lead.

We took off from Taji shortly after 2300. The flight was not a long one, six minutes at the most. We soon picked up our landing direction, due north, and hit our release point. The AH-64 gunships (Chalk 2) for our close air support called our landing zone (LZ) "ice," a term used to indicate the LZ was free of hostile activity. We slowed to 70 knots indicated airspeed (KIAS) and performed our before-landing checks. I was on the controls and the PC was navigating and calling out airspeeds, altitude and distance to set up for a time-on-target landing. The LZ was small and situated in the middle of a small town surrounded on three sides by buildings and many small sets of wires.

The LZ was on a road that ran north to south, just north of an intersection with a berm on the east side parallel to it. I began our landing just after flying over the large set of wires along the intersecting road, but had to extend because of another set of wires that were on short final. I had accomplished plenty of brownout landings before; however, nothing — not even training in Kuwait — could have prepared me for this.

The brownout landing started out like any other landing, but it quickly got worse. I lost all visual references; nonetheless, I continued to hover until I couldn't stand it any longer. I knew the ground was there and I knew I would eventually land. My thoughts were that if I had to complete a go-around, the bad guy would get away. I couldn't stand not being able to see anything. I announced that I was totally brownout.

The PC quickly took the controls and told me he could still see a building on his side of the aircraft. He completed the landing with me guarding the controls. Chalk 2 never made it even close to landing in their LZ, which was 50 to 60 meters away at another road intersection. They completed a go-around and landed back at the original takeoff point. We inserted our troops and headed back to Taji, which was less than five miles away, to wait for the extraction call.

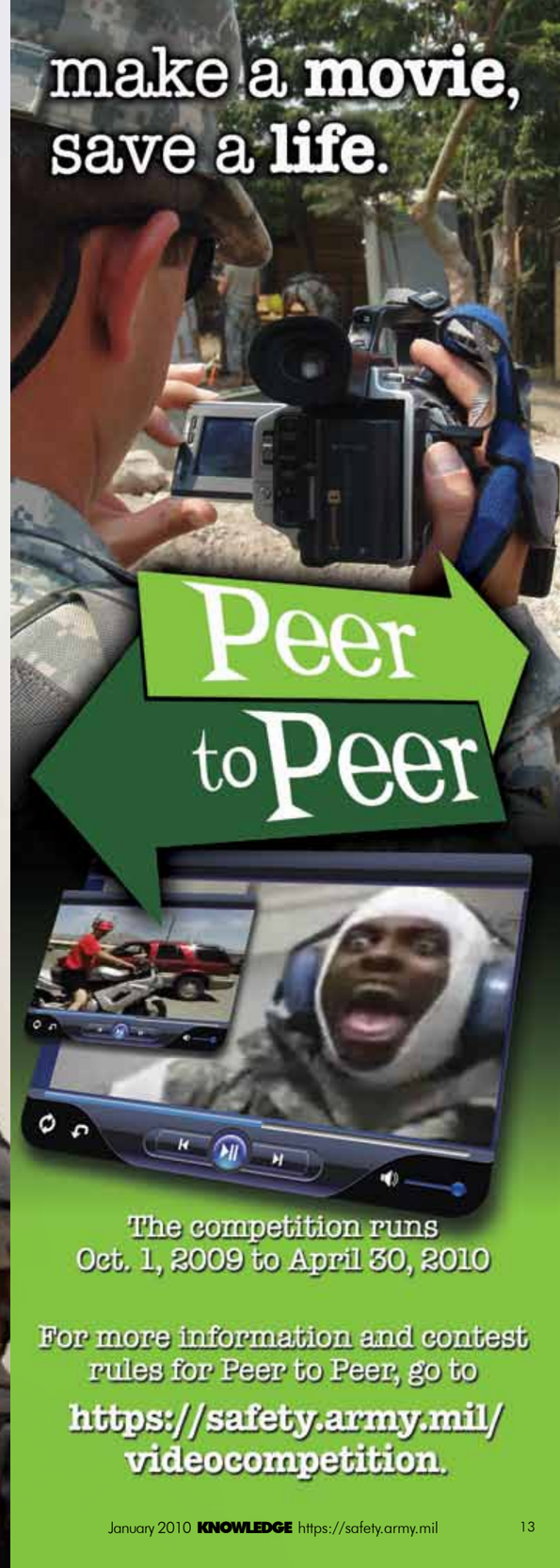
Our flight got the call for extraction just after midnight. We didn't need a route and we didn't have a timeline. We had a pickup zone (PZ) with a landing direction and it happened to be on the same road as the original LZ. We picked up our landing direction again, hit our release point and called the troops on the ground.

I transferred the controls after slowing to 70 KIAS. I told the PC that he should probably land since he had a visual reference during the last landing. After a three-way positive transfer of the flight controls, I called out airspeed, altitude and distance to the PZ. The PC gave the "bounce" call to the flight and began landing. This time, he lost visual cues and I didn't. In fact, I saw the ground getting closer to us through the chin bubble after we initially touched down. I shouted that we were rolling right and put my hand on the cyclic control to move it to the left to level us out. This put the left main landing gear on the ground. After he reduced the collective, the PC transferred the flight controls back to me and monitored the loading of our passengers.

Chalk 2, flown by our commander and a platoon leader, again failed to land on the first try. They did a go-around to our right and launched flares in the process, which started a fire in the field to the east. We again took off to the north and met our sister ship after their pickup.

This whole ordeal reveals how hastily planned air assault missions into unknown areas can be extremely hazardous. This situation also illustrates how good crew mix can mitigate hazards to an acceptable level. As for the marginal crew mix of the other aircraft, that's a whole other story.

Oh, yeah, we got the bad guy too!



Smashed, Trashed and Stranded on the Road

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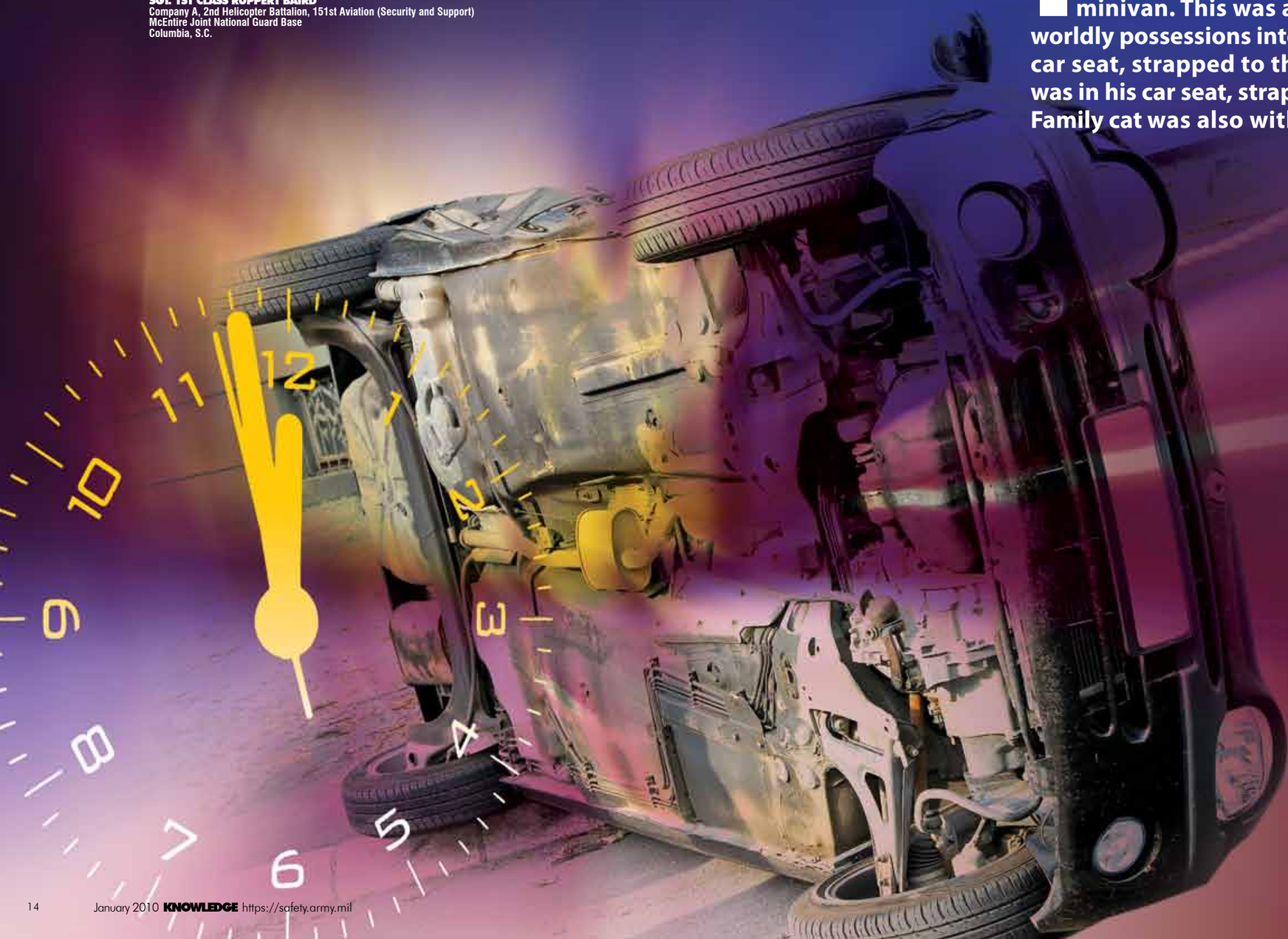


It was just before New Year's and I was leaving Fort Lewis, Wash., to move my Family back to South Carolina. I was coming off active duty and had rented a twin-axle trailer and installed a hitch on my minivan. This was a do-it-yourself move and we'd loaded all our worldly possessions into the trailer. Our 4-year-old daughter was in her car seat, strapped to the front passenger seat, and our 2-year-old son was in his car seat, strapped to the rear bench seat next to my wife. The Family cat was also with us as we left a few minutes before midnight.

I was anxious as we pulled out of Tacoma, Wash., and headed east toward Snoqualmie Pass and the Cascade Mountains. As we made our way through the pass, we encountered gusting winds that rocked the van and trailer. I slowed down to ensure I kept full control. After we got through the pass, the winds died down. We merged onto Interstate 82 and I settled in for a night of driving.

One of the strange anomalies of the interstate system is a loop on I-82 in southeastern Washington. I planned to bypass this loop by going through Prosser, Wash., on State Highway 221 and reentering I-82 just north of Umatilla, Ore. Mind you, this was before Google Maps and MapQuest, so the only thing I had was a map. It seemed logical to me that this would be a safe, well-traveled route.

As we pulled through Prosser, I recognized the dangers posed by the ice, snow and wind and drove at or below the speed limit. I then began climbing into Horse Heaven Hills.

As I drove, I saw a warning sign for a 90-degree right turn and a 25-mph speed limit. I slowed, feeling sure I would be fine at 20 mph; however, the black ice didn't agree. As I eased around the turn, I felt the trailer rock. Thinking I had encountered winds again, I decelerated. That was a mistake. Even though the van made the corner, the trailer began sliding on the ice. Before I knew what happened, the van and trailer jackknifed and I was out of control. I tried steering into the direction of the skid, but to no avail. All I could do was hold on as my van was pushed diagonally across the road and into the oncoming lane. Fortunately, there were no other drivers on the road.

I watched helplessly as the van's passenger door struck a road sign, shattering glass all over my daughter and into the van. My wife had been sleeping on the van's floor and woke up just in time to feel the wheels come off the pavement as we encountered soft dirt on the roadside. We felt the van tilt and roll over at least twice before landing on its right side.

My daughter and son were screaming. I reached down from my now-elevated seat, brushed the glass shards off my daughter and found her unhurt. I then looked to the rear to check on my wife and son. He was firmly strapped into his car seat while my wife was sitting cross-legged on the interior right side of the van. Although stunned, she was amazingly calm. I repeatedly asked her if she and our son were all right. Incredibly, they were.

I looked forward and was surprised the van's engine, headlights, radio and heater were still functioning perfectly. I took a breath, shut off the van and smelled for gasoline. Fortunately, I didn't smell any fumes. Nevertheless, I decided we needed to exit the van immediately. I removed my seat belt, carefully pushed open the driver-side door, pulled myself out of the van and had my wife hand our children up to me. Then I helped my wife out of the van. A carload of boys rolled up to the accident scene. They helped me move my wife and kids off the side of the van and placed them inside their warm car while I assessed the situation.

The rear hatch and the left-rear portion of the van's body and roof were caved in. The trailer had stayed connected to the hitch and rolled over with us as we overturned in the minivan. The trailer doors had popped open, scattering many of our belongings, and our cat was gone. I returned over the next few days, but I never found him. The people of Prosser were incredible and took excellent care of us during our six-day stay.

The van and the trailer were totaled. We ended up driving home in the largest rental truck U-Haul had — the only one that fit a Family of four. We spent all of our travel money and maxed-out our credit card. Thankfully, the only injury was a bruise to my wife's shoulder. The rest of our trip home was uneventful.

I've always been impatient to get on the road. On this journey, I let that get in the way of proper trip planning and risk assessment. I'd rented a trailer that was too large for my minivan. And, while I was aware of the black ice danger on the roads, I assumed my two years of winter driving had adequately prepared me for it. Unfortunately, an unfamiliar road, an extra-heavy load and a typical "GI" effort to save money proved to be my downfall.

Clearly, I should have hired a professional moving company. Also, I should have waited until the morning to leave, when much of the ice would have been melted. I also should have ensured everyone in the van remained properly buckled in.

The good thing about lessons learned is that you get the opportunity to avoid repeating your mistakes. Back then, online tools like the U.S. Army Combat Readiness/Safety Center's Travel Risk Planning System (TRiPS) didn't exist. Now that they do, I — as a full-time National Guardsman — use them. It sure beats being smashed, trashed and stranded on the road.

FYI

If you're new to towing with your POV, visit the following link: https://safety.army.mil/ and type "towing safety" in the search window.

Behold the Cold

SGT. 1ST CLASS STEVEN DECKER
Northern Warfare Training Center
Fort Wainwright, Alaska

Do you want to know the secret to staying warm? Don't get cold.

At the beginning of a winter training course here at the Northern Warfare Training Center (NWTC) at Fort Wainwright, Alaska, I'll occasionally pose that question to a group of Soldiers. Some look disappointed when I tell them the answer, but others get it right away and their whole outlook on winter training changes in an instant. By the end of the course, most of them understand the simplicity of this complex and often daunting task.

Fort Wainwright is probably the coldest post in the U.S. military. During the winter months, the temperatures regularly drop to minus 20 F or below for weeks at a time. We teach units in U.S. Army Alaska (USARAK) and, to a smaller degree, other military personnel how to operate in a cold, snow-covered, mountainous area. We train about 500 students a year who then go back and become the trainers for their respective units. The following are some of the training tips we pass down to Soldiers.

Fuel Your Body

The first step to staying warm in a cold environment is to properly fuel your body. Depending on your exertion level, Soldiers should consume between 4,500 and 6,000 calories and three-and-a-half to five quarts of water per day. Light infantrymen will require the upper end of that scale, while someone who works in the tactical operations center will be on the lower end.

Meals, Ready to Eat (MREs) provide about 1,400 calories per menu, so four per day will usually do the job. Meals, Cold Weather (MCW) provide about 1,700 per meal. However, palatability is a challenge. MCWs require rehydration for the main meal component. This is best accomplished with boiling water. You can mix cold water with MCWs, but it will take longer to rehydrate and the food won't taste as pleasant.

An MRE can be used even after being frozen, but it must not be refrozen. The main components of the meal can be placed inside clothing for an hour or so to thaw or even in a sleeping bag overnight for a "warmish" breakfast. The other part of the meal, "grazing foods," should be eaten between meals to refuel your body. Remember, a near constant calorie intake is vital to staying warm.

Cover Your Body

Clothing should do three things: insulate, ventilate and provide protection from the wind. The older Extreme Cold Weather Clothing System (ECWCS) and new seven-layer Generation III ECWCS both do this very well. The challenge is figuring out what to do with all that clothing.

The most important measure to take with any clothing system is to layer. Start out with the lightest polypropylene underwear and build from there. The layers then must be protected by a shell. The ECWCS Gore-Tex pants/jacket combo is an excellent all-round choice. The soft-shell pants/jacket from the seven-layer system works best in high-aerobic activities in very cold conditions. A complete class on the proper use of the seven-layer system and ECWCS is available for download at http://www.wainwright.army.mil/nwtc/slides.html.

Heat management is a constant challenge when operating in cold weather. Knowing when to dump or hold heat is the key. I watch students after the 10-kilometer snowshoe march and quite a few will be dripping with sweat at the finish. They invariably say, "I just wanted to get it over with." I counter with, "What would you do if you were forced to stay outside for another five or so hours?" They usually don't have an answer.

Soldiers must ventilate before it is needed and reduce insulation before a movement or exertion. The big, puffy suit in the seven-layer system is meant to be put on while static and put away when moving. Likewise, that fleece jacket may be soft and cuddly and quite the fashion accessory around post, but you really don't need to wear it on a good, long dismounted movement. If at all possible, have dry layers available to replace or upgrade clothing if needed.

Move Your Body

Cold weather requires people to be proactive. If your fingers become cold, windmill your arms to force blood into the fingertips. Cold toes? Wiggle them or swing your legs. Shivering? Exercise a little. The point is to not allow cold to gain ground in your body.

Observe the other people around you, looking beyond the obvious. We know what is wrong with the Soldier who is shivering and twitching on the ground or has a white patch on his nose. The Soldier who escapes our attention is the one who stands perfectly still with his head drawn down between his shoulders and his arms hanging stiffly at his sides. He grumbles at tiny issues, mumbles when addressed, fumbles when handling simple tasks and stumbles when walking on easy ground. This Soldier needs help now; but just as important, look for the symptoms of cold weather injury in yourself.

At the NWTC, the cadre not only trains in the cold, they enjoy the weather. Winter doesn't have to be a time of fear and loathing. Embrace the cold — but be smart about it.

+ INEXPERIENCE
INEFFECTIVE CREW COORDINATION
= DISASTER

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

The makeup of an aircrew can be an important factor in crew coordination errors. Let's examine an accident scenario involving an OH-58D maintenance test flight (MTF). We'll look at what happened, what should have happened and what we can learn from the experience.

The mission was to conduct preventive phase maintenance (PPM), which included an autorotational RPM check. The weather was agreeable, the preflight looked good and, on the surface, the crew mix seemed right for the mission. The maintenance examiner (ME) had more than 1,000 hours in the OH-58D and the pilot (PI) had almost 300 hours of flight time in the aircraft.

What Happened?

It was a typical day. The crew met in the morning to ensure the aircraft would be ready for the MTF. They had lunch later that day with other members of the unit. That afternoon, the crew received the weather briefing and, shortly thereafter, departed for the maintenance test flight area (MTFA) to conduct the PPM.

The ME sat in the right seat and the PI in the left seat. After the majority of the MTF had been conducted in the MTFA, the crew planned to complete the autorotational RPM check in the traffic pattern upon return to the airfield. On their way back from the MTFA, tower informed them that the winds had shifted and for them to use the active runway. The ME requested to remain west of the airfield to avoid a fog layer and enter left, downwind from the west. The tower approved the request and, a few minutes later, the ME requested an altitude deviation to 2,000 feet mean sea level (MSL) to conduct the autorotational RPM check. The tower approved the request and, on final approach, the aircraft entered an autorotational descent to the active runway.

During the maneuver, the ME allowed the airspeed and rotor RPM

to decrease to a level that did not allow for sustained flight. The aircraft failed to recover from the autorotative descent and crashed on the runway, destroying the aircraft and fatally injuring the two crewmembers.

What Went Wrong?

The circumstances indicate the crew failed to properly scan the aircraft's flight instruments while performing an autorotational RPM check. The ME allowed the airspeed to decrease below what is required for a steady state autorotation. As the airspeed decayed, the rate of descent increased.

When the aircraft dropped below 400 feet above ground level (AGL), the ME realized the throttle was still at idle and attempted to recover the aircraft. Unfortunately, there was insufficient time or altitude to allow the engine to spool the rotor system back to 100 percent and arrest the descent.

What Should Have Happened?

According to the MTF manual for the OH-58D, Technical Manual 1-1520-248-MTF, the pilot should have performed the following for an autorotation RPM check:

WARNING: If autorotation RPM cannot be maintained in the normal operating range, terminate the test flight. Select an altitude that will allow a power recovery climb to be accomplished by 500 feet above ground level (AGL).

NOTE: Ensure ENG ANTI-ICE and HTR switches are OFF. MTF mission gross weight is 4,500 pounds. Nr (rotor speed) should be stabilized at 100 percent ±2 percent at the selected baseline density altitude (DA) for your operating area. Nr will increase/decrease approximately 1 percent for every 1,000-foot increase/decrease in DA and/or 100-pound increase/decrease in gross weight.

(1) While maintaining 55 ±5 knots indicated airspeed (KIAS) and aircraft in trim, lower collective to the full down position when a safe touchdown area can be reached.

(2) RPM: Confirm within limits.

(3) Throttle: Reduce to idle; confirm clutch disengagement and that engine gas generator speed (Ng) is stabilized at 63 to 65 percent. Check mast torque/engine torque are at or near zero percent.

(4) Aircraft: Check pedals for sufficient right pedal remaining and cyclic for normal position; note any marked increase or decrease in vibrations and/or unusual noises.

(5) Nr: Record with aircraft stabilized at 55 ±5 KIAS and in trim.

(6) Power recovery: Perform. Climb will be accomplished by 500 feet AGL. During power application, confirm clutch engagement. Maintain airspeed above 50 KIAS on climbout.

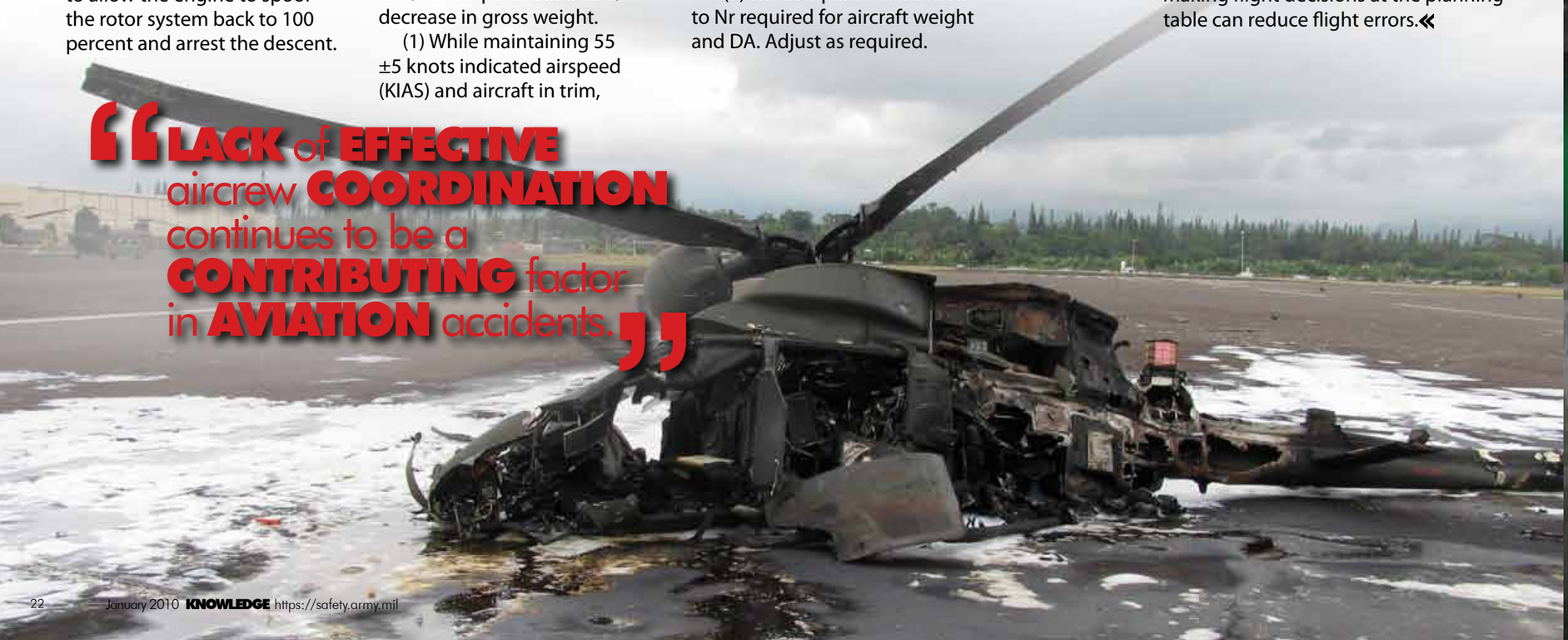
(7) Nr: Compare recorded Nr to Nr required for aircraft weight and DA. Adjust as required.

Lessons Learned

There are lessons learned from this accident scenario. First, selecting the right crew mix is extremely important in accomplishing the mission safely. Leaders must have oversight of the flight schedule and risk assessment matrix to ensure the risk is, in fact, low and includes the proper crew mix to alleviate overconfidence. Risk assessments are tools to help leadership make smart, informed decisions.

The second lesson learned is twofold: a breakdown in crew coordination and ineffective crew briefs. Lack of effective aircrew coordination continues to be a contributing factor in aviation accidents. Aircrew coordination discipline begins with the entire crew acting as a team in mission planning, execution and after-action reviews.

During crew briefs, it is essential to discuss the duties and responsibilities of all aircrew members beforehand, including alternate plans/actions should unexpected circumstances occur. Making flight decisions at the planning table can reduce flight errors.



"LACK of EFFECTIVE aircrew COORDINATION continues to be a CONTRIBUTING factor in AVIATION accidents."

SLOW CONNECTION?
LIGHTEN UP!

U.S. ARMY COMBAT READINESS/SAFETY CENTER

https://safety.army.mil/lite

The Safety Center's home page is now available in a lite capacity to allow forward-deployed Soldiers with limited Internet connectivity access to the risk mitigation tools and resources they need.

RICHARD FENNER
43rd Sustainment Brigade
Fort Carson, Colo.

Get to Know Your Manuals

Technical manuals (TMs) are designed to ensure Soldiers and civilian personnel follow the proper procedures and heed safety warnings when operating equipment. Furthermore, Army Regulation (AR) 385-10 and the unit safety program provide additional guidance on procedures units should adhere to when conducting assigned missions or tasks. Unfortunately, personnel sometimes fail to follow this guidance and are seriously injured or killed.

Units are mandated to have the appropriate TMs on hand for each piece of equipment within their respective unit and for each mission. Sometimes, however, personnel view a task as so routine that they choose to do it from memory rather than use the TM. These folks might even question why we use TMs in the first place. Well, the answer to that question is simple: it's because you can't memorize all the step-by-step procedures and safety warnings in them. For the Soldier mentioned in the following accident sequence, reading the TM would have saved him a world of pain.

> "**SOLDIERS** also must be **PROPERLY** trained and **READ** the equipment's **TM** before **STARTING** any **TASK** or mission, no matter how **ROUTINE** or **SMALL** it may **SEEM.**"

The Accident

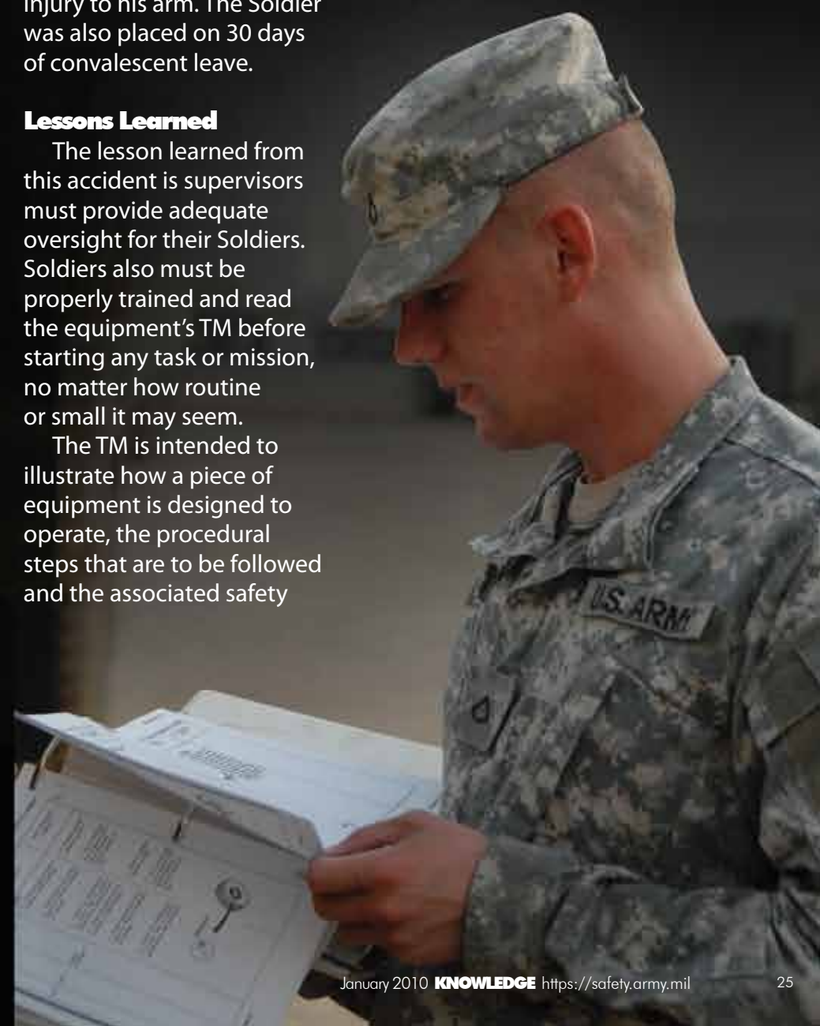
One afternoon, a group of 88M (motor transport operator) Soldiers were given a standard routine task: conduct routine maintenance on M3 Container Roll In/Out Platforms (CROPs). A Soldier who was untrained and had very little experience was removing one of the two retaining pins that held a critical piece of the equipment in place. Neither the supervisor nor the Soldier had read the TM, which revealed that this procedure involved using a lifting device such as a crane.

As the Soldier removed the last pin, the 370-pound CROP arch fell onto his right arm. Other Soldiers in the immediate area quickly rendered first aid while another Soldier summoned a noncommissioned officer to the scene. The injured Soldier was transported to a hospital, where he underwent several surgeries to fix the injury to his arm. The Soldier was also placed on 30 days of convalescent leave.

Lessons Learned

The lesson learned from this accident is supervisors must provide adequate oversight for their Soldiers. Soldiers also must be properly trained and read the equipment's TM before starting any task or mission, no matter how routine or small it may seem.

The TM is intended to illustrate how a piece of equipment is designed to operate, the procedural steps that are to be followed and the associated safety and warning hazards. Never become complacent and deviate from following the standard practical procedure of reading an equipment TM. It might just save your life, your Soldiers' lives or prevent injury to others around you.



Cheating Death

CHIEF WARRANT OFFICER 2 HERBERT W. STOVER IV
A Company, 2nd Battalion, 224th Aviation Regiment
Virginia Army National Guard
Sandston, Va.

While most Soldiers, Sailors, Marines and Airmen concentrate on the insurgent enemy in Iraq, Army aviation faces a unique enemy not associated with any political faction. That foe is deteriorating weather conditions. In the following case, encountering instrument meteorological conditions inadvertently endangered the lives of all onboard four aircraft.

As with every mission, we ran through our checklists, paying particular attention to the weather. We requested current and forecast weather conditions from several different agencies. While in Iraq, we noticed most weather reports were skewed or, as the pilots sensed, deceptive.

Our minimum requirements for night flying were a 1,000-foot ceiling and three statute miles visibility. Every night that we checked the weather, the current condition reports and forecasts were inaccurate. Weather professionals weren't always accurate at home station either. In fact, they were wrong a lot too. However, in Iraq, we wondered if there was command pressure to not report below the legal limits, forcing aircrews to launch and fly the missions.

This particular time, we checked weather and, you guessed it, the current conditions and forecasts all said we would experience visibility no less than three miles — right at our minimum to fly — through expected time of arrival (ETA) plus one hour. Our instincts and the cloudy skies we'd seen on our way in to work told us to consult the satellite imagery on the Internet to see what was brewing in the area. We saw large swirls of thick clouds moving our way, but the forecasts and current conditions issued by the weather agencies cited nothing but clear weather for the night … at least "clear" as defined by the three-mile visibility requirement extending through our ETA by at least an hour.

At the preflight briefing, the briefing officer started with, "This is a lie, but I'll read it to you anyway," and then read the official weather forecast. We requested a more detailed forecast, specifically asking about the activity we were seeing on the satellite. Again, we were told weather was not going to be a factor during our flight period. We reviewed our flight route and, to mitigate our perceived risk, planned weather checks at specific points during the flight. Then, we took off on the mission.

The first leg left us with no doubt that the weather was acceptable to make the next leg of the trip. We continued heading east into Baghdad, flying away from our suspected foul weather coming in from the southeast. As we continued the mission, we began to see lightning flashes through our night vision goggles (NVG). While they were not visible to the naked eye, they were close enough that we requested weather updates over the radio before our planned weather checkpoints farther to the east.

The controlling agency over Baghdad gave a legal visibility report and made no mention of lightning or impending storms. "Let's hurry up because something is brewing and these bastards aren't admitting it," the pilot in command (PC) called over the radio to the other aircraft as we made our cargo drop and pickup in Baghdad.

We took off and asked the controlling agency for a weather update. Again, we were told nothing significant. The passengers had no idea what was transpiring in the cockpit or in the air around them. They trusted us to keep them safe and do the right thing; however, the system was failing.

Suddenly, lightning struck just to the east of our location. By our estimation, it was about five miles away. We called the controlling agency and reported the adverse weather we were

> "If **CREWS** don't **PERFORM** composite **RISK MANAGEMENT** and double-check **WEATHER INFORMATION** from several different **SOURCES**, then Army **AVIATION** will have more **INCIDENTS** like this."

experiencing. This was the first true weather update the system received, which was then reported to other aircraft. Knowing there were several aircraft sorties in the sky between Al Taqaddum (TQ) and Baghdad, we felt the need to correct the forecast weather reports with pilot-observed updates called PIREPS. We joked in the cockpit that our reports wouldn't be communicated to the other flight crews.

We flew west, heading back to TQ, thinking the weather was behind us to the east over Baghdad. However, our goggles suddenly picked up lightning in front of us to the west. As the pilot not on the controls, I announced the conditions and took off my NVG to see if the lightning was visible with the naked eye. It wasn't.

Halfway back to TQ, heading west, we changed controlling agencies and requested a weather update from Fallujah. The update went something like this, although I'm not 100 percent certain about the ceiling height, though it was way above our minimum of 1,000 feet:

"Winds from the south at five knots, visibility five miles with a ceiling of 20,000 feet."

The PC broke squelch and asked Fallujah, "What about any reporting of thunderstorms?"

Fallujah replied with, "Nothing has been reported within 40 nautical miles, sir."

Over the intercom, the PC asked, "Am I crazy? Doesn't that lightning look closer than 40 miles away?" Then, keying the radio to the Fallujah controller, he said, "Well, I'm not sure what your source for weather is, but it's wrong. And if you'd step outside and look, you would see there is lightning within 40 miles of here. Thanks for the update. We're on our way to TQ."

With that bitter exchange, we continued to the west thinking the worst of the weather was behind us, until we noticed the visibility dropping. TQ is only a 15-minute flight from Fallujah. Five minutes west of Fallujah, the visibility dropped to less than three miles. We began preparations for landing when the visibility dropped to almost nothing. The runway was less than four miles from our position and we couldn't see it. Each station in the aircraft announced visibility less than a half-mile.

This is when we began to sweat profusely. We went into survival mode, relying on our training and gut instincts to communicate and take actions quickly, with no time for review.

I keyed the microphone to check on the second aircraft at our six. Its crew replied they could still see us. I talked to TQ tower faster than they could talk back. Three miles out from landing, we declared ourselves en route to the airfield but then pulled a 180-degree turn for fear of other aircraft in the airspace.

"Return to Fallujah," we radioed the second aircraft. They acknowledged and followed. We called TQ tower, telling them we were outbound, heading back west, with visibility of a quarter-mile. Another aircraft came over the radio approaching TQ from the northeast, where they reported visibility as unlimited. Our response was to turn in the direction of the "unlimited" visibility. I entered a point just north of TQ into the global positioning system and called the tower for permission to change heading to the northeast, praying to break out of this mess. Permission was granted, but the visibility was no better.

Straight down was the only direction where we could see anything. We certainly had many unanswered questions: Should we land in the desert — right here, right now — even though we're outside the wire from TQ? Altitude — 200 feet. Map out. Are there towers below us? Wires? Other structures? No. Open area? Good! Put it down? No! Visibility no better, left turn, straight in.

"Tower, we're inbound." Three-tenths of a mile, no runway lights; two-tenths, a dim line; going straight down; one-tenth, a runway. Whew! OK, here we are.

"Tower, we're landing here and shutting down on taxiway Romeo."

We set the brakes and parked the aircraft. I looked at the PC and he looked at me. We both had smiles on our faces that said, "We did it, don't want to do it again and holy crap, let's get out of this thing!"

The relief was like nothing I'd ever experienced. My chest felt like a 1,000-pound brick had been lifted off it. I took the largest, deepest breaths I'd ever taken. Shutdown was quick and we started shedding our equipment quickly. We wanted out and to put our feet on solid ground, under our terms. There were three other aircraft with crews similarly elated to be on the ground. As the crews met on the taxiway, one of the more experienced pilots shook my shoulder and said, "Well, you're not a virgin anymore!"

This risk was not worth the reward. We were carrying troops mostly to get them out on rest and relaxation leave or pass. If crews don't perform composite risk management and double-check weather information from several different sources, then Army aviation will have more incidents like this. Statistically, we won the lottery that night. If we hadn't made it that night, the command would have had to write sympathy letters to our next of kin. The reward that night was we all lived for another mission.

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Wouldn't you like to prevent the loss of personnel and equipment?

Don't you want to protect your combat power?

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Michelle's Story

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

June 22, 2009, is a day that Spc. Michelle L. Waters of the Kentucky Army National Guard will never forget. As she got onto the highway to drive home, little did she know her life was about to forever change.

That Monday was Waters' "drop day" — an extra day off she got every other weekend for working nine-hour days as a full-time National Guardsman. She'd taken advantage of the long weekend to visit friends who lived in Ripley, Tenn., about five hours east of where she lived in Taylorsville, Ky. She'd gotten up about 8 a.m. after a good night's sleep and later hit the road. As she headed north, she stopped for gas and a soda. She'd driven the route countless times before with nothing extraordinary happening. She had no reason to believe that day would be any different.

But that day was about to become very different.

Wendy Freeman was headed southbound on Kentucky's Purchase Parkway, which offered two lanes in each direction divided by a grassy median. It was 2:50 p.m. when she saw Waters' car go out of control in the oncoming lanes.

"I just saw her kind of 'fall' (drift) off the right shoulder of the road and then it was like she overcorrected," Freeman said.

Waters, perhaps a bit fatigued behind the wheel, had drifted onto the right shoulder. Recognizing her mistake, she swerved hard to the left, sending her car out of control across both lanes and into the median. As the car plunged down the median's grassy side, it slammed nose-first into a concrete culvert. The violent impact sent her Honda Accord cartwheeling down the median into the oncoming fast lane, landing upright in front of Freeman. Avoiding the wreck, she stopped and ran to Waters' car to see if she could help.

"The car was totaled and she was unconscious when I got to her, but she came around quickly," Freeman said. "By the time the ambulance got there, she was coherent."

The accident scene was only a few miles from Benton, Ky., the location of the Marshall County Sheriff's Department. Deputy Dennis Lewis had been on duty less than an hour when he got the call from the dispatcher.

"It was 'toned-out' to emergency medical services (EMS) and the fire department with a 'serious overturned entrapment,' meaning that the driver was unable to get out of the vehicle under their own power," he said. "All agencies ran Signal Nine emergency traffic to her location on the Purchase Parkway."

Lewis got to the accident scene shortly after the fire department. Accident debris was scattered everywhere. He quickly went to Waters' car and looked inside. Despite the damage to the car's exterior, the driver's compartment remained relatively intact.

"She was sitting still in the driver's seat — her seat belt on — very obviously and visibly upset," Lewis said. "I don't really know that, at the time, she actually knew what had happened and what was going on. But she knew she was hurt and upset."

After EMS arrived, they faced the task of getting Waters out of the wrecked car. The driver-side door had become jammed during the crash. Lewis said, "We pried and prodded and did everything we could with the limited tools we had until, finally, we got the door to pop open."

EMS technicians carefully removed Waters from her car and placed her in an ambulance headed for Lourdes Hospital in Paducah, Ky. Although she drifted in and out of consciousness, she remembered bits and pieces of the ride.

"I vaguely remember waking up and thinking how surreal it was," she said. "It seemed like a dream — like it couldn't have been real because you don't expect things like this to happen to you. And I remember the emergency medical technician asking me for my name and for contact numbers — which I guess I provided — but I don't remember doing that. I must have passed out again and then I woke up a little bit later at the hospital."

When she arrived at the hospital at 3:43 p.m., Dr. Shiraz Patel, an orthopedic surgeon, met her and assessed her injuries. Broken glass from the driver-side window had badly cut her left shoulder. Her right elbow, Patel said, was in "horrible condition."

Waters recalled seeing Patel.

"He basically told me what had happened — that it looked like I had broken my right arm. I must have passed out again because when I woke up in the holding area, there was this little Mexican woman praying over me. I thought, 'Oh, my God, am I dying — what's going on here?'"

Patel ordered Waters be given a series of CT scans to X-ray her injuries from different angles and help him understand their extent. It wasn't a pleasant experience for her.

"I remember being X-rayed," she said. "That's really when it hit me that this is real. When they moved me from the gurney to the X-ray table, I was in an excruciating amount of pain."

Uncertain of her condition, Waters was badly shaken, according to Patel.

"She was scared — she was very scared that she was going to lose her

arm," he said. He calmed her by telling her, "Everything is going to be fine. We're going to take you to the operating room and get you comfortable real fast."

Patel knew she would need surgery within 72 hours. However, he first had to stabilize her arm and reduce the swelling that could block the blood flow to her forearm or damage the nerves to her hand. He accomplished that by splinting her arm to keep it straight and placing ice on the injury to control the swelling. On Waters' third day in the hospital, Patel decided to operate.

Waters' right elbow was shattered. Both the inner and outer condyles (the bony proturbances you can feel on the inside and outside of your elbow) were broken, leaving nothing for the bones of her forearm to move against. Left unrepaired, her right arm would be useless. Ultimately, through the use of steel plates, pins and screws, Patel was able to reconstruct her elbow well enough for her to regain about a 30-degree range of movement in her right arm when she left the hospital. In the three months since her surgery, that has improved to 80 degrees. Patel's goal is for her to improve to as much as 130 degrees — just 10 degrees short of the full range of motion. Physical therapy is helping her regain flexibility in her elbow.

Waters' dramatic accident would have had a different ending had she not been wearing a seat belt, Patel said. "She wouldn't have been here (survived to make it to the hospital) or, worse, she would have been paralyzed or in a coma," he said.

And the doctor knew whereof he spoke. Starting his career in 1993 working a trauma unit in St. Louis, he saw people die who, had they worn seat belts, would have lived to make it to the operating table. Five years later, when seat belts became mandatory and air bags had been added to supplement seat belts, he saw a huge change. Patients were coming in with new injuries the doctors hadn't seen before — things like crushed ankles from floorboards coming up or dashboard-related injuries from where they pushed back onto drivers. Those types of injuries had always been there. The difference was that accident victims who previously ended up on morgue slabs were, instead, ending up on operating tables.

Waters is grateful she survived the accident. Two days after her crash, her grandmother died in the hospital. Had it not been for her seat belt, her father — Fort Knox Garrison Command Sgt. Maj. Charles Waters — would have been attending two funerals that week — one for his mother and another for his daughter. It's a grief he described as "unimaginable."

"You never know — tomorrow is not guaranteed," Waters said. "The decisions you make in your life, they don't just affect you — they affect your Family, friends and colleagues at work."

As Waters considered what might have happened that day, tears flowed from her eyes.

"It kills me to think I could have put my Family through a double funeral," she said. "I'll never take them for granted. The fact something like this happened shows you just how fragile life is."

Being a Father, NCO and Leader

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

Command Sgt. Maj. Charles P. Waters is Army through and through. A tough, career Soldier with 30 years of service, he has served in armor and cavalry units. He saw combat during Desert Shield/Desert Storm and Operation Iraqi Freedom. During the past three years, he has served at Fort Knox, Ky., as the garrison command sergeant major.

June 2009 was a tough month for Waters and his Family. His mother had undergone open-heart surgery in a hospital in South Carolina and then suffered deadly complications. He'd just left the hospital one afternoon when his wife's cell phone rang. An emergency medical technician (EMT) in an ambulance hundreds of miles away was calling with information that would drive the Family deeper into crisis.

Waters said, "The person on the other side of the phone asked my wife, 'Are you the parents of Michelle Waters? My wife said, 'Yes, what's wrong?' and she said, 'Your daughter was involved in an accident.' At that time, my wife quickly handed the phone over to me. I spoke to the lady and she gave me what information she could at the time."

The news put him in an emotional bind. At that moment, his mother was struggling for life in the hospital. At the same time, his daughter was being rushed to Lourdes Hospital in Paducah, Ky., for emergency surgery after her car cartwheeled multiple times. His heart was torn in both directions.

"There is always the fear of the unknown," he said. Although the EMT explained his daughter had been stabilized, there was no way of determining the extent of her injuries at that moment.

"I was concerned about that and I was torn between trying to figure out how we were going to divide forces to deal with both critical issues at the same time," Waters said. "It made it difficult on the Family, to say the least."

Waters' mother passed away two days after his daughter's accident. Michelle was released from the hospital about the same time as her parents came back from South Carolina. In no condition to drive or take care of herself, a friend drove her back from Paducah to her parents' house in Elizabethtown, Ky. Her father remembered how he felt when he saw his badly injured daughter.

"I was relieved by the fact that she was still alive," he said, thankful Michelle had used her seat belts, which saved her life. "I was also told the preliminary report said there's only two ways folks normally come from an accident like that — they're either paralyzed for life or they're dead. I felt blessed that she was still with us."

Waters knows what it means when someone doesn't survive. While stationed at Fort Polk, La., he had a Soldier who was not so fortunate. The Soldier fell asleep, ran off the road, struck a tree and was killed.

"The report stated he was not belted in and he was thrown from the vehicle," Waters said.

While he may take his beret off when he walks through his front door at night, Waters never takes off his "safety" hat. He knows his responsibility for the safety

of his Soldiers doesn't end at the end of duty hours. He knows that what happens off duty affects what happens on duty.

He said, "You look at the statistics that are briefed to the chain of command that come down through the Army system. You see if there is any way you can reach out to the younger generation and, in some cases, the older generation, through the safety briefs in such a manner that it will relate to them."

Sometimes that means being a bit creative, he said. While at Fort Polk, he would scan the police blotter for "teaching" opportunities. He'd make the stories generic and interesting by pulling out the names and injecting a bit of humor. He'd pull the Soldiers together on Mondays during command maintenance to pass along a few jewels.

"We used to call them 'CNN Downloads,'" he said. "The Soldiers actually liked it from a perspective that only 'certain' Soldiers do crazy things that just make you scratch your head. I would try to make it somewhat entertaining, but the point was always going back to what not to do."

And it wasn't just his Soldiers who got the treatment — he shared them with his Family.

"Safety is a choice that you make in life. It's a lifestyle that you live, and you have to view it from that perspective," he said. "You have to address this from an issue that really hits close to the heart — the fact that if you really like life and enjoy living, you have to protect yourself. You could be the best driver in the world and still not be around tomorrow if a bad driver hits you."

That point hit home with Michelle as she grew up. Buckling up when she got inside a vehicle became second nature. But what if it hadn't been? What if she hadn't buckled up that June morning?

"I'm not sure how I would have handled that," Waters said. "… I can't possibly imagine how tough it would be going from Mom's funeral to Michelle's all in one week. Michelle is my first-born. She has so much potential to just to go out and grab life and enjoy it. It means the world to me and her mother that we still have her in our life. I believe that those in our world would be a lot less happy if she were not still with us."

MAKING THE MESSAGE STICK

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

Getting Soldiers to buy into the idea of managing the risks in their life isn't always easy. Because many see themselves as young and invincible, they don't understand the importance of making "safe" decisions. According to Fort Knox Garrison Command Sgt. Maj. Charles P. Waters, this creates another opportunity for noncommissioned officers (NCOs) to exercise leadership.

"I think we need to be aggressive and attack what we know to be right when it comes to safety and driving POVs," he said. "We cannot allow Soldiers to violate standards because there is a cost. If our most precious resource is the Soldier, then they deserve our greatest efforts to protect them."

But getting Soldiers to understand that can be tough, Waters said.

"All of these things can fall on deaf ears if you're not careful," he said. "You've got to remember your audience and ensure that when you engage them the message is being received. Sometimes that is easier said than done with the generation that we have today. I like inputting humor into it. If you have a standard safety brief, sometimes you've got to change it up a little bit — spice it up so that they still get the point when they walk away."

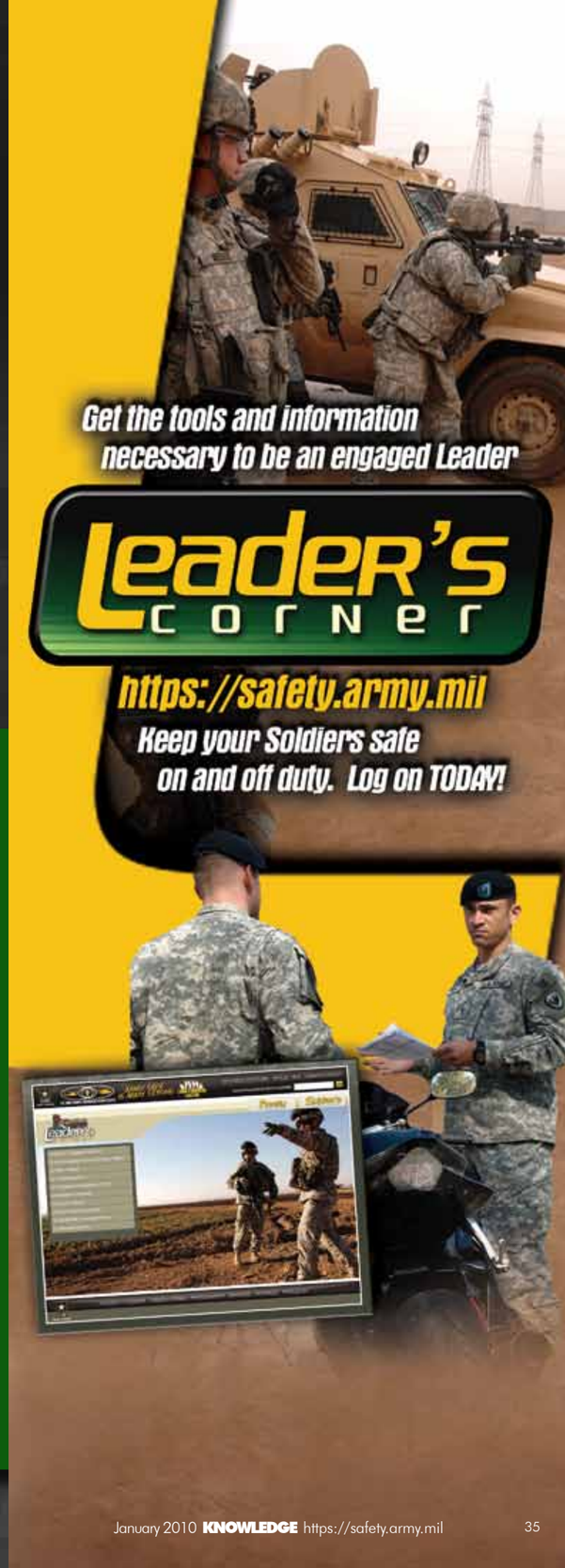
Beyond the humor, Leaders are responsible to ensure their Soldiers meet the standards.

"I think the most important thing we, as Leaders, need to do is constantly watch for violations with our Soldiers when we see them in day-to-day operations," he said. "We have to hold them accountable and make sure if we see violations, we correct them on the spot. Regardless how busy we are, we must take the time to make on-the-spot corrections and hold them accountable."

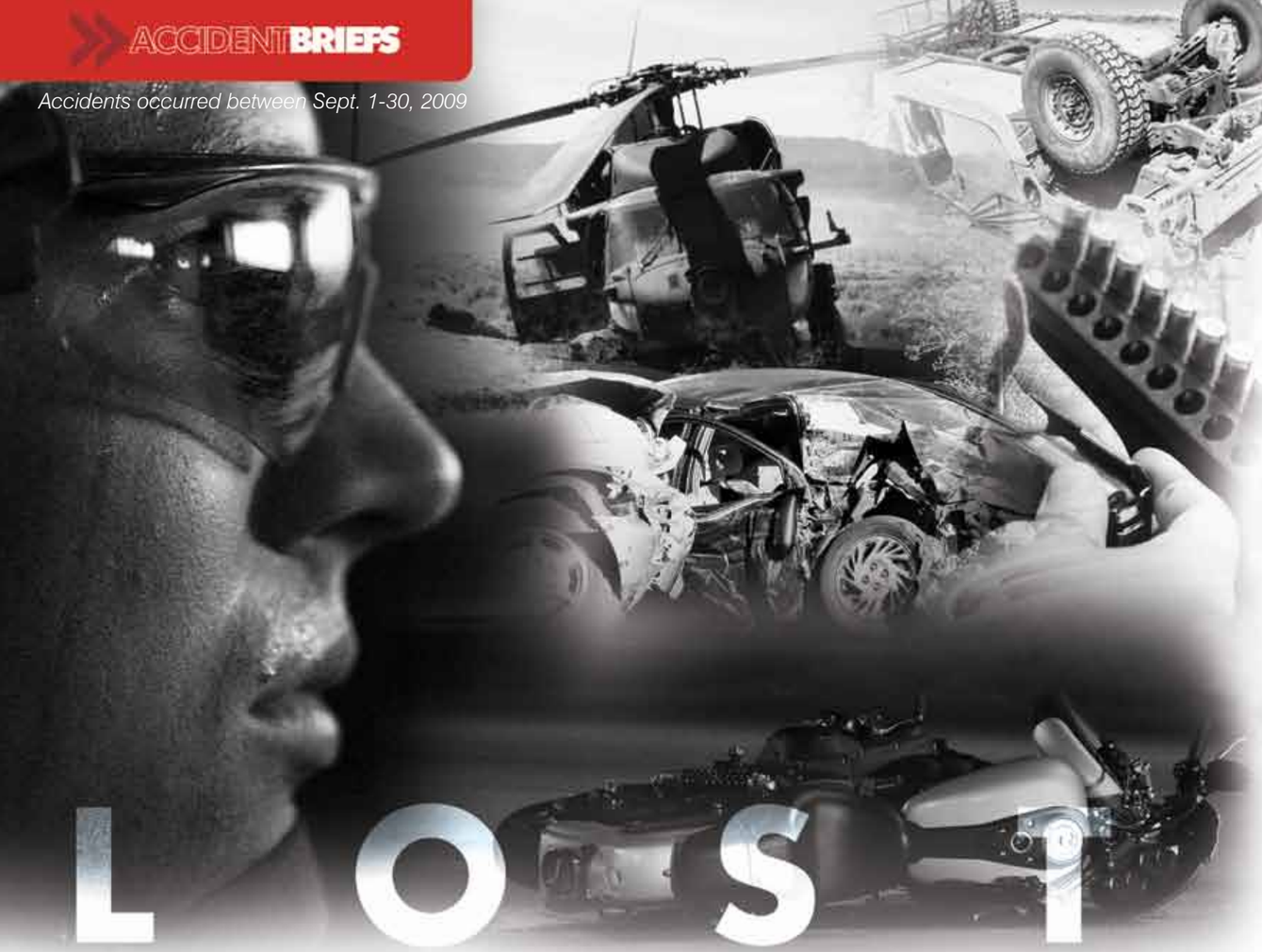
Holding Soldiers accountable helps them grasp the serious consequences of their decisions — consequences they might not recognize at the time. Waters explained that when Soldiers realize it only takes a fraction of a second to lose control of their vehicle and die in an accident, they take life more seriously.

NCOs who wear their stripes with authority and uphold safety standards can make a real difference, Waters said.

"It's by our actions and aggressiveness that we can impact the world in which we live and those we come into contact with on a daily basis," he said. "That's true whether they be Soldiers, civilians who work for us or our own Families."



Accidents occurred between Sept. 1-30, 2009



AVIATION

AH-64D

CLASS A

- The aircraft contacted the ground during a descending turn and sustained severe damage.

CLASS C

- The aircraft experienced a No. 2 generator fire while the crew was repositioning from the forward arming and refueling point to parking.

OH-58A

CLASS B

- The pilot was returning to the airfield after refueling when he reported engine surges and uncommanded yaws. The pilot performed an autorotation, resulting in a hard landing.

OH-58D(I)

CLASS A

- Fire initiated onboard the aircraft during run-up for flight. The crew was able to egress without injury.

OH-58D(R)

CLASS B

- The aircraft's right skid tube contacted terrain during close combat attack operations. The air bags deployed; however, the crew maintained level flight and returned to the forward operating base.

TH-67A

CLASS B

- The aircraft main rotor system contacted terrain during a slope landing iteration.

UH-60A

CLASS A

- The aircraft crashed as the crew was returning to home base in deteriorating weather.

CLASS C

- The aircraft main rotor system contacted trees during confined area operations. All four blades sustained damage.

UAS

RQ-5A

CLASS C

- The nose landing gear of the unmanned aircraft contacted the arresting gear drum on the runway as the crew was conducting an abort-takeoff procedure, causing the landing gear to separate from the fuselage.

GROUND

ACV

CLASS A

- Two Soldiers died when a bridge collapsed as they drove their M1126 Stryker across it during a five-vehicle convoy movement. The Stryker fell about 50 feet and overturned in a dry riverbed. Five other Soldiers aboard the vehicle were injured and evacuated to a medical center.

AMV

CLASS A

- Two Soldiers suffered fatal injuries when their M1151 HMMWV overturned after striking a dirt mound in the roadway.
- A Soldier was killed when the M1151 HMMWV he was operating overturned.
- A Soldier was fatally injured when he was struck by a government vehicle driven by another Soldier.

Personnel Injury

CLASS A

- A Soldier suffered fatal injuries when the loaded rifle he was handling fired and struck him in the eye. At the time of the accident, the Soldier was attempting to spin the rifle.

DRIVING

POV

CLASS A

- A Soldier was negotiating a curve in his privately owned vehicle (POV) when an oncoming vehicle crossed the centerline and hit him head-on. The Soldier's vehicle overturned and he suffered fatal injuries. The Soldier was wearing his seat belt.
- A Soldier was driving with two other Soldiers as passengers when he drifted into the oncoming lanes of traffic. A tractor-trailer in the oncoming lanes swerved onto the right shoulder, but was unable to avoid hitting the Soldier's POV. The Soldier was evacuated to a local medical center, where he later died during surgery. Both passengers survived with non-life-threatening injuries. All three Soldiers were wearing their seat belts.
- A Soldier was driving her POV when she drifted off the right side of the road, overcorrected and caused the vehicle to overturn and enter the median. The driver, who was not wearing her seat belt, was ejected. She was taken to a medical facility for treatment, but died two days later after being removed from life support.

ARMY AVIATION LOSSES

Fiscal 2010

as of Dec. 3, 2009

	Class A/Fatalities
ATTACK	0/0
RECON	1/2
UTILITY	2/1
CARGO	1/0
TRAINING	0/0
FIXED-WING	1/0
UAS	1/0
TOTAL	6/3

ARMY GROUND LOSSES

Fiscal 2010

as of Dec. 3, 2009

	Class A/Fatalities
AMV	3/2
ACV	2/2
PERSONNEL INJURY includes weapons-handling accidents	6/7
FIRE/ EXPLOSIVE	0/0
PROPERTY DAMAGE	0/0
TOTAL	11/11

- A Soldier was driving his POV en route to his duty station when an oncoming vehicle crossed the centerline and struck him head-on, killing him on impact.
- A Soldier lost control of his POV, slid passenger-side first into an intersection and collided with a van. The Soldier was pronounced dead at the scene.
- A Soldier in emergency leave status was located by a state trooper at the scene of a single-vehicle crash. The Soldier had driven off the road and struck a tree, resulting in fatal injuries.
- A Soldier was on emergency leave when his POV left the road on an S-curve, crossed the median and oncoming lanes and struck a building. The Soldier was taken to a medical center, where he died three days later.
- A Soldier was driving his POV with another Soldier as a passenger when he lost control, left the road and struck a tree. The Soldier-passenger was taken to a medical center, where he was pronounced dead.
- A Soldier was driving his POV while on post-deployment block leave when he went through a T-intersection and descended 30 feet into a water-filled ravine. The Soldier died at the scene.

POM

CLASS A

- A Soldier was riding his newly purchased privately owned motorcycle (POM) when he collided head-on with an approaching sport utility vehicle. The Soldier, who was reportedly wearing all required personal protective equipment, was pronounced dead at the scene.
- A Soldier was riding his POM and leading two other riders when he struck the rear of a vehicle stopped in the left lane to make a left-hand turn. The Soldier, who was wearing his helmet, suffered fatal injuries.
- A Soldier riding with a group lost control in a curve, entered the shoulder and struck a guardrail, suffering fatal injuries. The Soldier was wearing his helmet.

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.

POV DRIVING LOSSES Fiscal 2010

as of Dec. 3, 2009

	Class A/Fatalities
CAR	8/9
SUV/JEEP	2/2
TRUCK	2/2
MOTORCYCLE	4/4
PEDESTRIAN	3/3
OTHER*	1/1

*Includes: vans and ATVs

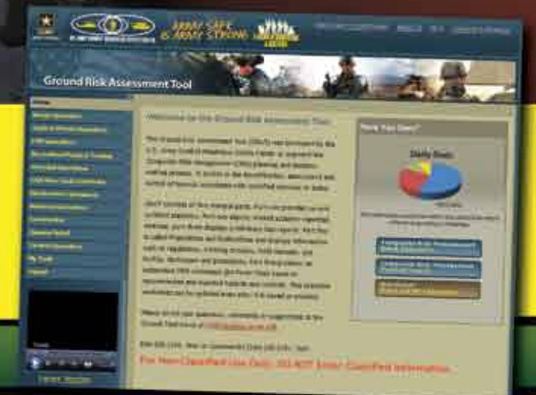
21 TOTAL DEATHS

Fiscal 2009: 21 3 year average: 18

READY FOR THE RISK?

The Ground Risk Assessment Tool is designed to aid in mitigating risk by reinforcing the five-step composite risk management process. Using this tool in concert with military decision-making processes will help Army Leaders achieve success in their missions and make safety an integral part of their planning. Visit the USACR/Safety Center Web site today and try it out for yourself.

- MAKE SOUND RISK DECISIONS
- REDUCE ACCIDENTAL LOSS
- INCREASE COMBAT POWER



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A BAND OF BROTHERS & SISTERS

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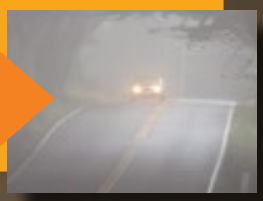
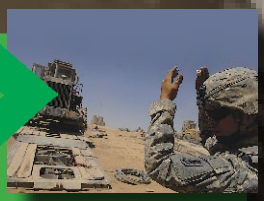


18 GUIDING RIGHT



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U.S. ARMY COMBAT READINESS/SAFETY CENTER

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Mission statement: The United States Army Combat Readiness/Safety Center (USACR/Safety Center) supports our Army by collecting, analyzing and communicating 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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The military has a language all its own, and in the Army, we have our own distinct dialect. Over the past few years, we've adopted several new catchphrases to describe changes in the way we do business. Among the most popular of these expressions is "transformation" and "culture change," concepts we've applied to Army safety as well. Since these terms may mean different things to different people, I'd like to share with you my ideas regarding "safety culture."

ANING TO AFETY ULTURE

> "EVEN the greatest safety PROGRAM WON'T be effective if it isn't put into PRACTICE every day with buy-in from SOLDIERS at all LEVELS."

Within our Army, there is a unique culture built upon common core values and shared historical traditions that transcend branch or MOS. But when you look at units individually, other distinct cultures become apparent. For example, infantry units have a culture different from armor units, and within aviation, unit culture can vary with aircraft type. These diverse cultures are a good thing; camaraderie is strengthened through shared experiences and mutual understanding.

The great thing about safety is it's relevant in any culture. Unfortunately, however, safety has often been treated as a regulatory requirement rather than a flexible process adapted to a unit's unique needs. Making safety a fundamental value that's part of every culture will require changing the way we think about it, moving from a compliance-based mindset to one focused on creativity and active Soldier participation.

How do we go about making this transformation? Leaders can start by identifying the strengths, limitations and resources of their individual units. The next step is to take our Army's existing safety programs, messaging and tools and tailor them to the unit's culture. We've learned there is no one-size-fits-all "cure" for the safety issues we see most often, things like seat belt use and speed in privately owned vehicles. Instead, our programs must be driven by conditions within the unit itself. Factors such as average Soldier age, unit OPTEMPO, deployment schedules and various other issues must be taken into account as Leaders develop safety programs targeted to their unit's needs.

Even the greatest safety program won't be effective if it isn't put into practice every day with buy-in from Soldiers at all levels. Change has to come from the top and bottom simultaneously, with both Leaders and subordinates participating in the process. The end goal is to have a culture where every individual is an active owner of their personal safety and the composite risk management process. This step is perhaps the most difficult, but it also pays the greatest rewards in protecting our vast Band of Brothers and Sisters.

The transformation to a culture that embraces safety doesn't stop at the unit or Soldier level — our Families should be involved in the process as well. Families are the source of strength for most of our Soldiers, and their inclusion in the safety culture is critical to our success. Soldiers who are continuously exposed to cultures that embrace safety, both at home and at work, will be well equipped to face the challenges unique to Army life.

Eventually, culture becomes part of who you are, and that's what we want to happen with safety. We want our Soldiers to carry safety with them wherever they are and whatever they're doing, be it on duty in theater or off duty at home. Ultimately, the key to culture change is engagement across all levels of command, among Soldiers and within the intimate bonds of Family.

The USACR/Safety Center team stands ready to help you build safety into your unit's culture, and I ask you to share your thoughts on the subject with us. Our Army is the finest in the world due to its diversity in people and missions, but we can all take pride in the common cause of protecting our Band of Brothers and Sisters. Thank you for all you do every day to keep our Soldiers, Families and Civilians safe.

Brigadier General, USA
Director of Army Safety

Overcoming the Complexities of War

COL. MARK C. PATTERSON
U.S. Army Space and Missile Defense Command
Colorado Springs, Colo.

CAPT. SAM JIN
1st Battalion, 212th Aviation Regiment
U.S. Army Aviation Center of Excellence
Fort Rucker, Ala.

Editor's note: Col. Mark C. Patterson and Capt. Sam Jin wrote this article while assigned to 2nd Battalion, 10th Aviation Regiment, Fort Drum, N.Y. Patterson was the commander of Task Force Knighthawk and Jin was the task force battle captain.

Many of you are either in or on your way to a desert environment and the many different complexities associated with living and fighting in it. Throughout history, Greek, French, British and American forces have learned and relearned the problems associated with desert operations. Task Force (TF) Knighthawk experienced various issues in our deployment to Afghanistan; however, we captured many lessons learned in after-action reports. We hope you can benefit from these lessons and not learn them the hard way.

TF Knighthawk was composed of a diverse group of aviators and support personnel that had never before worked together. Our attack troop consisted of Army National Guard pilots from Tennessee and Idaho, our heavy lift company consisted of Army Reserve pilots from four different states and our active-duty Black Hawk company had never flown with either of the aforementioned airframes before arriving in Kandahar. Additionally, we controlled the U.S. Air Force HH-60Gs and Australian CH-47Ds.

To add to the complexity, the ground forces we supported included U.S. Special Operations Forces and conventional forces, as well as French, Canadian, British, Dutch, Danish, Czechoslovakian and Afghan Soldiers. Each ground force had different tactics, techniques and procedures, along with different capabilities and understandings of how to properly use aviation assets. These obstacles complicated a theater of operation already riddled with tactical and accidental risks.

In addition to having such a diverse group of people and personalities, we also had dissimilar training standards and levels of proficiency. Nonetheless, in two weeks we were brought together to continue the fight on Overseas Contingency Operations in Afghanistan.

Our cornerstone for success in deploying to Afghanistan was ensuring composite risk management (CRM) was incorporated into everything we did. Through leadership and an understanding of everyone's abilities, as well as the enemy's, we were able to mitigate both tactical and accidental risks to the lowest level.

One of the most effective measures taken was keeping low-risk approval authority at the TF commander level for the first 90 days. This forced interaction between the risk approval authority and the recently formed pilots. It allowed the TF commander to meet the pilots, convey his guidance directly and ensure his intent for mission success would be carried out deliberately, effectively and efficiently.

The Enemy

Beyond the better-known risks, such as rocket-propelled grenades (RPGs) and improvised explosive devices, the most dangerous tactical risk was the enemy himself. We were in a constant race with the enemy to counter their tactics, and one way to stay ahead was to conduct "red teaming." Defined loosely, red teaming is the practice of viewing a problem from an adversary or competitor's perspective. The goal of most red teams is to enhance decision making, either by specifying the adversary's preferences and strategies or by merely acting as a devil's advocate. Simply put, we could not let the Taliban and al Qaeda know our next move. For that reason, we had to remain unpredictable. We changed our tactics frequently so they couldn't get familiar with our strategy plans.

We mitigated our vulnerability to enemy fire by enforcing the basics as standard procedure. Aircraft were not allowed to hover unless preparing to land. We flew at 60 knots indicated airspeed or faster to reduce being targeted with RPGs and small-arms fire on the ground (buildings, rooftops and gas stations). We altered our altitudes, routes and flight paths, used different tactics and changed aircraft packages whenever we could. Aviators used terrain and environmental factors to enhance their cover. To mitigate risks further, we did not follow linear features, such as roads or riverbeds, and we avoided flying over towns and villages.

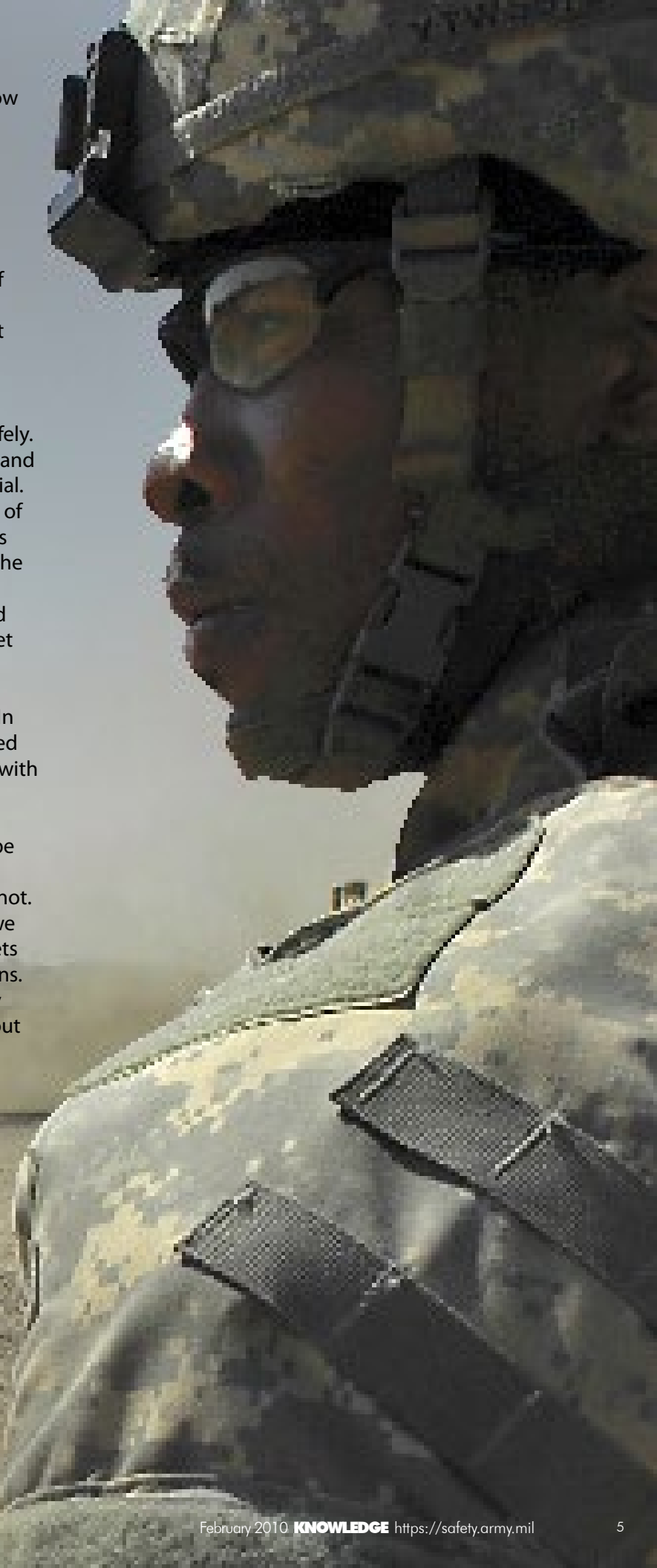
Combined Arms

An important part of proper preparation lies with the staff. The effort put forth by our staff ensured aircrews were properly equipped to conduct the mission safely. Teamwork between air and ground assets was crucial. The mission, regardless of our day-to-day role, was to pursue and destroy the enemy. The key was to analyze the mission and determine the best asset to execute the mission, whether it was aircraft, ground forces or both. In this manner, we matched the proper capabilities with mission requirements.

The integration of combined arms could be the difference from an aircraft going down or not. If we do our job right, we let combined arms assets take out enemy positions. If we can kill the enemy using joint assets without exposing ourselves, do it. The CH-47 is a big target, and the enemy knows the information operations effects of shooting one down.

Maintenance

We experienced maintenance challenges resulting from operations in desert environments. Units must use a proactive approach to maintenance to stay ahead of aircraft



component failures inherent of operating in an arid region. They should also develop or revise an operational checklist to assist with aircraft prevention maintenance or maintenance procedures when operating in the desert. Additionally, we used "jumps" forward arming and refueling points (FARPs) and "Fat cow" CH-47s equipped to help refuel other aircraft to change our capabilities, extend our force projection and demonstrate to the air mission commander (AMC) that we were not limited to the well-established FARPs.

Communications

We kept aircrews informed by producing and publishing daily intelligence summaries and operational summaries for all enemy and friendly activities. We also briefed the information at quick-reaction forces briefs, all mission air briefs and at twice-daily shift change briefs to ensure information reached all Soldiers within the TF.

Aircrew briefs were crucial in aligning the assets into one scheme of maneuver. The air scheme of maneuver, as well as the ground scheme of maneuver, was briefed using common graphics. This allowed us not only to understand the mission better, but it improved our situational awareness and helped us avoid airspace conflicts between aircraft. These measures reduced the danger of fratricide and increased our ability to engage the enemy.

We ensured ground forces understood that air-ground integration was essential to victory on the battlefield. This wasn't limited to attack assets. We gave information, requested read-backs and then confirmed collective understanding. Without consistent feedback to and from the ground forces, the mission certainly would've been doomed.

Aircrews advised the ground forces of slope impacts and hazards. We also informed them of the proper procedures to ingress and egress the aircraft, in which coalition forces were not familiar. We instructed them to stay on the ground in the prone position until after the aircraft departed. Aircrews remained vigilant and no one was hit by a main rotor blade.

The Environment

In the face of a determined enemy on the battlefield, it was the environment and its countless challenges that represented the highest threat to aircrews. High altitudes, restrictive terrain, high temperatures and lack of visual contrast tested our aircrews' ability to conduct missions on a daily basis. One-wheel and pinnacle landings were common, and just about every landing was a dust landing. I recommend that all aviation units deploying into theater order dust-reducing materials to address this problem. It is also crucial to limit vehicle traffic in and around FARPs and aviation assembly areas, as the dust tends to worsen with vehicle traffic, creating a fine powder that increases the dust signature.

In the Afghanistan theater, summer temperatures are exceedingly high. Sometimes it

reached 50 C (122 F) during late afternoon; therefore, aircraft were experiencing heavy demands for power to conduct routine flight maneuvers. Many pilots lacked experience flying fully loaded aircraft approaching the maximum gross weight allowed under those temperature conditions.

To become acquainted with power demand and limitations, the battalion instructor pilots should develop a training program to introduce all pilots to fly in heavy gross weight conditions that often require the maximum torque available to sustain normal flight. Leaders and aircrews must continue to stress environmental awareness training, crew coordination and dust abatement.

Training

Training was another key to risk mitigation. During periods of good illumination, we conducted operations under night vision goggles to build proficiency among aircrew members. We forced the ground force commander to plan resupply and other missions at night to build proficiency for both aircrew members and ground units. To ensure proper understanding of employing our attack assets, we conducted close combat attack training with all coalition forces. Pilots practiced pinnacle and dust landings to hone their skills and make those maneuvers second nature. To be successful, we maximized the duty day while pushing controlled training events to build our benchmark. Remember, we were in a combat zone and, oftentimes, we had to conduct training at the end of a mission. Don't count on getting dedicated training days.

The TF commander trained the AMC and mission briefers. Clearly, they should be taught "how to think" in a combat zone. A simple "if and then" methodology is a technique: *If* we know the enemy *and* we understand the friendly unit's disposition, *then* we can make a deliberate decision. While it is important to allow the AMC some tactical initiative, in general it is important to stick to the mission. For example, *if* the mission was to conduct a resupply *and* the flight became engaged en route, suppress *then* bypass. Don't get into a sustained firefight.

Extensive scenario-based rules of engagement (ROE) classes also improved responsiveness and, ultimately, saved lives. Our crewmembers thoroughly understood the ROE. If attacked, door gunners, in accordance with the ROE, engaged. ROE training was continuous and incorporated lessons learned. In one instance, we had a crewmember not wanting to return fire because civilians were nearby. During debrief, however, the crew noted an open area across from the enemy and civilians. We trained our crewmembers to lay down suppressive fire; in this case, in the open field. In most instances, that stops the incoming fire.

Rehearsal

Finally, a thorough rehearsal helped to bring all the training and preparation together. We walked through the mission using the TOPSCENE tactical terrain visualization system, different scale maps and discussed actions on the objective. This allowed aircrews and ground force commanders to visualize, describe and direct actions on the objective to gain and maintain contact with the enemy.

Summary

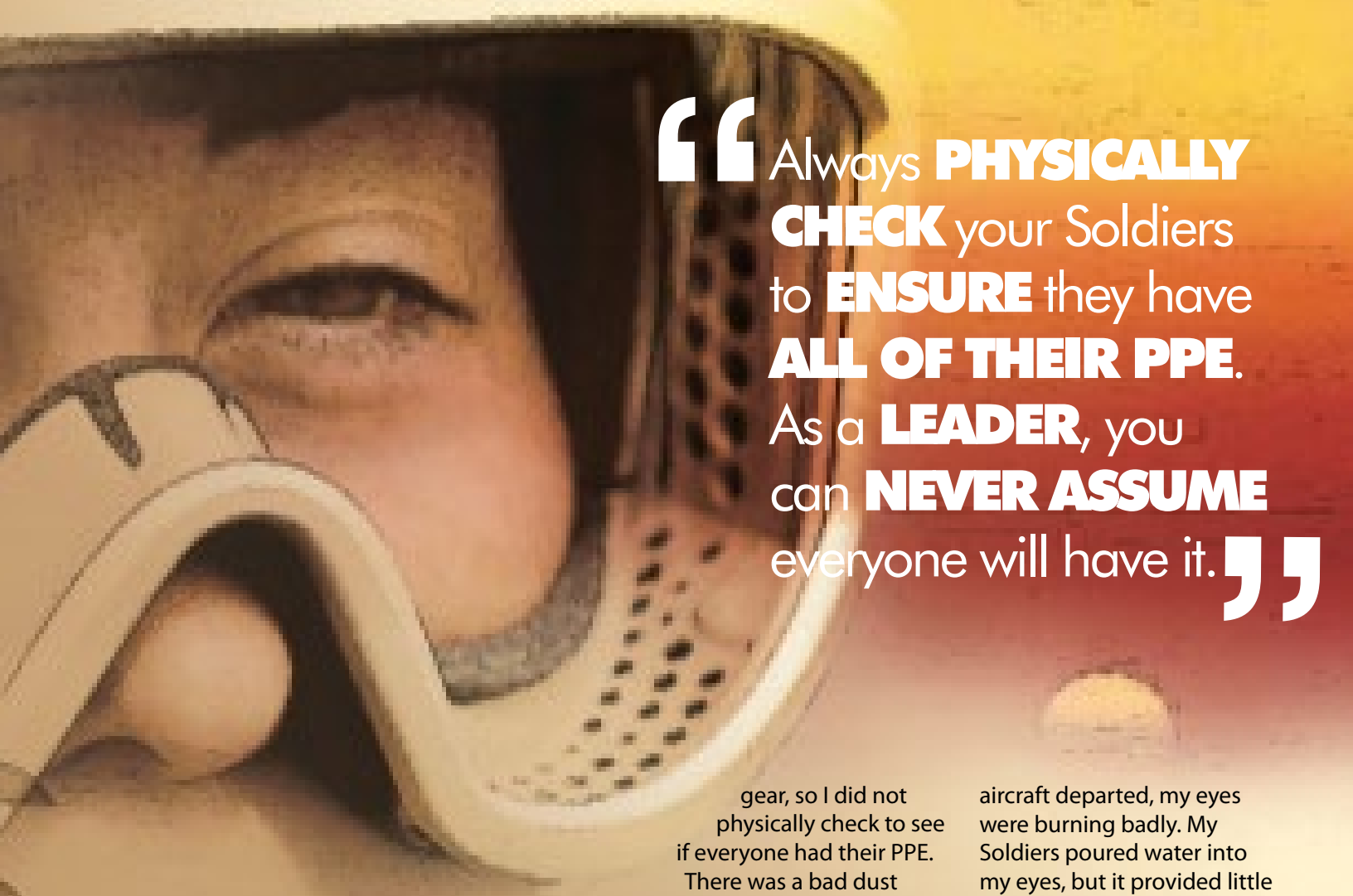
This deployment helped us understand not only our strengths and weaknesses, but also those of the enemy. Today, we continue to operate in a high-risk, high-threat environment. We must not let our guard down or become complacent. TF Knighthawk was able to overcome the complexities of war, treacherous terrain, unpredictable weather and the challenges of fighting alongside a multinational force to fight an aggressive and elusive enemy. Our commitment to using CRM allowed us to be successful in supporting the ground units in combat and combat service support missions throughout southern Afghanistan.«

> "Our **CORNERSTONE** for success **IN** deploying to **AFGHANISTAN** was ensuring **COMPOSITE** risk **MANAGEMENT** (CRM) was **INCORPORATED** into **EVERYTHING** we did."

show me the PPE

1ST SGT. DEIDRE M. PERRY
Company B, 348th Brigade Support Battalion
Hinesville, Ga.

It was a crisp night in Qalat, Afghanistan, and my crew was in the midst of a 24-hour mission. Intel information indicated it would be a quiet evening. Unfortunately, that wasn't the case.



> “Always **PHYSICALLY CHECK** your Soldiers to **ENSURE** they have **ALL OF THEIR PPE**. As a **LEADER**, you can **NEVER ASSUME** everyone will have it.”

We’d worked throughout the day refueling all types of aircraft. Even though we’d had some downtime between missions, we knew to always be ready to refuel at a moment’s notice. On this particular night, rockets were going off more than usual and everyone was nervous. Then, word came over the radio that three CH-47s needed fuel and would arrive in 15 minutes.

As my crew was preparing to head to the forward arming and refueling point (FARP) site, I asked if they all had their personal protective equipment (PPE), including goggles, hearing protection and gloves. Everybody rushed to get their equipment. I, too, was scrambling to get my gear, so I did not physically check to see if everyone had their PPE.

There was a bad dust storm raging as five of us piled into a HMMWV and drove to the FARP site. When we arrived at the fuel tankers, I saw the first CH-47 coming in. As two of my Soldiers prepared a tanker hose to fuel the aircraft, I noticed one was not wearing goggles, just prescription glasses. I tried to yell out to the Soldier, but the aircraft drowned out my voice. I then ran to the Soldier and gave him my goggles.

The dust storm continued to howl and, along with the aircraft, blow sand everywhere. I tried to protect my face by covering it with my shirt, but it didn’t help. The wind was blowing so fiercely that my eyes were full of sand.

By the time the final aircraft departed, my eyes were burning badly. My Soldiers poured water into my eyes, but it provided little relief. They rushed me back to the forward operating base and took me to the medic. By now, both of my eyes were swollen, so I was rushed to Kandahar by air and then sent to Germany for treatment.

It took me months to recover from this incident, but I came away from it with an important lesson learned: Always physically check your Soldiers to ensure they have all of their PPE. As a Leader, you can never assume everyone will have it. I’m determined to prevent a similar accident from happening to my Soldiers, so, before every mission, I make them show me their PPE. Sure, it might cost us a few extra minutes, but it might just save a Soldier’s sight.

It was Oct. 3, 2009. I'd spent the past year in the Army National Guard recruit sustainment program while attending advanced individual training and qualifying in my military occupational specialty. After months of eagerly waiting, I was finally ready to report to my unit at 5 a.m. that Saturday morning.

Out of Nowhere...

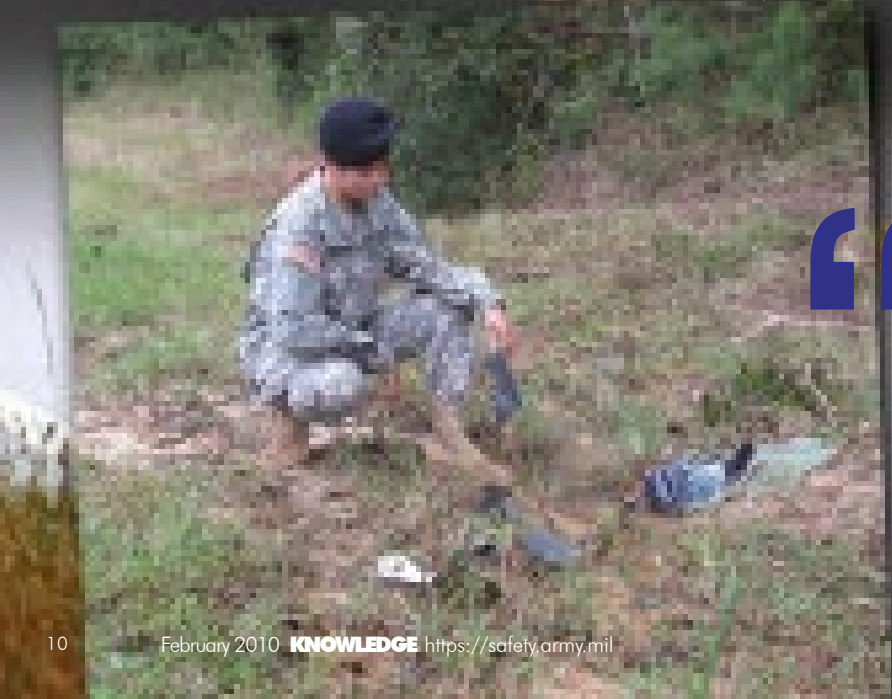
PFC. AMANDA C. MACFADDEN
Forward Support Company
1203rd Engineering Battalion
Ozark, Ala.

Excited, but a bit nervous, I awoke early enough to have my morning coffee and ensure I had my uniform squared away and had all my records. As the newest enlistee in the unit, I wanted to make a good impression on my Leaders. I glanced in the mirror one more time to ensure my beret fit properly and kissed my husband on my way out the door. It was only about a 20-minute drive to my unit, but I wanted to get there early.

The trip to my Guard unit took me along Alabama Highway 27, a portion of which is a two-lane road with many curves and hills. The sun hadn't yet risen and there was low-hanging fog shrouding the road. I normally drove 50 mph on the highway — 5 mph under the speed limit — but, because of the poor visibility, I decided to drive slower than usual.

Just as I came over a hill, out of nowhere something appeared in the road directly in my path. I quickly veered to the left, missing the object by inches. As I passed the object, I struck debris on the road before stopping on the left shoulder. I turned my head to see what I'd nearly hit and was shocked to see an overturned SUV. The back door, on which the spare tire was mounted, had inadvertently swung out and I barely missed hitting it.

With my heart pounding and my hands shaking, I switched on my hazard flashers to warn other vehicles coming up the hill.



> "It was also a **REMINDER** that a deadly surprise can **OF NOWHERE**. It showed **SAFETY** is always **BEING**

Fearing I had run over more than just debris, I took a deep breath, got out of my car and ran to the SUV to see if the occupants needed medical attention. I was sure whatever I found wouldn't be pretty. I called 911 and told the dispatcher what I had discovered and then ran up and down both sides of the road looking for victims — but didn't find any.

After getting off the phone with the 911 dispatcher, I called my unit to explain I would be late. The training sergeant asked me if I was all right and then kidded me, "Is this what I can expect from you on a regular basis? Isn't this a little extreme for trying to get out of drill?"

Reflecting back on that morning, I couldn't have been more fortunate. Had I been traveling the speed limit or faster, I could have ended up smashing into the abandoned SUV. I later found out the driver was an illegal immigrant who, upon arrest, was tested and found to have a blood alcohol concentration of 0.30 — more than 3½ times the legal limit. I'm glad I didn't meet him when he was driving.

In short, I owe the fact that I walked away safely from this accident to five main factors:

- I planned ahead and gave myself plenty of time to get where I was going.
- I adjusted for the environmental conditions and reduced my speed.
- I was alert to my surroundings and not distracted by texting or talking on the phone.
- I didn't panic. I applied my brakes gradually and maneuvered around the SUV instead of jerking the steering wheel and overcorrecting.
- Most importantly, I wore my seat belt.

This close call was pretty traumatic for me. It was also a reminder that a deadly surprise can appear out of nowhere. It showed me the best part of safety is always being prepared.«

appear **OUT**
d me the **BEST** part of
PREPARED."

CRUISIN' THROUGH FOGGY BOTTOM?

If you haven't had to deal with fog, chances are you will sometime in your life. The Florida Highway Patrol has the following tips to help you when you do:

- **Drive with your headlights on low beam. High beams will reflect off the fog and impair your visibility even more. Your lights help other drivers see your vehicle, so be sure they all work. Keep your windshield and headlights clean to reduce glare and increase visibility.**
- **Slow down before you enter a patch of fog. Be sure you can stop within the distance you can see. Fog creates the visual illusion that you're moving slowly when you may actually be speeding. Speed is a major factor in fog-related crashes.**
- **Watch out for slow-moving and parked vehicles. Listen for traffic you cannot see. Open your window a little so you can better hear.**
- **Reduce distractions in your vehicle. Turn off the radio and cell phone. Your full attention is required.**
- **Use wipers and defrosters liberally for maximum visibility. Sometimes it is difficult to determine if poor visibility is due to fog or moisture on the windshield.**
- **Use the right edge of the road or painted road markings as a guide.**
- **Be patient and avoid passing and/or changing lanes.**
- **Signal turns well in advance and brake early as you approach a stop.**
- **Do not stop on a freeway or heavily traveled road. You could become the first link in a chain-reaction accident. If you must pull off the road, signal (people tend to follow taillights when driving in fog), then carefully pull off as far as possible. After pulling off the road, turn on your hazard flashers and move away from the vehicle. Flashers should only be used when you pull over to show you are parked on the side of the road.**

How Did They Get There?

W. RAE MCINNIS
Accident Investigations Directorate
U.S. Army Combat Readiness/Safety Center
Fort Rucker, Ala.

When things stopped moving after the accident, the UH-60 Black Hawk sat in the deep snow just below the tree line in the high mountains. The blades were shredded, the external stores were a few meters up the hill and a tree had skewered its way through the bottom of the helicopter into the survivable space.

Although the crew was relatively uninjured, they were now out in the cold and unable to communicate by radio. Their cell phones also had no signal. No one knew where to search for them and it was starting to snow heavily. Fortunately, they were able to walk down the mountain to a road, where a local law enforcement officer happened to drive by.

How did this experienced crew manage to get a perfectly good aircraft into this situation? How did they get to where no one knew their location, forcing them to walk through the snow hoping someone would notice? A series of errors or omissions, the crew's supreme confidence in their own abilities and overconfidence on the part of leadership all contributed to the outcome.

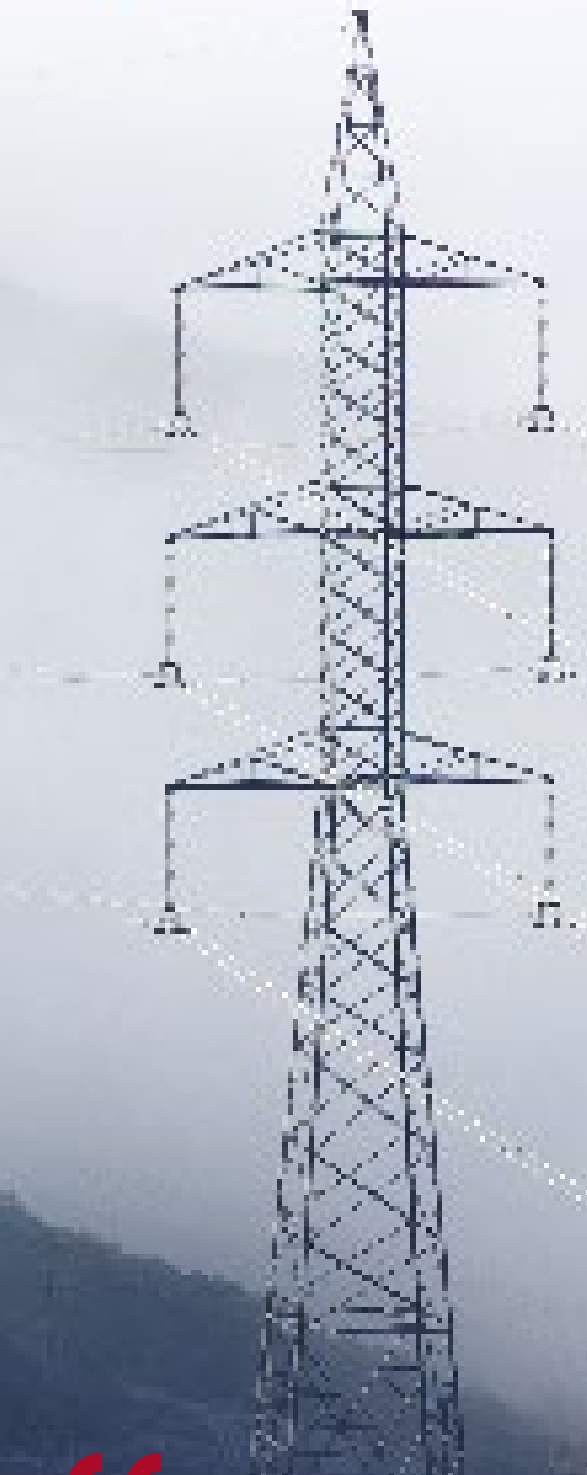
The Mission

The mission looked simple: Ferry an aircraft from a maintenance facility to home station. The distances were great, but this was something of a routine mission for the unit. The same pilot in command (PC) had done this mission several times and never had a problem. This was a low-risk mission all the way, and the crew thought a single risk management worksheet for 10 days worth of flying would cover the job.

On this particular mission, the crew needed to recover an aircraft and return to home station. Bad weather was moving in and they wanted to get through the mountains before it arrived. They planned a flight through a mountain pass that was below 10,000 feet mean sea level (MSL). However, instead of pulling weather data from a military weather reporting facility, the PC pulled weather from an online weather source that said the pass was clear. The crew departed on a visual flight rules (VFR) direct flight plan only to find the pass blocked by winter weather. A forecast from Air Force weather at the departure airfield would have told them this before takeoff and denied clearance for the flight.

Now what? Well, there was another pass 50 miles to the south. It was above 11,000 feet MSL and the

"**ALTHOUGH** the crew **WAS** relatively **UNINJURED**, they **WERE** now **OUT** in the **COLD** and **UNABLE** to **COMMUNICATE** by radio."



weather hadn't gotten there yet, so they turned south. Now their VFR direct flight plan wasn't so direct. Unfortunately, they did not communicate that change to anyone. As they approached the pass, they began to climb. However, because of limited available power at this altitude, the trees were getting closer and closer. As the crew neared the top of the pass at low airspeed, they suddenly spotted power lines running along the ridge directly in front of them. Turning away from the power lines put the aircraft in a tailwind condition at low airspeed, high gross weight, high-density altitude and with the pilots still making significant control inputs.

You know what happened next, right? Yep, the rotor drooped and the aircraft couldn't maintain clearance from the trees. Once things got really bad, the crew jettisoned the external stores, but it was too late. They were now 50 miles of rugged terrain away from their planned direct route with a broken aircraft, out of contact and a winter storm brewing. Luck was with them that day and they were found.

Lessons Learned

What can we learn from this accident? First, the events leading to this accident started on the ground hours before the aircraft hit the trees. A good weather briefing from an appropriate, easily available source telling the crew their primary route was impassable would, or at least should, have led to better preflight planning. Better preflight planning would have included performance planning for the actual environment and a better discussion of flight in mountainous terrain — including mentioning the 200-foot-high power lines at the pass. These are absolute necessities for safety, but in this scenario they were found wanting. Supreme confidence in one's self and aircraft are great, but a man has to know his limitations and the actual hazards he might face.

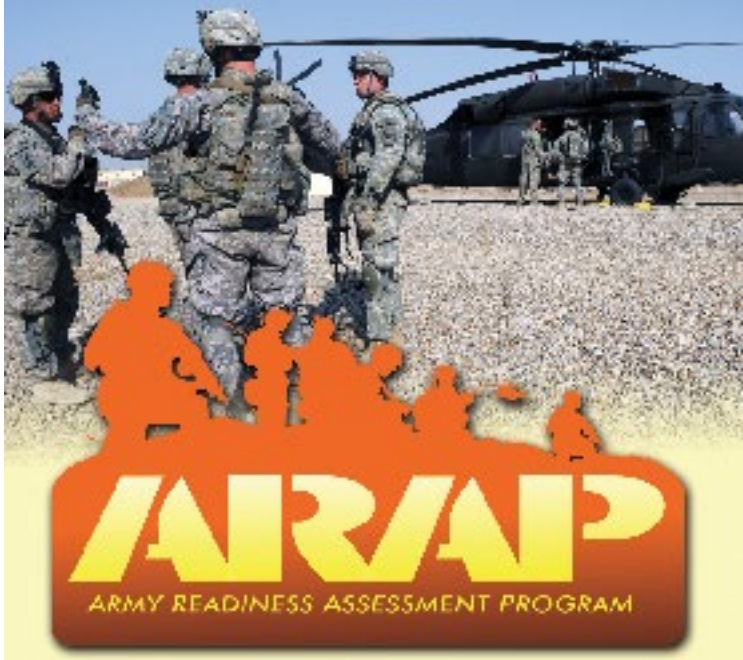
Another item for discussion here has occurred in at least three

"SUPREME confidence in ONE'S self and AIRCRAFT are great, but a MAN has to KNOW his LIMITATIONS and the ACTUAL hazards he MIGHT face."

Class A accidents over the past year — hesitance to jettison external stores. A number of aircrews either failed to jettison or waited too long to jettison several hundred pounds of weight that could have made the difference. There is nothing more frustrating than listening to cockpit recordings of a crew discussing jettison procedures, only to wait too late to take action. Saving those tanks or rockets isn't worth losing an aircraft and its crew.

Finally, perhaps the greatest lesson learned is that there is no crew so experienced, no instructor pilot so phenomenal and no test pilot so expert that their own abilities negate the need to do the basic things that must be accomplished on every mission. These include accurate performance planning for worst-case conditions, proper flight planning and communications, adequate supervision and briefing and preparing for environmental flight conditions without fail before every flight.«

ARE YOU READY?



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Party Crashers

CAPT. BRENDA L. BEEBE
Georgia Army National Guard
Dobbins Air Reserve Base
Atlanta, Ga.

For those of us fortunate enough to live in the southern United States, the end of winter is in sight. For many, that means plans are already in the works for cleaning cluttered garages, tending to neglected flowerbeds or spring break beach trips. I, however, have only one thing on my mind this time of year — Super Bowl Sunday.

FYI

For specific guidelines on food safety, check out the following Web sites: http://www.fsis.usda.gov/Fact_Sheets/index.asp and http://www.foodsafety.gov/.

Despite what some might think, the Super Bowl isn't just about football. It's also an opportunity for us to gather with Family and friends, watch some great commercials and stuff ourselves silly with some less-than-healthy snacks. Although I am a big fan of these annual get-togethers, I'm also keenly aware of the potential hazard that exists when bacteria crashes the party.

I'm not exactly sure if I've ever experienced the effects of this uninvited buffet guest since I've never had it diagnosed. However, I've seen its effects on my Family and friends over the years. I also learned enough about bacteria in my college courses to know it's something I want to avoid. I recommend you do the same.

Don't get me wrong, not all bacteria are bad. For example, a variety of E. coli is normally found in our lower intestine and significantly aids in digestion. It breaks down cellulose and assists in the absorption of vitamin K, the blood-clotting vitamin. But not all forms are so helpful. Another variety, E. coli O157:H7, secretes a powerful poison, called a verotoxin, which attacks and kills human kidney, brain and stomach cells. This can make you very sick.

There are so many types of bacteria out there that I don't worry myself about remembering each one specifically. Instead, I keep one main idea in mind when setting out food for a buffet: If bacteria are allowed to multiply on my leftovers, food-borne illness can result, leading to serious, or even deadly, circumstances. According to the World Health Organization, about 76 million cases of food-borne diseases occur in the United States each year. These incidents result in 325,000 hospitalizations and 5,000 deaths. Information like this has led to a movement toward food safety education.

With the growing popularity of The Food Network and cooking shows in general, information on food preparation safety is now more widely available than ever. It's becoming common knowledge to wash hands before handling food, cook meat to an appropriate inner temperature using a meat thermometer and use separate cutting boards for meat and vegetables to prevent cross-contamination. However, once the food is put on the table, food safety principles seem to go right out the window.

Over the years, I have been to countless buffets at the homes of my friends and Family members where a wonderful display of food has been set out for everyone's enjoyment. Upon closer inspection, I usually identify some common oversights that pose potential hazards to everyone's health. Platters of meats, cheeses, fruits, vegetables, potato salad, beans, dips and hors d'oeuvres are often left out for hours at room temperature without coverings. This setting can easily become a playground for bacteria. Knowing this, I usually start covering food on the table whenever no one is dishing anything onto their plates. I often get strange looks from party guests as if this is unnecessary, but I know better.

Coverings such as lids or foil help prevent airborne bacteria from "falling" onto the food. Keeping hot foods hot and cold foods cold also prevents most bacteria that do come into contact with your food from making themselves comfortable and multiplying. As a general rule of thumb, throw away foods that have been kept out at temperatures between 40 and 140 F for more than two hours. If you have kept the food at an appropriate temperature or at room temperature for less than two hours, refrigerate promptly.

Something else to keep in mind is proper hand washing. Inadequate hand washing is responsible for cross contamination even after the food preparation is over. I know a lot of people who wash their hands before they eat. However, I rarely see them wash their hands before going back for seconds (or thirds). Hand washing remains important throughout the festivities while food is being consumed. It should not be forgotten.

Remember the five key food safety principles this Super Bowl Sunday — or any day, for that matter: cleanliness, coverings, temperature, time and storage. If you are in charge of your next Super Bowl party buffet, show your guests that you care about their health as well as their fun. Take appropriate food safety precautions before, during and after the buffet is served. Don't let party crashers spoil your fun. I know I won't.

GUIDING RIG

Before deploying to Iraq, our transportation unit was understrength, so other Soldiers in the state that had an 88M military occupational specialty (transportation) were pulled from their units to head out with us. However, this caused some unforeseen issues. For instance, when using ground guides, these Soldiers used different hand and arm signals. At times, this could be frustrating.

When working around vehicles, a driver and ground guide must remain alert to everything around them. Due to the noise level of vehicles and other equipment, they have to be able to communicate effectively by using hand and arm signals. For the Soldiers who were new to our unit, this meant learning and adapting to our signals. It's important that everyone uses the same signals so we work more effectively as a team.

A driver must always use a ground guide when a vehicle is in

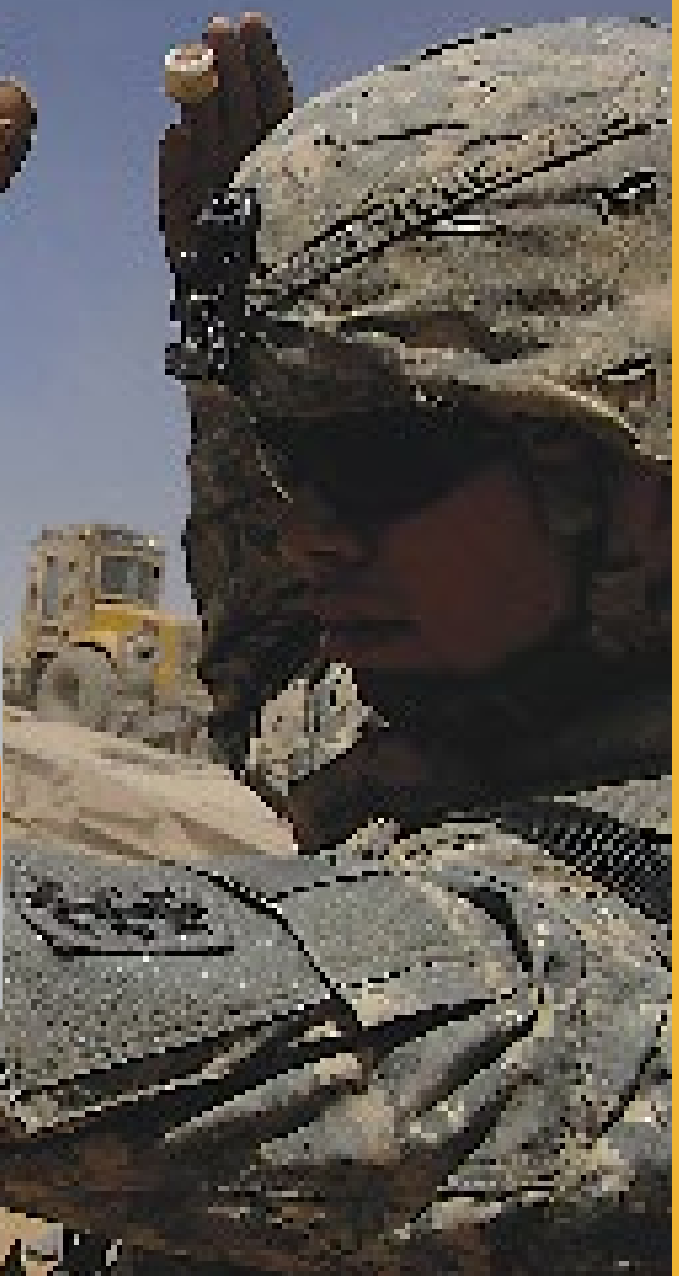
FYI

For more information on ground-guiding procedures, see Field Manual (FM) 55-30, Army Motor Transport Units and Operations; FM 21-305, Manual for the Wheeled Vehicle Driver; and Training Circular 21-306, Tracked Combat Vehicle Driver Training.

GHT

MASTER SGT. TOM COLLUM
Headquarters and Headquarters Detachment
Missouri Army National Guard
Jefferson City, Mo.

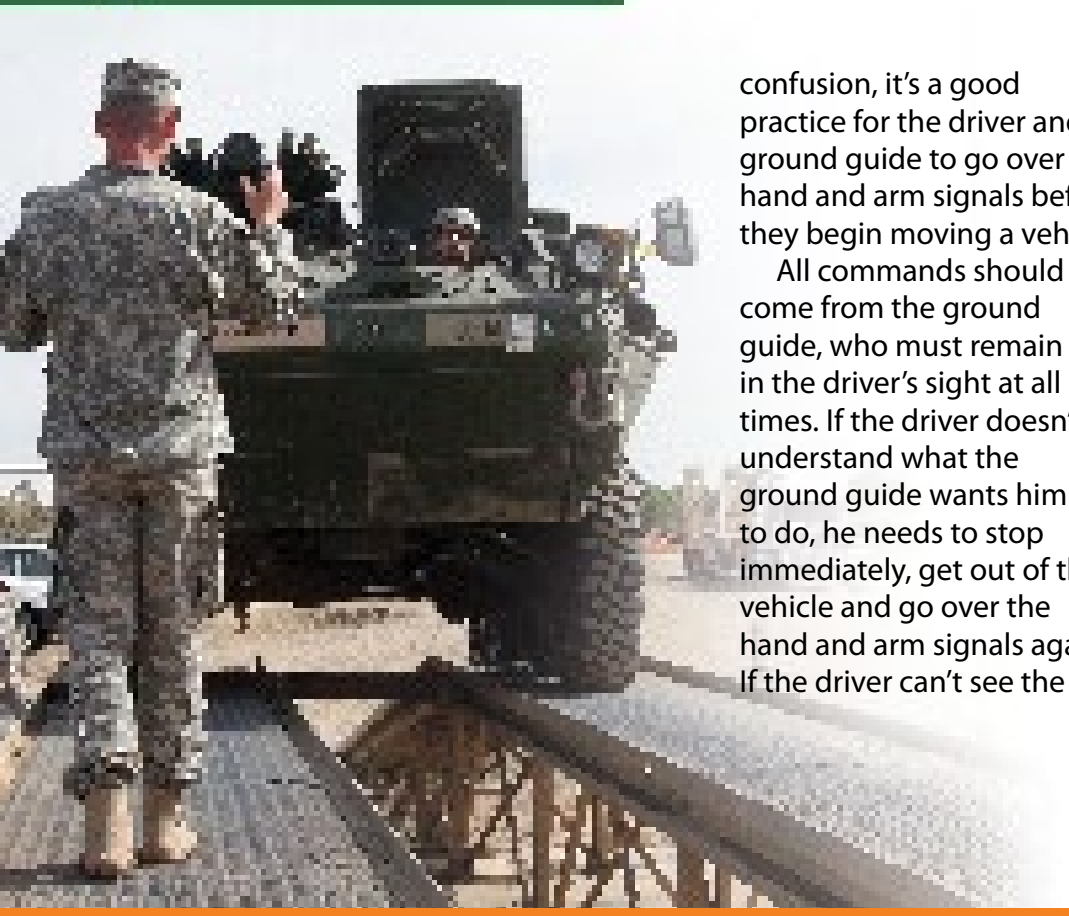
a motor pool, bivouac or assembly area or when backing up. If these areas are tight or congested, two ground guides must be used. This helps ensure the driver doesn't run into another piece of equipment, a Soldier's gear or, more importantly, a Soldier. This is why it is very important the ground guide and the driver communicate effectively. To avoid



DID YOU KNOW?

Ground guides are a vehicle operator's "eyes" when maneuvering equipment in areas of limited visibility. Therefore, ground guiding a vehicle is one task where training and coordination between the two is paramount. To help prevent injuries to ground guides and other personnel, follow these simple steps:

- All drivers and other unit personnel will be trained to standard in the correct use of ground guides and ground-guiding operations.
- Always use ground guides when backing and in congested areas.
- When traveling cross-country during periods of limited visibility, ground guides will be used. Drivers will keep ground guides in view at all times.
- Ground guides will be used in bivouac and assembly areas.
- Two ground guides will be used when vision is restricted. Ground guides should never walk backward and never get between two vehicles.
- During periods of limited visibility or darkness, ground guides will be equipped with suitable lights (two flashlights and extra batteries).
- Ground guides will use hand signals. Voice signals can be misunderstood or go unheard.
- Ground guides will also:
  - Keep a proper distance from the vehicle (10 yards).
  - Give signals only to the vehicle driver.
  - Stay out of the path of travel.
  - Stay in the driver's line of sight.
  - Keep to the side and front (or rear) of the vehicle (driver's side is best).
  - Clear themselves, clear the vehicle and, finally, give the command to move the vehicle.



confusion, it's a good practice for the driver and ground guide to go over the hand and arm signals before they begin moving a vehicle.

All commands should come from the ground guide, who must remain in the driver's sight at all times. If the driver doesn't understand what the ground guide wants him to do, he needs to stop immediately, get out of the vehicle and go over the hand and arm signals again. If the driver can't see the ground guide or notices he is in a dangerous position, he should stop immediately and get out of the vehicle to ensure the guide is OK.

The ground guide must always stay at least 10 yards away from the vehicle or piece of equipment to ensure nothing will be damaged when the vehicle is in motion. He should never run, walk backward or walk between two vehicles and only communicate with the driver when the vehicle is in motion.

WHERE'S MY BOX OF GROUND G

While attending the Fort Knox, Ky., armor school, I was taught how to use hand and arm signals during day and night conditions. Back then, my ground-guiding skills were definitely lacking at best. Eventually, though, my skills improved to the point where I believe I could help a driver parallel park a tank on Main Street U.S.A. during rush hour. Sadly, it appears ground-guiding standards aren't being enforced like in the past.

When I got to my first duty assignment, the running joke was to send all the incoming privates or lieutenants to get a box of ground guides. Since everyone was in on the hazing, this mission sent me from my maintenance team to the commo shop, to POL and then back to the platoon sergeant. In a way only he could, the platoon sergeant said, "My friend (or perhaps a more "colorful" term), there is no such thing as a box of ground guides!" I was embarrassed and couldn't wait until the next Soldier arrived so I could continue the ritual.

It took me a few months to realize it, but there actually was a box of ground guides at my disposal — and I didn't have to go far to find them. They were the Soldiers around me. I could ask anyone for help and they would be more than capable to handle it.

By the time I completed my last Tank Table VIII in Grafenwoehr, Germany, I was at the top of my game. As a tanker in the field, there was nothing more exhilarating (or terrifying) than navigating a tank across 10-plus railcars at night armed with only your training, a flashlight and an impatient rail-meister below. (Mind you that the outer half of the track on each side of the tank is not on the railcar.) At the motorpool, "dress right dress" was the standard for all tanks, and it wasn't a huge deal to have your sergeant first class come to your room one hour after final formation to tell you your tank was not online.

As I transitioned from an

When using two ground guides, the driver and both guides should go over hand and arm signals and decide who will be the primary guide. The primary ground guide is the one from which the driver takes his signals. If there is any confusion or one of the guides can't be seen, the driver needs to stop the vehicle immediately to ensure the safety of the guides.

Ground guides are an essential part of safely moving vehicles and heavy equipment. The proper use of ground guides can and will reduce injuries and accidents in the military.

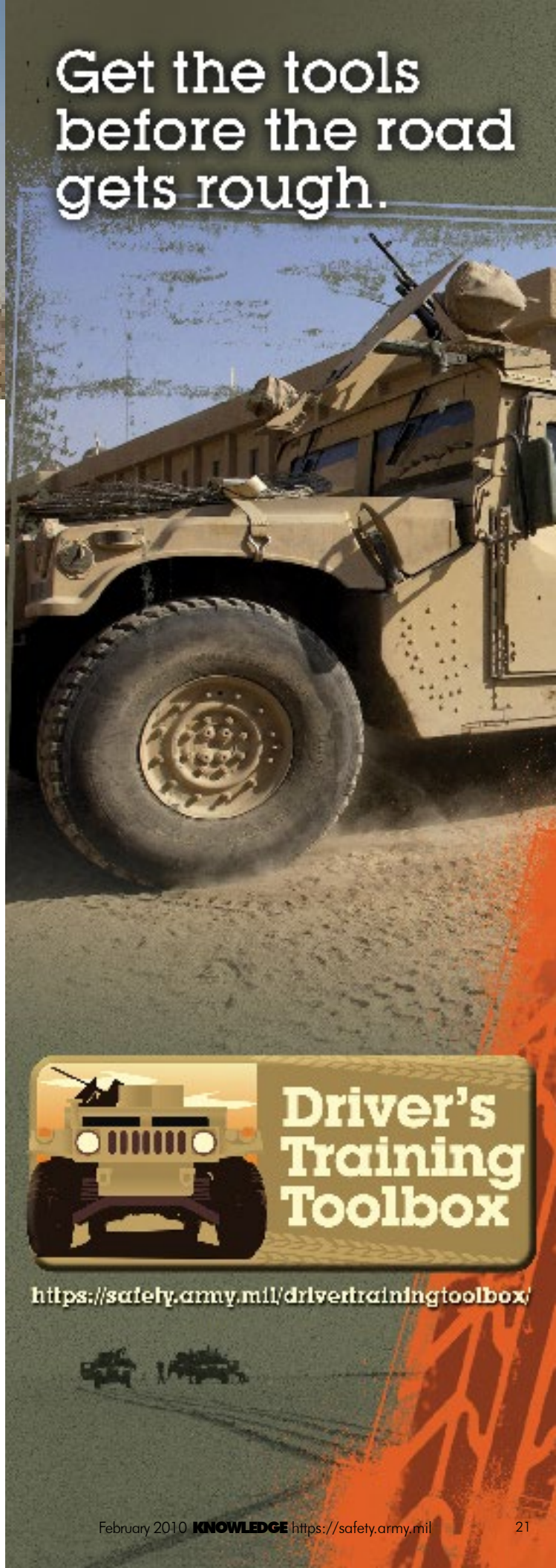
GUIDES?

STAFF SGT. SEAN JONES
99th Regional Support Command
U.S. Army Reserve
Fort Dix, N.J.

active-duty tanker to a postal specialist in the Army Reserve, I noticed a drastic drop in the personnel able to execute ground-guiding operations to standard. I routinely stood behind a vehicle as it was backing up to see if and when I would be noticed. When it was obvious the driver thought he had no use for a ground guide, I would scream, "My leg!" at the top of my lungs to get the attention of everyone around. Even when I got behind a vehicle to be a ground guide, more often than not the driver didn't understand the signals I was using. I often found myself giving a block of instruction.

I don't think this drop in ground-guiding skills is due to a lack of training. I think it is more a matter of rusty skills and lax enforcement of standards. Any accident related to the lack of a ground guide is preventable. As Leaders, we need to get back to the basics. We need to replace complacency with vigilance.

As a safety professional, I want to make common sense more common. Let's retrain our Soldiers to do what's right so they'll do it unconsciously. Let's put that box of ground guides in every motor pool, training area and Reserve center.



What Are You Thinking?

GEORGE C. DANIELS
18th Fires Brigade
Fort Bragg, N.C.

The last thing any Leader wants to get is a late-night call on a weekend. Usually, the news isn't going to be good.

It was a Friday about four years ago when I got a late-night call from my commander. He told me one of our Soldiers had died in an automobile accident in Indiana. He said the Soldier was riding with a drunk driver who'd crashed into another vehicle. Sadly, the Soldier was unbelted, thrown from the vehicle and killed.

Any fatality is a tragedy, but the timing of this Soldier's death was particularly bad. Our unit had been scheduled to deploy from Fort Bragg, N.C., to Iraq in about a week, but our departure had been pushed back another week as we awaited new flight plans. We'd been on block leave and, during this delay, our commander ordered everyone to remain in the local area and to limit themselves to two drinks a night.

> "I started to **QUESTION WHY** this Soldier **DIED**. The first thing that came to mind was, **'WHAT WAS HE THINKING?'**"

When I got the news about the Soldier's death, it sent a chill through me, along with other emotions I can't really describe. I started to question why this Soldier died. The first thing that came to mind was, "What was he thinking?" He was a single Soldier who lived in the barracks. He had a few friends, but didn't hang out a lot and had just gotten back from home. He was a very religious kid and I can't remember anybody saying anything bad about him. He kept pretty much to himself and wasn't a regular drinker.

His trip home had been emotionally draining for him and his Family, who were worried about his safety during the deployment. Now, someone was going to have to call and inform them that he died in an auto accident before even leaving the country. And when his Family asked about the details, they would have to hear the depressing news that he'd violated orders, was on an unauthorized pass, was drinking underage and not wearing his seat belt.

As hard as it was, the commander brought the unit in on Saturday and informed everyone of the Soldier's death. I will never forget the expressions I saw on the faces of his fellow Soldiers.

Our unit deployed to Iraq and performed our mission of convoy security. During the year we were there, we traveled more than 1 million miles. We endured improvised explosive device attacks, missile attacks and close-range gun battles — all without losing a Soldier in combat. Still, our mission wasn't a total success; we'd lost a Soldier — one who never even made it into combat.

It doesn't matter whether you're in the predeployment phase or the middle of a deployment — it is all part of the mission. A Soldier lost is a Soldier lost, and that affects the unit's mission, not to mention the Soldier's Family and friends in the unit.

When you consider more Soldiers are lost to off-duty accidents than to combat-related accidents, those losses cannot be taken lightly.

If you drink and drive or ride with someone who does, it's time to wake up and ask yourself, "What am I thinking?" Consider how badly you want to live, to survive the dangers of combat and come home to your loved ones. Then remember, the first part of coming home is not getting killed before you deploy.

BETTE AIRC

DEBI DAWSON
Program Executive Office Soldier
Fort Belvoir, Va.

American Soldiers conduct operations in a variety of environments. One of the most challenging is the mountainous terrain of Afghanistan. Seven years after the start of Operation Enduring Freedom, the region's high altitudes continue to challenge ground troops and aviators alike.

Army aircrews are now getting new gear to help them complete their missions successfully in higher altitudes. The portable helicopter oxygen delivery system (PHODS) will enable Soldiers to operate safely and effectively in high-altitude mountainous terrain.

Meeting Combat Requirements

The PHODS was developed and fielded by the Program Executive Office Soldier, the Army's acquisition office responsible for nearly everything a Soldier wears or carries. The fielding comes in response to the rising need to have nonpressurized aircraft operating in conditions of reduced oxygen. Before fielding the PHODS, the only authorized system for use by aircrews was the helicopter oxygen system that weighed more than 100 pounds and was too large for some types of aircraft, such as the Apache.

Current operations sometimes require rotary- and fixed-wing aircrews to fly at altitudes above 10,000 feet mean sea level (MSL), where there is a risk of hypoxia. Hypoxia is potentially fatal and occurs when the body, or part of the body, is deprived of an adequate supply of oxygen. The most common effects of hypoxia are impaired judgment, delayed reaction time and mental confusion.

Before PHODS, Soldiers would sometimes address the hypoxia issue on their own by buying an off-the-shelf solution with unit funds. The first PHODS, delivered to the 159th Combat Aviation Brigade (CAB) in January 2009, was employed to conduct operations in Afghanistan. The PHODS, supplied by Product Manager (PM) Air Warrior, are now available to meet mission requirements for CH-47, AH-64 and UH-60 aircrew members.

PORTA DELIVE

Mask

R AIR FOR CREWS

Testing the PHODS

To combat the risks of hypoxia, PM Air Warrior worked with the U.S. Army Aeromedical Research Laboratory (USAARL) at Fort Rucker, Ala., to evaluate a portable oxygen system for use by helicopter crews. During the evaluation, test subjects were placed in a hyperbaric chamber, where the amount of oxygen can be controlled. Test subjects experienced several different "ascents," when oxygen pressures were artificially reduced to mimic different altitudes. The PHODS was tested at a variety of altitudes. These tests indicated the system delivered an adequate supply of oxygen to prevent the effects of hypoxia for users, both at rest and those with an increased heart rate from physical exertion.

BLE HELICOPTER OXYGEN RY SYSTEM (PHODS)

PHODS US

PHODS 101

The PHODS consists of a regulator, interface tubing, a nosepiece called a cannula and a Department of Transportation-approved MIL Spec oxygen bottle. The PHODS does not give users a continuous flow of oxygen. Instead, it delivers periodic bursts of oxygen through the cannula, based on the user's breathing rate and altitude, to maintain a safe amount of oxygen. Using a pulse system, as opposed to a continuous flow, greatly extends the use time of each oxygen cylinder.

The PHODS provides about 2½ hours of oxygen at an operating altitude of 15,000 feet. The oxygen delivery system uses either an oxygen mask or a nasal cannula configuration, the latter consisting of a hose and two nodes inserted into the user's nostrils. The mask and cannula can be attached to the Soldier's flight helmet. Both configurations used in the USAARL tests provided sufficient oxygen to the user. If the user is particularly active and requires more oxygen, the flow can be adjusted; however, the tank will run out of oxygen quicker. Aviation life support equipment technicians can refill the cylinder with oxygen.

Tests have also been conducted using the PHODS for compatibility with current aircrew assemblies and night vision goggles, as well as human factors, including emergency egress. The PHODS will be fielded with the mobile oxygen cylinder refill station (MOCRS), which produces the oxygen for filling the PHODS cylinders.

Predeployment Training

Before receiving the PHODS, ground force Soldiers can receive initial altitude physiology training and aircrew members can receive additional refresher training from the U.S. Army School of Aviation Medicine (USASAM), Fort Rucker. Soldiers are trained on the proper use of the PHODS before they deploy and will continue to be supported during their deployment overseas. The system allows aircrews to fly missions safely above 10,000 feet in the high mountainous areas of Afghanistan with reduced risk of hypoxia.

A team of Soldiers from USASAM brought a stand-alone altitude simulator called

SER SYSTEM KIT

The oxygen delivery system uses either an oxygen mask or a nasal cannula configuration, the latter consisting of a hose and two nodes inserted into the user's nostrils. The mask and cannula can be attached to the Soldier's flight helmet.

the reduced oxygen-breathing device (ROBD) to simulate the loss of oxygen to the Soldiers of the 159th CAB at their home station of Fort Campbell, Ky. During training, Soldiers donned a mask and breathed a mixture of air with some of the oxygen replaced with nitrogen to simulate the reduced amount of oxygen at high altitude. This device induces hypoxia in a controlled environment without the risk normally associated with hypobaric chambers. This gave the Soldiers an idea of how hypoxia will affect them in flight.

Summary

The PHODS has demonstrated the ability to maintain aircrew blood oxygen at acceptable levels up to 18,000 feet. For most Army aircrew members, the PHODS is the only system available to prevent hypoxia and adequately provide oxygen without creating additional safety concerns. It provides a tactical advantage on the battlefield and will be a key component in the Army's expanding role in Afghanistan.

WHAT DO YOU THINK?

From January through March, **KNOWLEDGE** magazine is conducting a survey to determine whether we're meeting our readers' needs. Please help us out by taking a couple of minutes to answer a few simple questions at https://safety.army.mil/.

After all, this is your magazine. Shouldn't it contain the information you find helpful?

What If?

CAPT. HAJJA SAHID-HICKS
58th Infantry Brigade Combat Team
Ruhl Armory
Maryland Army National Guard
Towson, Md.

Editor's note: The name of the individual mentioned in this story has been changed to protect his Family's privacy.

Command Sgt. Maj. Gary H. Woodard was 45 years old, had been married 24 years and fathered three children. An Army National Guard Soldier, he worked full time with a local hospital. During his well-respected military career, he was known for taking care of his Soldiers and had touched the lives of many.

Woodard was a very cautious man. When I first met him, he was a first sergeant and always careful when it came to safety in the field and during training on drill weekends. His philosophy was "not on my dime" — meaning there would be no accidents during his drill period. He thoroughly reviewed all risk assessments and ensured safety briefings were completed and revised for all operations at least three months out.

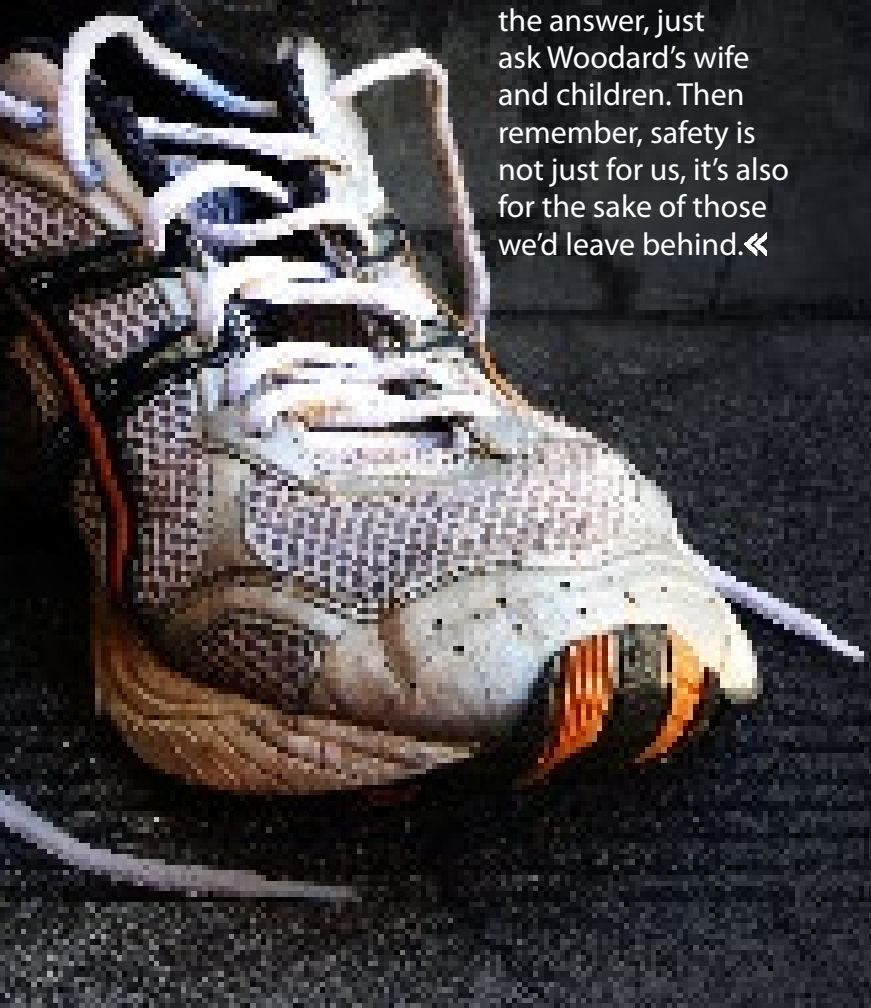
One cool March night he was running in his neighborhood, as he usually did a few days each week. It was a routine that never got old for him. But this night would be different and change the lives of many forever. As he was running, he was hit by a car driven by a young woman visiting Family in the neighborhood. He was rushed to the hospital where, after a few days, his Family had to make the most difficult decision of their lives. He passed away late that night, the victim of head injuries from which he could not recover. His loss was devastating to his Guard unit. As I thought of him, I kept asking myself, "What if?"

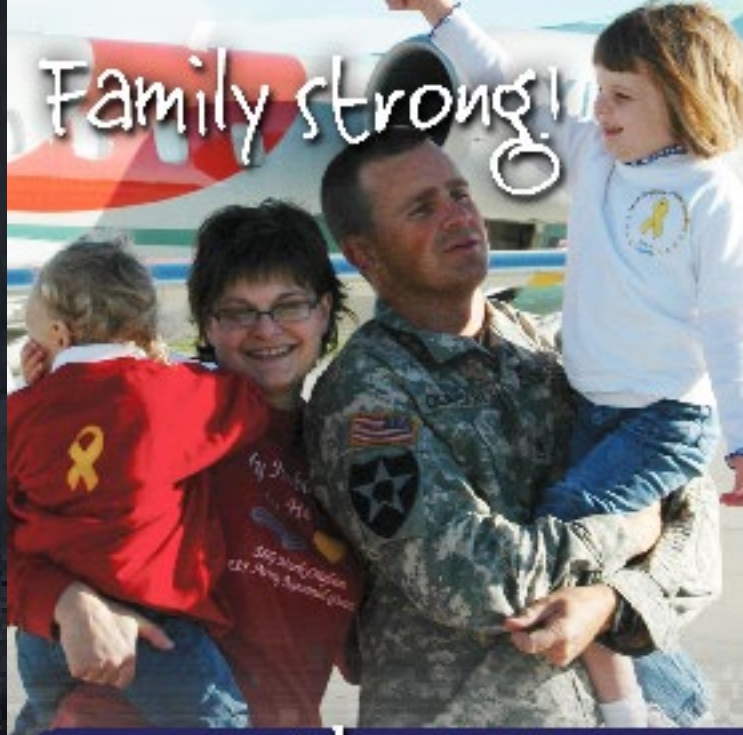
What if he had been running against the direction of traffic instead of with it? What if he'd been running on the sidewalk instead of the street? What if he'd worn a reflective vest that night? Would the driver have seen him? What if he hadn't had on his iPod? Would he have heard the car coming in time to react? What if he'd run just a little earlier that day (while it was still light outside)? Maybe he would still be here with us today.

It has been almost a year since his death. I often wonder how different things might be had he taken home the composite risk management procedures he pushed so hard on drill weekends.

As Soldiers, we're taught to be aware of the risks in combat and training. But what about the risks in things we've done countless times in environments we assume are safe? Is there really ever a time or place so safe we can afford to let down our guard?

If you don't know the answer, just ask Woodard's wife and children. Then remember, safety is not just for us, it's also for the sake of those we'd leave behind.«





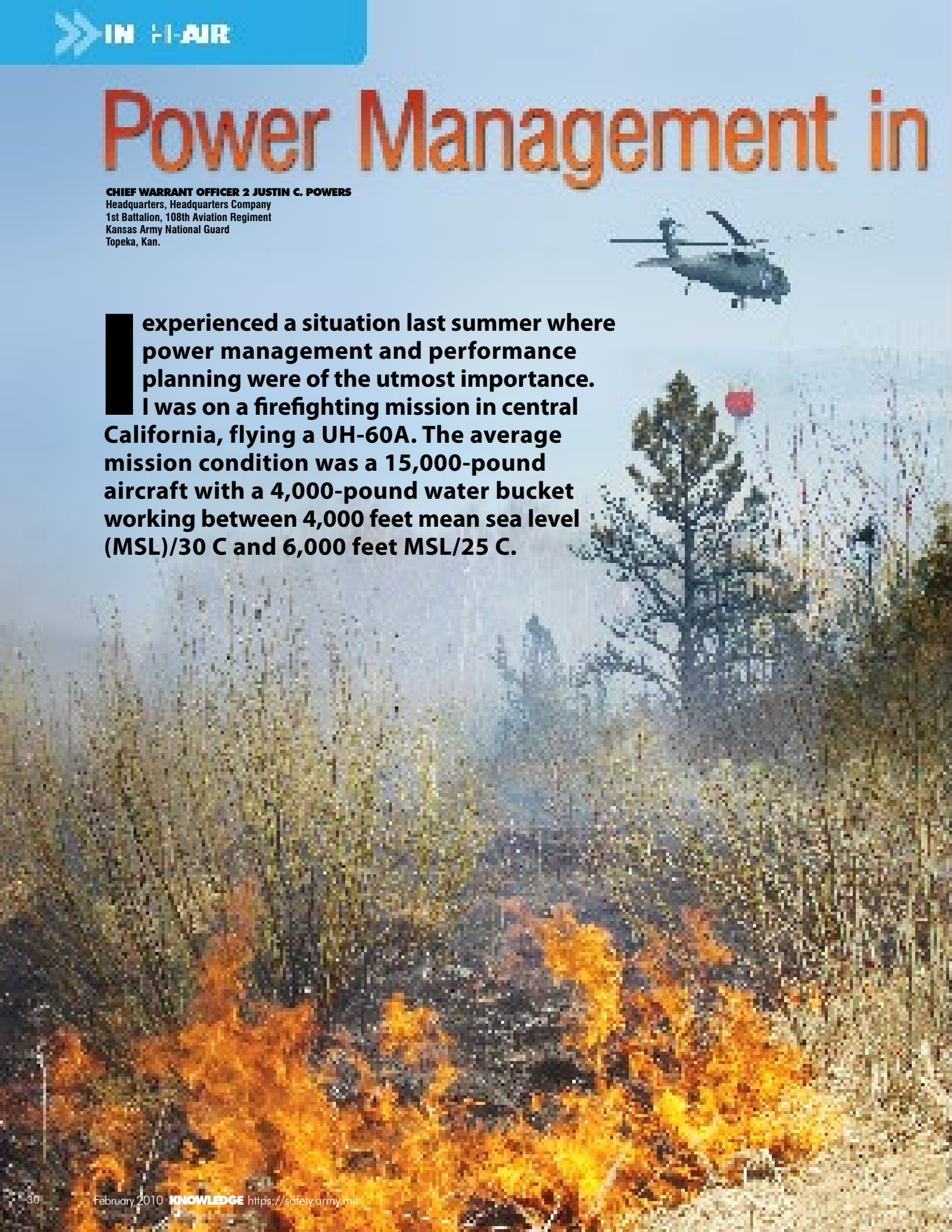
Family engagement Kit

https://safety.army.mil

Army Safe is Army Strong and that starts with a Soldier's Family. Have the information to help you and your Family stay SAFE.

Power Management in

CHIEF WARRANT OFFICER 2 JUSTIN C. POWERS
Headquarters, Headquarters Company
1st Battalion, 108th Aviation Regiment
Kansas Army National Guard
Topeka, Kan.



I experienced a situation last summer where power management and performance planning were of the utmost importance. I was on a firefighting mission in central California, flying a UH-60A. The average mission condition was a 15,000-pound aircraft with a 4,000-pound water bucket working between 4,000 feet mean sea level (MSL)/30 C and 6,000 feet MSL/25 C.

FIREFIGHTING

Going into this mission, we knew that performance planning was essential, as our normal operations were at 15,000 pounds and 1,500 feet. Our initial calculations showed we did not have out of ground effect (OGE) capability at 6,000 feet and only marginal performance at 4,000 feet, which meant we couldn't perform water bucket operations.

One control measure we put into play was eliminating any nonessential equipment and passengers. Next, we used our performance planning cards and a U.S. Forestry Service helicopter load card to calculate the amount of fuel we could take on because we couldn't reduce our bucket weight any further. We found our max gross weight OGE for the conditions, subtracted the aircraft and full bucket weight, and the remaining weight was the maximum fuel we could have onboard.

We chose the best approach paths, using the wind to our advantage for performing max gross weight approaches because of our low power margins. We kept track of the winds by observing smoke drift and ripples on the water since the automated weather observation system and automated surface observing systems were not available or accurate in the mountains.

During approaches, we slowed down early and got the power back in to avoid mushing and transient rotor droop. We weren't always able to choose our landing direction (helicopter controllers sometimes dictated landing direction for traffic deconfliction because there were many aircraft working the fires), but we tried to use the longest approach paths with the shortest trees as much into the wind as possible.

Fuel onboard was normally 1,900 to 2,000 pounds, which translated to about 2½ hours of endurance. Since we reduced our fuel, we then had to be more vigilant with fuel management, especially with constantly changing conditions of gross weight and density altitude. By efficiently managing our fuel, we were able to deliver more water on fires, knowing exactly how long we could stay on station and how much fuel we needed to get back to base with our appropriate reserve.

I found the -10 was accurate with the fuel storage. The first water load with the Bambi Bucket of each mission was right on the edge of our power margin at 6,000 feet. As the mission progressed, we gained more and more power as we burned off fuel. In power-critical situations, crew coordination and familiarity are key, as you know what to expect from each other and what calls the other pilot needs to hear to be effective. Because of this fact, we used battle rostering as a control measure and it worked well.

This mission reinforced the importance of performance planning, crew coordination, fuel management, power management and landing zone selection. Power management is critical when operating at the edge of the performance envelope. After these missions, I realized training at the High Altitude Army Aviation Training Site in Gypsum, Colo., would be invaluable. This course is essential for both wartime and peacetime missions because it teaches crews to properly use their performance planning, crew coordination and mission planning for all scenarios. These types of missions are becoming more common with our resources being stretched.

> "**POWER MANAGEMENT** is **CRITICAL** when **OPERATING** at the **EDGE** of the **PERFORMANCE** envelope."

Because of the Overseas Contingency Operations and as professional aviators, we must stay vigilant, know our aircraft, use proper crew coordination, understand the mission and always use proper pre-mission planning. Today's modern aircraft are extremely powerful and capable. However, there is always that time when we'll be working on the edge of power available and we must be ready for it.

RICK MCBRIDE
Installation Management Safety Office
Fort Detrick, Md.

STAYING in the FIGHT

Combatives training is an important part of being a prepared Soldier. It provides the skills to help you protect yourself, as well as your comrades, in combat. Unfortunately, this training can sometimes take Soldiers out of the fight if they don't take the proper precautions.

Like any other Soldier in the Army, I received instruction in combatives during Basic Combat Training (BCT). But this was mainly just an introduction. As a high school and Division II college wrestler, I knew about this topic, which meant the instruction at BCT seemed a little slow to me because it was geared toward Soldiers who may have been less experienced in this area.

My first real introduction into modern Army combatives occurred at Fort Leavenworth, Kan., which was my first duty station. No, I was not a resident of this fine penitentiary; however, I was required to conduct monthly inspections of the United States Disciplinary Barracks (USDB). Anyone conducting business regularly within the USDB had to receive a four-week pre-service training before they could enter the facility. The curriculum provided a wide variety of information that included prison weapons, gang tattoos, inmate interaction and two days of hand-to-hand combat training.

Everything was going well with the self-defense/hand-to-hand combat training. The instructors provided us with useful background information, as well as their standard safety briefing. The pace of the instruction was good and I was performing quite well against my fellow classmates; therefore, the instructors chose to use me for demonstrations. Because of my enthusiasm and confidence, I agreed to participate. The class leaders instructed me to tap out if I felt like I was in too much pain or if I was going to lose consciousness. However, during the exercise, my stubbornness kicked in. I believed I was tough enough to take anything they tried on me.

The instructor demonstrated chokes from the mount position. He started with a cross-collar

FYI

The Joint Services Physical Training Injury Prevention Work Group (JSPTIPWG) recommends mouthguards be worn by all individuals participating in high-risk activities. According to the JSPTIPWG, Army Training and Doctrine Command posts where trainees wear mouthguards have reduced orofacial injuries by 68 percent. The Army has made mouthguard use a requirement by incorporating this intervention into Army Regulation 600-63, Army Health Promotion Program: "The Army Unit commanders will require and enforce mouthguard use during pugil stick training, bayonet/M16 training, obstacle/confidence course training, and hand-to-hand combat training. Commanders will require mouthguard use during PT or unit sports activities that may involve injury to the face or mouth as a result of head-to-head contact, falls, tooth clenching or blows to the mouth."

choke. In this type of choke, the instructor grabbed my lapels with opposite hands and tightly drew his hands together. This cuts off the blood circulation to the brain, causing an individual to lose consciousness. Within a few seconds, I began to feel dizzy. The next thing I remember was waking up with my two instructors standing over me. The rest of my classmates were stunned, and I noticed the shocked looks on their faces. The instructors thought this incident provided a great demonstration of the effectiveness of the choke. I was not seriously injured, but the incident did scare the hell out of me.

What happened to me was not uncommon. In fact, there have been 190 reported Army combatives training-related injuries since 2006. Accidents and/or injuries are categorized according to severity. Class A is the most serious type, resulting in death or a total permanent disability. Class B accidents result in a permanent partial disability. Class C accidents include any injury that requires time taken away from work and does not fall within Class A or B.

There has been only one Class A combatives training accident within this time frame, and a majority of the accidents since 2006 are classified as Class C. Although these injuries are less serious, they still take Soldiers out of the fight for which they are being prepared. Most of these injuries involved overextended joints in the knees, shoulders and elbows, as well as muscle strains and blows to the head or face. Many of these injuries are preventable by using the proper precautions. The following tips are meant for you, the Soldier, to use to avoid injury.

Follow Instructions

The instructor's role is to provide information Soldiers can use in a combatives situation without injuries occurring during the training. Do not ignore the direction provided during drills.

Ask Questions

If you are unsure about the proper technique to use on your partner, ask questions before participating in drills. Taking time to ensure you understand the correct way to perform a skill will keep you and your partner safe. Beginning a drill feeling uncomfortable is an excellent way to become another statistic. When it comes to safety, there really is no such thing as a stupid question.

Strength Training and Stretching

Soldiers are required to conduct physical training (PT) every day in the Army. Many experts say core strength training is the key to preventing injuries in sports such as wrestling, grappling and mixed martial arts. Core strength training includes the gluteus maximus, abdominal muscles and back and chest muscles. Staying limber is also helpful in avoiding injury. Stretching is an important start before any type of PT, including combatives and hand-to-hand combat. Exercising without stretching and warming up properly can lead to injuries, including, but not limited to, pulled and strained muscles, knee and joint injuries and additional soreness following the activity.

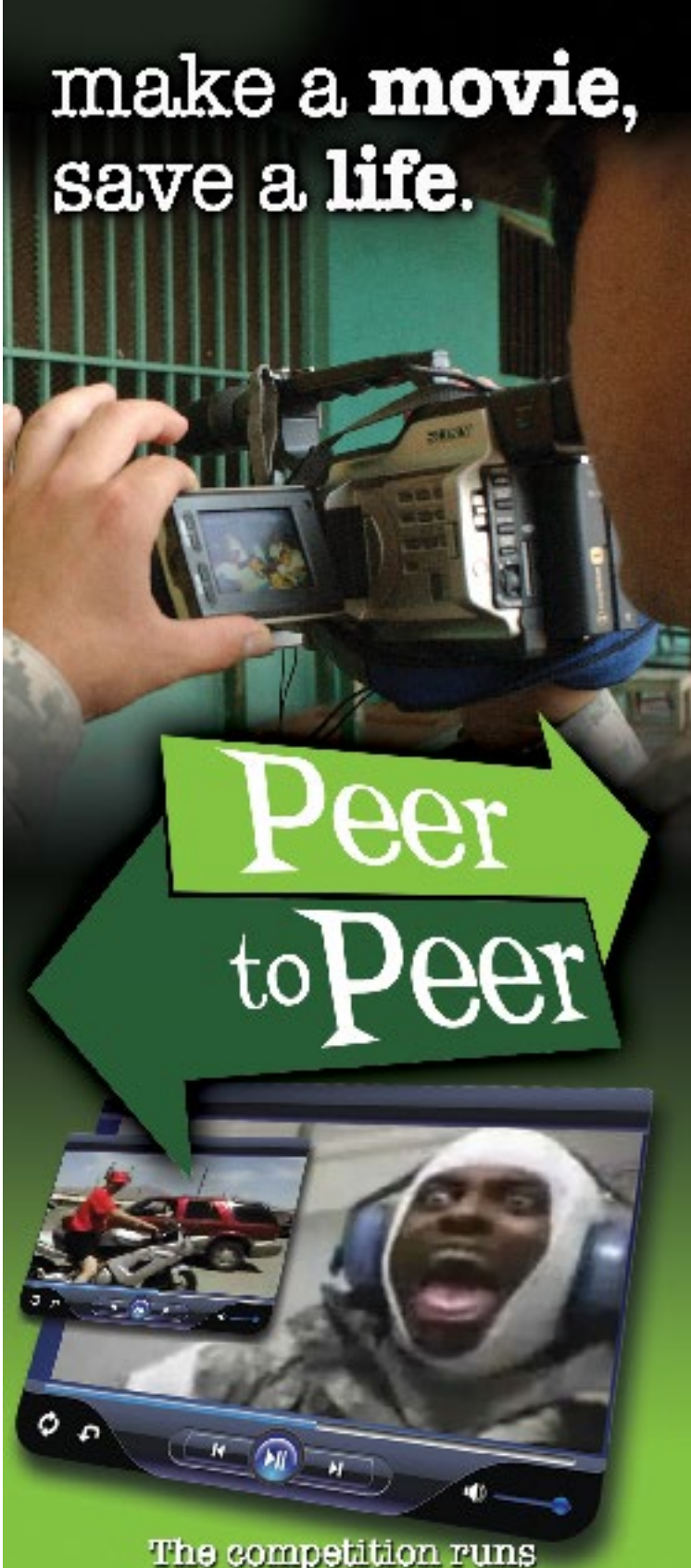
Know Your Limits

Overconfidence is a major risk factor for many Soldiers. Knowing your limits and not being afraid to let your partner know when to ease up is important to avoid serious injury. Avoid taking additional risks when taking combatives training. While you may enjoy combatives training, it's important to remember that pushing your body further than it is able to tolerate can lead to injury, which means less actual participation in the training.

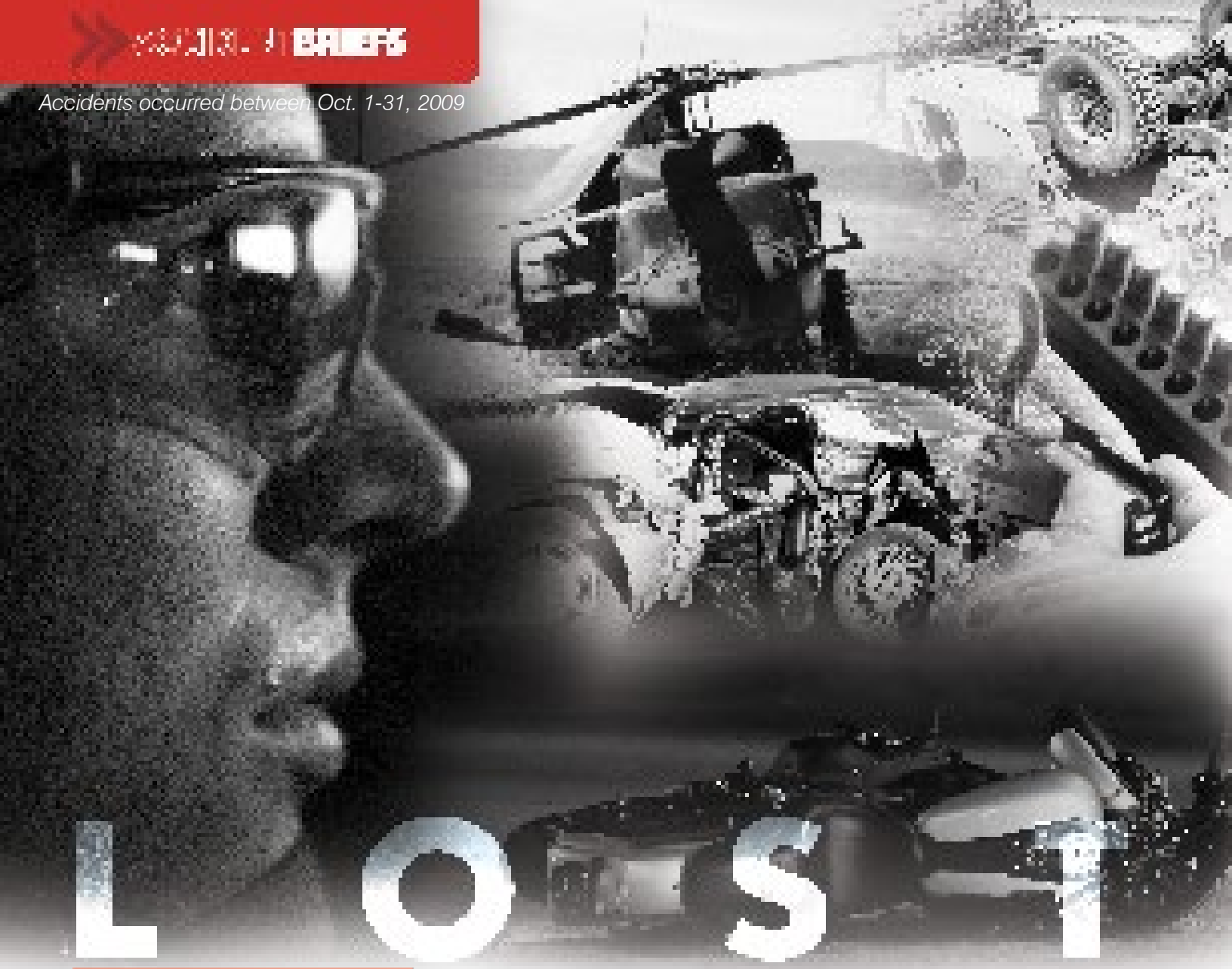
Be a Good Partner

Understand that you are not there to injure yourself or your partner. Proper combatives training requires you to train hard; however, listening to and understanding your partner is the key to preventing injury. When pairing with a partner, choose someone who is similar in size and ability level. Pay close attention to warning signs that your partner may be under too much physical stress. This may include verbal or nonverbal communication such as tapping or vocalizing their discomfort. If your buddy taps out or says "stop," discontinue what you are doing immediately. Combatives training is not the time to deal with negative issues you may have with another Soldier. It is completely unacceptable to address personal vendettas during this type of training. The goal is to prepare your fellow Soldiers for possible hand-to-hand combat situations in a realistic, yet controlled, setting.

Combatives training provides skills to help you protect yourself and your comrades in combat. Ignoring these tips increases your risk of harming yourself or others. Don't take yourself or a buddy out of the fight.«



Accidents occurred between Oct. 1-31, 2009



LOST

AVIATION

AH-6M

CLASS C

- During live-fire training, the aircraft M134 mini-gun experienced a malfunction, resulting in a shrapnel injury to one crewmember and damage to the aircraft. *Late report*.

CH-47F

CLASS A

- The aircraft landed with forward airspeed in dust conditions under night vision goggles. The aircraft then rolled forward and struck terrain, damaging the right main landing gear.

MH-60L

CLASS A

- The aircraft struck the deck of the ship during a routine training mission. One crewmember suffered fatal injuries.

UH-60M

CLASS A

- The crew experienced an uncommanded descent of the aircraft in flight. During landing, the aircraft struck an embankment, damaging the landing gear, undercarriage and main rotor blades.

FIXED-WING

C-12C

CLASS A

- The contractor-operated Army aircraft crashed in mountainous terrain and all personnel onboard were fatally injured.

C-12D

CLASS C

- While flying at an altitude of 19,000 feet and 180 knots indicated airspeed, the aircraft entered instrument

meteorological conditions and was struck by lightning. Maintenance personnel at home base discovered damage to an engine, props, elevator and tail section. *Late report*.

UC-35A

CLASS B

- An Army aircrew was executing a landing to the runway when the left main landing gear failed to lower. The crew conducted a gear-up landing without further incident.

GROUND

ACV

CLASS A

- A Soldier suffered fatal injuries when the Mine Resistant Ambush Protected vehicle he was riding in overturned during convoy operations. The Soldier, who was serving as the gunner, was pinned underneath the vehicle. Three other Soldiers in the vehicle suffered non-life-threatening injuries.

CLASS B

- A Soldier's finger was amputated when it was caught against the tow bar of a Stryker during vehicle recovery training.

AMV

CLASS A

- A Soldier suffered fatal injuries when he was ejected from a HMMWV that struck a light pole. At the time of the accident, the crew was operating under night vision goggle-aided blackout drive.

Other

CLASS A

- An Army civilian paramedic was killed when the ambulance he was riding in drifted off the road and struck a grove of trees while en route to pick up a patient. The Army civilian driving the ambulance was given first aid for his injuries. Both men were wearing seat belts.

Explosive/Fire

CLASS B

- A Soldier suffered second-degree burns to 15 percent of his body and third-degree burns to both hands when he ignited a handheld lighter during the use of isopropyl alcohol for aircraft maintenance.

Personnel Injury

CLASS A

- A Soldier was fatally injured when he was pinned by a sliding metal gate. The Soldier was manually rolling the gate to the closed position when it moved past the steel arresting structure and fell on top of him.
- A Soldier was killed in an off-duty parachuting accident. The Soldier struck the ground while performing a low-altitude maneuver.
- A Soldier drowned after he fell from a boat and did not resurface while fishing with another Soldier. His body was found the following morning. The Soldier was not wearing a personal flotation device.
- A Soldier died of a heat injury after collapsing during the

ARMY AVIATION LOSSES

Fiscal 2010

as of Jan. 6, 2010

Class A Fatalities	
ATTACK	0/0
RECON	1/2
UTILITY	2/1
CARGO	1/0
TRAINING	0/0
FIXED-WING	1/0
UAS	2/0
TOTAL	7/3

ARMY GROUND LOSSES

Fiscal 2010

as of Jan. 6, 2010

Class A Fatalities	
AMV	4/2
ACV	2/2
PERSONNEL INJURY includes weapons-handling accidents	6/7
FIRE/ EXPLOSIVE	0/0
PROPERTY DAMAGE	0/0
TOTAL	12/11

two-mile run portion of the Army Physical Fitness Test.

- A Soldier died from injuries he suffered while BASE (building, antenna, span and earth) jumping. The Soldier had been with a group of friends when he became separated from them. The Soldier's body was located several days later.

DRIVING

POV

CLASS A

- A Soldier lost control of his vehicle, struck a guardrail and a tractor-trailer and then went into a ditch and struck a tree. He was evacuated to a hospital, where he later died.
- A Soldier was injured in a single-vehicle crash and died while being transported to a local hospital.
- A Soldier and his fiancee were driving in inclement weather when their vehicle slid off the interstate and overturned. Neither were wearing seat belts and were ejected. The Soldier died at the scene. His fiancee was taken to a hospital and treated for moderate injuries.
- A Soldier died when he drove his vehicle into the rear of a tractor-trailer on an exit ramp. The tractor-trailer's driver had stopped because of an accident ahead and had turned on his hazard flashers to warn approaching traffic. The Soldier was unbelted.
- A Soldier was attempting to pass another vehicle when he lost control on ice and veered into the median. The vehicle overturned and the Soldier, who was unbelted, was ejected and killed.
- Two Soldiers were traveling in a sedan when it went out of control, overturned several times and struck a tree. One Soldier was ejected and fatally injured and the other was transported to a hospital, where he was treated and released.
- A Soldier riding in the backseat of a pickup truck died when the driver, who was speeding, lost control and struck a barrier. The Soldier was not wearing his seat belt and was partially ejected.
- A Soldier riding in a sedan driven by a 15-year-old with a learner's permit was killed when the driver lost control at high speed, struck a curb and overturned several times. The Soldier, who was unbelted, was ejected and died at the scene.
- A Soldier died when her car went over an embankment, became airborne and then hit the ground and overturned several times.

POM

CLASS A

- Two Soldiers were riding their motorcycles when they slid on the road and collided. Although both were wearing their helmets and personal protective equipment (PPE), one Soldier died at the scene.
- A Soldier on a cruiser went through a stop sign at a T-intersection and struck a tree. The Soldier was wearing his helmet and PPE, but died at the scene.
- A Soldier was killed on his motorcycle when a driver in the oncoming lane suddenly turned in front of him and caused a collision. The Soldier was

POV DRIVING LOSSES

Fiscal 2010

	Class A/Fatalities
CAR	12/12
SUV/JEEP	3/3
TRUCK	2/2
MOTORCYCLE	5/5
PEDESTRIAN	2/3
OTHER*	1/1

TOTAL DEATHS

09 31 y 30

transported for treatment, but later died at the hospital. The Soldier was wearing his helmet, goggles and gloves.

Pedestrian

CLASS A

- A Soldier was struck and killed by a vehicle as he crossed a dimly lit road.

- A Soldier who was driving got into an argument with a Soldier who was riding as a passenger. They pulled off the side of the road, got out of the vehicle and started fighting in the roadway. Both were struck by an approaching vehicle. One Soldier died at the scene, while the other was pronounced dead at a hospital.

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.

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ARMY SAFE IS ARMY STRONG

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U.S. ARMY
ARMY STRONG.

THE BAND OF BROTHERS & SISTERS

KNOWLEDGE

OFFICIAL SAFETY MAGAZINE OF THE U.S. ARMY

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U.S. ARMY COMBAT READINESS/SAFETY CENTER

ARMY SAFE IS ARMY STRONG

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Mission statement: The United States Army Combat Readiness/Safety Center (USACR/Safety Center) supports our Army by collecting, analyzing and communicating 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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Knowledge provides a forum for Soldiers, Leaders and safety professionals to share best practices and lessons learned and maintain safety awareness. The views expressed in these articles are those of the author and do not necessarily reflect the official policy or position of the U.S Army, Department of Defense or the U.S. Government. Contents are specifically for accident prevention purposes only. Photos and artwork are representative and do not necessarily show the people or equipment discussed. Reference to commercial products does not imply Army endorsement. Unless otherwise stated, material in this magazine may be reprinted without permission; please credit the magazine and author.

"**LEADERS** must be Leaders — **WE** have to **SET** the **STANDARD** of **RESPONSIBILITY**, accountability and **DISCIPLINE** for our **SUBORDINATES**."

SMART SOLDIERS, SAFE SOLDIERS

After serving in this great Army of ours for more than 25 years, one thing has become clear to me: Soldiers keep making the same mistakes when it comes to their safety and well-being. There's no doubt the dedicated Soldiers who make up our Band of Brothers and Sisters work hard to fulfill their difficult missions. However, many of them play just as hard in their off-duty time, and that's where the vast majority of our accidents are happening.

The Soldiers we often see in accident reports, especially those involving privately owned vehicles, are young adults taking the same risks many of us did at their age, fueled by bravado and a sense of invincibility. But just because we were reckless once doesn't mean we should tolerate risky behavior from our Soldiers today. Leaders must be Leaders — we have to set the standard of responsibility, accountability and discipline for our subordinates. And when our Soldiers don't live up to these standards, it's our duty to both correct and mentor them as they find their way.

While this awesome job sometimes calls for us to be tough, we also have the opportunity to empower our Soldiers to make smart decisions for themselves. Over the years, I've learned that telling Soldiers what they can't do, especially in their off-duty time, is often counterproductive. It's nearly a given that many of our Soldiers are going to engage in high-risk activities when they're not at work. We know this, and we must embrace the fact and move forward — not with the intent to stop them, but rather to help them understand how they can participate in these activities safely.

Our Army is realizing this concept through the Warrior Adventure Quest program, which has taken Soldiers on high-adrenaline recreational activities such as mountain biking, whitewater rafting, rappelling and caving in a safe, education-centered environment. As dwell time between combat tours increases, Leaders will need to find creative ways to incorporate similar programs and other educational and teambuilding initiatives like intramural sports into their training schedules. These positive pursuits build stronger and safer Soldiers by channeling their creative energy toward hobbies that fulfill twin goals of physical fitness and safety awareness.

This same creative energy is abundant in the videos submitted thus far during our second annual Peer to Peer Safety Video Competition, which runs through April 30. It's obvious from the videos we've received that our amateur moviemakers have had a lot of fun with the contest, and your Soldiers can too. As an added incentive, the top three entrants will share a prize purse of nearly $4,000 provided by the Better Opportunities for Single Soldiers program. Make a video, save a life and maybe make some money — it's really that simple. Contest rules and details are available on the USACR/Safety Center Web site (https://safety.army.mil), along with several innovative tools to assist you in developing and implementing safety and training programs geared toward your unit's needs.

Please stay hands-on and remember what's important — keeping those Soldiers you lead safe. I look forward to working with you, and thank you for all you do for our Band of Brothers and Sisters.

Army Safe is Army Strong!

MICHAEL EYER
Command Sergeant Major
U.S. Army Combat Readiness/Safety Center

WHEN LIGHTNING STRIKES

RETIRED MAJ. EMMA CLOPTON
Birmingham, Ala.

Spring is just weeks away and, as the weather gets warmer, most training activities will move outdoors. Numerous hazards are associated with outdoor training during the spring and summer months, most notably heat injury. Sometimes, however, Soldiers fall victim to a dangerous force of nature — lightning, which is just as lethal as heatstroke but much less predictable.

Of weather-related fatalities, only floods kill more people annually in the United States than lightning. According to the National Oceanic and Atmospheric Administration (NOAA), more than 400 people are stuck by lightning each year. About 60 of those strike victims die, and many more are left with permanent disabilities.

Although each of the U.S. armed forces usually reports some personnel- or equipment-related lightning strikes each year, the Army has the highest casualty rate. Military personnel, especially infantry and artillery Soldiers, are at risk for lightning injury and death due to the nature of their training and operational activities. Many of these activities take place outdoors in all types of weather and within lightning-prone areas such as the southern U.S. and the open deserts of Iraq.

Lightning-related incidents reported in the Army often involve a single strike that causes multiple personnel injuries. This is because exercises and operations frequently involve groups of Soldiers working as teams, and these clusters form a larger target. Examples of incidents where multiple injuries might result include lightning striking metal or wet equipment, flash lightning exploding from a target or lightning currents traveling along the ground.

Here are a couple of examples to illustrate this phenomenon. At Fort Irwin, Calif., three Opposing Force Soldiers were struck by lightning on a hilltop. Several years before that incident, eight Soldiers were injured at Camp Grayling, Mich., when lightning struck some trees 50 feet away. The Soldiers sought shelter under a tarp when the thunderstorm appeared and were hit when the lightning current traveled at ground level to their location. (For more examples, see the info box on page 6.)

There's no single action that eliminates the risk of lightning, but you can reduce your probability of being struck by following a few simple rules. For instance, avoid high-elevation areas, open fields, isolated trees, communication towers, flagpoles, open-top vehicles and water during thunderstorms. It

LIGHTNING BY THE NUMBERS

In 2008, 28 people in the U.S. died due to lightning strikes and hundreds of others were permanently injured. Of the victims who were killed by lightning in 2008:

- **100 percent were outside.**
- **79 percent were male.**
- **36 percent were males between the ages of 20 and 25.**
- **32 percent were under a tree.**
- **29 percent were on or near the water.**

For more information on lightning safety, visit the National Weather Service Web site at www.weather.gov/os/lightning/index.htm.

doesn't matter if the storm appears to be far away — thunder signals approaching lightning, and you should take cover as quickly as possible.

If a thunderstorm approaches and a building or closed-top vehicle isn't available, seek shelter under the smallest tree in a group of several large trees, but never under a single tree. Stay at least six feet away from the trunk to minimize the risk of a side strike. If you're caught in an open area without trees or other shelter, assume the lightning safety position: crouch with your feet as close together as possible with the heels together and place your hands over your ears. Do not lie flat on the ground!

If you're training or operating in the open and see lightning or hear thunder, use the "30/30 rule" to determine when to seek shelter. When you see lightning, count the seconds between the flash and thunderclap. If it's 30 seconds or less, seek shelter immediately. Then, wait at least 30 minutes after the last thunderclap before leaving your shelter. Don't be fooled by a blue sky, either. About 75 percent of lightning injuries occur very early or very late in a storm's life, and strikes have been recorded from as far away as 56 nautical miles.

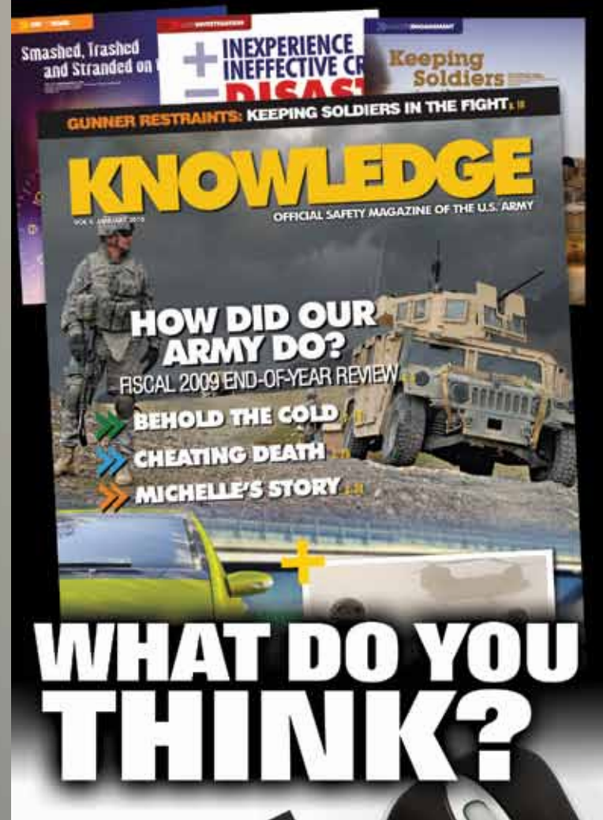
Leaders play a vital role in preventing lightning casualties among their Soldiers. During outdoor training missions, they should designate a weather guard to alert personnel of impending bad weather. Leaders also must decide beforehand when to modify or suspend outdoor training and where to seek shelter in the event of thunderstorm activity.

No one can control the weather, but you can control your risk of becoming a lightning casualty. Spring and summer thunderstorms are just around the corner, so be prepared when lightning strikes.

DID YOU KNOW?

Since fiscal 2002, two Soldiers have died and at least 25 others were injured due to lightning strikes, including:

- **A Soldier was struck by lightning while erecting a tent that overturned during a storm. The Soldier was taken to a medical facility, where he later died. Four other Soldiers were also struck, but none were seriously injured.**
- **A Soldier was killed when lightning struck his tent while on a camping trip. Three other Soldiers onsite were not injured.**
- **Three Soldiers were hospitalized when lightning struck a nearby tree as they attempted to erect a shelter to keep their equipment dry during a field training exercise.**
- **Three Soldiers were hospitalized after lightning struck near their observation point.**
- **A Soldier suffered burns after he was struck in the head by a bolt of lightning. The Soldier was dazed but coherent after the strike and recognized what had occurred. The Soldier was checked for injuries by a medic before being transported to the emergency room.**
- **A Solider suffered burns to his body after being struck by lightning while walking across an airfield tarmac. The Soldier did not have a pulse and was not breathing when he was found by a civilian, who revived him.**
- **A Soldier suffered a head injury after being struck by lightning while talking on a phone. The Soldier was sitting in a 5-ton vehicle during a severe thunderstorm and trying to contact his supervisor via land line when an electric current caused by lightning came through the phone.**



WHAT DO YOU THINK?

From January through March, **KNOWLEDGE** magazine is conducting a survey to determine whether we're meeting our readers' needs. Please help us out by taking a couple of minutes to answer a few simple questions at https://safety.army.mil/.

After all, this is your magazine. Shouldn't it contain the information you find helpful?

THE ENTIRE CREW HAS A VOICE

CHIEF WARRANT OFFICER 2 BRADLEY D. KUHN
B Company, 2-135th Aviation, General Support Aviation Battalion
Nebraska Army National Guard
Grand Island, Neb.

It was a typical mid-August afternoon in the Midwest. The mission was to transport National Guard Soldiers' civilian bosses to and from the training site. Murphy says a number of things can go wrong before an actual mishap occurs. Fortunately, in this case, a mishap didn't occur. However, it could have if the crew hadn't used their heads and spoken up.

The crew consisted of a 3,000-hour instructor pilot (IP), a roughly 300-hour pilot (PI) and two solid crew chiefs (FE) in the back. We were moderate on our risk assessment due to the IP being over the duty day. The mission was approved and we were on our way. The first three-quarters of the mission went flawless, aside from a few isolated thunderstorms, which wasn't unusual during the summer.

Our return flight to the training site was about a 200-mile trip. After paying for fuel, we checked the forecast on Weather Services International. There were two thunderstorms, one to the north and one to the south, located about midway from our trip. We talked as a crew and decided we could fly between them.

We took off at sundown and donned our night vision goggles. We could see lightning in the far distance, but we were well south of it. About midway through our flight, the storms started to converge on us. I gave flight watch a call, but there was no response. That's when I started looking for the nearest airport to land. We found one about 10 miles from our present position. All the while, our crew kept weighing the options as to our best course of action. The storm got worse — so bad we could hear the lightning through our integrated communications system.

It was at this point we had to make a decision. We could keep on going, hoping our destination was clear, or we could land at the nearest airport, which was about 10 miles away. The IP thought the weather was clear to the west and we should continue our flight. The FEs thought we should land at the airport and let it pass for the simple reason we didn't know for sure how the weather was to the west. We took the most conservative response and decided to land. On a five-mile final, we finally reached flight watch. They couldn't believe we were flying in that mess.

The moral of the story is to take the most conservative response. Many pilots respect what their crewmembers have to say, but some don't. The truth is, FEs are on the aircraft, too, and their lives are dependent on the decisions of the pilots. They should have a voice in the decisions involving the aircraft and crew. I remember reading in Flightfax about the CH-47D that crashed several years ago, killing 18 people onboard and destroying the aircraft. That story came to mind because the crew was continuing visual flight rules into decreasing weather conditions, just as we were. Stop and think of the consequences of your actions and then make the smart decision.

If forecasted weather is bad, don't fly or wait for it to clear. If you encounter unforecasted weather during the flight, be willing to turn around and go back, or land and wait it out. Regardless, every crew needs to be trained, equipped and prepared to operate under instrument meteorological conditions. The time to find out you are not prepared isn't when you punch into the clouds.

FIGHTING THE "Z" MONSTER

WARRANT OFFICER 1 WILLIAM VANDALSEM
Headquarters Detachment, Company I, 185th Theater Aviation Company
Mississippi Army National Guard
Gulfport, Miss.

Summer is approaching and many of us will be hitting the road for a vacation or long weekend trip. However, all too often, in the process of seeking "fun" we also find fatigue. We've all driven when we were feeling tired — perhaps falling victim to a bad case of "get-home-itis." If you've ever been driving down the interstate on a long trip and suddenly realized you couldn't remember the last few (or many) miles, you've driven fatigued.

Most of us are aware of the hazards of fatigue, which include inattention, daydreaming and even falling asleep. Despite that, we often still continue driving. It's not that we deliberately engage in dangerous activities; rather, it's that we don't correctly assess the hazards.

How do we avoid setting up ourselves to be the victim of a fatigue-related accident? We've already begun the five-step composite risk management (CRM) process by identifying the hazards. Although we know falling asleep at the wheel is bad, we sometimes lure ourselves into a false sense of security by saying, "It won't happen to me." However, the following symptoms of fatigue — heavy eyelids, frequent yawning, drifting across road lines and driving erratically — are red flags that we're headed for trouble. Beyond that, fatigue can cause us to see "things" in the road (highway hypnosis), daydream or feel irritable or fidgety. The probability we'll experience these effects depends on the length of travel, time of day and the amount of rest we've had.

We need to counter these effects by moving to the second step of CRM — assessing the hazards. We need to realize fatigue often affects our driving ability long before we're aware of it. It is important to understand that because fatigue-related crashes are often quite severe, as drivers fail to react quickly enough — or perhaps at all — to avoid a crash.

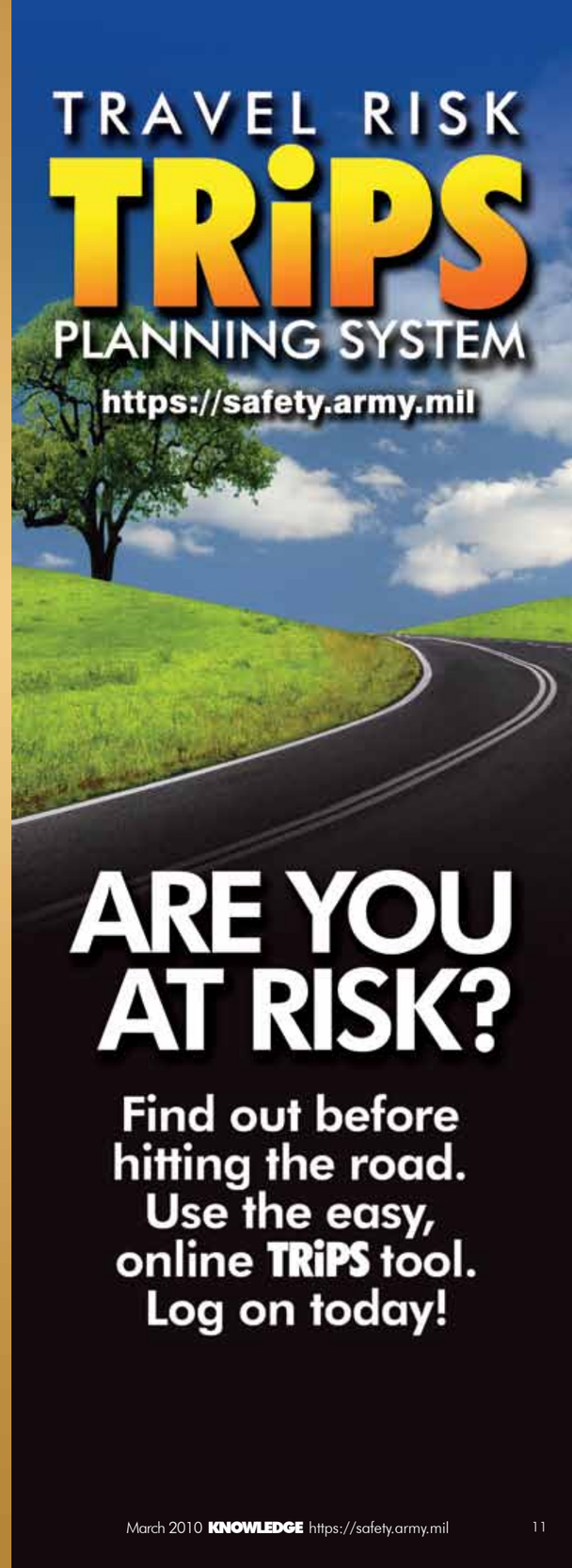
The third step of CRM is to develop controls. This process doesn't have to be as bad as it may sound. Mostly, it's just using a little common sense. Here are some suggested controls:

- Ensure you get a good night's sleep before a trip.
- Take a break every two hours and get out of the car.
- Drive in shifts if you aren't alone.
- Plan to stay overnight if traveling for extended periods.
- Avoid driving if you're taking any medications that cause drowsiness.
- Avoid driving when you'd normally be asleep (late night and early morning).
- Adjust your seat so it's in a good, upright position.
- Don't drink and drive (let's not compound the problem).

Next, there is the fourth step of CRM — implementing the controls. How do you do that? First, be honest with yourself about your abilities. Don't try to convince yourself that you can "make it a little farther" if you're feeling any of the symptoms mentioned earlier. If you do, you're an accident waiting to happen.

Finally, there is the last step — supervise and evaluate. How do you supervise yourself? Ask yourself how well you handled being fatigued while driving? Were you willing to accept being delayed on your trip to ensure your safety and that of others on the road? And how do you supervise others? Make sure your fellow Soldiers, Family and friends understand the risks involved in attempting to drive fatigued. Take time to mentor the younger, less-experienced drivers you know.

While fatigue affects all of us, we don't have to let it turn us into an accident statistic. We can use CRM to reduce our risks, help keep others safe and drive safely on that long trip home.



DYING TO TAKE OFF

CHIEF WARRANT OFFICER 2 ERIC JASON WILSON
C Company, 3rd Battalion, 158th Aviation Regiment,
12th Combat Aviation Brigade
Katterbach, Germany

There is a term in the aviation community referred to as "get-home-itis." The most experienced aviators are often willing to compromise the safety of themselves and their crew to get home. They'll disregard lower weather minimums and other hazardous risks just to get home.

The same type of sentiment exists in the medical evacuation (medevac) world. We call this attitude "get-them-to-the-hospital-itis." Army aviators are highly motivated and skilled warriors with an important mission to accomplish. However, this same motivation can be a double-edged sword. A professional Soldier/aviator wants to succeed in all missions, especially if that mission is to save a life. At times, this determination can cloud one's judgment. In other words, if a combat medevac pilot can't take off immediately to pick up an injured Soldier, then the pilot feels that the fate of the Soldier rests in his hands. That first "Golden Hour" is a critical time for a severely injured Soldier. The following event happened to me.

It was 3 a.m. and the medevac alarm went off. I had only been asleep in my rack a couple of hours after working a 14-hour duty day. The staff noncommissioned officer (NCO) reported we had a critical patient who had been pinned between two Strykers. It's amazing how fast an adrenaline rush can get the blood pumping and bring someone from a dead sleep to full consciousness.

I'll bet I was fully dressed, to include flight vest, in less than three minutes. I was the pilot for that day, so my job was to get the weather briefing. The weather was at our minimum requirements. The illumination was about 3 percent. While the pilot in command (PC) got launch authority from the commander, I ran out to untie the rotor blade and proceed with the run-up. In total, we were off the pad in a minimum of time after the initial call.

We reached the patient's location within five minutes. On our low recon, we found the site dry and dusty. To make matters worse, we also discovered a tight spot to land with a substantial upslope condition. As a crew, and with the PC's blessing, we determined this landing zone was far better than the other options. The medic sealed the deal when he said that time was a critical factor. The PC did a quick check of tabular data and confirmed we had more than 20 pounds of torque to play with. We used a high-angle-of-approach technique to stay above the dust cloud. Our landing was successful, and the dust cloud enveloped us just as the skids hit the ground. We weren't so lucky with our takeoff a few minutes later.

> "**BASIC** pilotage should have told me to **TRUST** my **INSTRUMENTS** and never fly **VMC** and **INSTRUMENT METEOROLOGICAL CONDITIONS** at the **SAME TIME.**"

After loading the patient and performing before-takeoff checks, we conducted a normal visual meteorological condition (VMC) takeoff. As soon as I pulled the collective, the helicopter was engulfed in a dust cloud. We couldn't see anything, so I lowered the collective to the full-down position. That is when the "get-them-to-the-hospital-itis" syndrome set in because we knew the Soldier in the back had serious injuries.

With little time, we decided an instrument takeoff was the best option. The PC began to call out the torque as I made a steady pull on the collective. We were immediately engulfed in dust again as we started up. The crew chief called out, "We're drifting aft, drifting aft, drifting aft!" At that point, I made a significant forward input to the cyclic. Not more than two seconds later, we were out of the dust cloud and on our way to the hospital.

It wasn't until the after-action report that we realized the seriousness of that situation. Basic pilotage should have told me to trust my instruments and never fly VMC and instrument meteorological conditions at the same time. We discussed this issue at the next pilot's call, and a crewmember made a comment about a common technique that some instructor pilots were using. He said because dust is accentuated under goggles, simply turning off the position lights would lessen the appearance of the dust cloud. None of us seemed to know this; however, on the next flight, we tried it and it worked. The dust was a lot lighter. Simple solutions like this aren't always in "the books." That's why we need to share our lessons learned.

Little THINGS COUNT

CAPT. ALAN B. MCCORD
Headquarters and Headquarters Company
1st Battalion, 104th Aviation Regiment
Pennsylvania Army National Guard
Johnstown, Pa.

I've been told many times in my Army aviation career that "it's the little things that will come up and bite you." While this bit of advice has served me well throughout my career and life in general, an accident that happened to a fellow aviator several years ago really drove this point home.

The Soldier, an experienced Army National Guard aviator and pilot for the state police, had just completed a Fourth of July flyover in an OH-58C that lasted less than two hours. After the flight, he left on his motorcycle to ride the 50 miles to his residence to partake in Independence Day activities with his Family.

The Soldier, an experienced and qualified motorcyclist, changed out of his flight suit and into civilian clothes. He then donned all of the required personal protective equipment, including a Department of Transportation (DOT)-approved full-face helmet, leather boots, gloves and jacket. He used bungee cords to secure his backpack, which contained his flight suit and other items, onto the seat of his Kawasaki sport bike. He then set out for home, but only made it eight miles before a bizarre accident dramatically and permanently changed his life.

I was assigned as the line of duty (LOD) investigating officer for the investigation into his motorcycle accident. I initially heard he was in a coma in our local medical center's intensive care unit. After receiving the LOD assignment, I began the investigation by visiting the hospital to check on the Soldier's condition and learn the details of his accident.

At the hospital, I found out he'd suffered a substantial traumatic brain injury (TBI) and was being kept in an induced coma to reduce brain swelling. His other injuries included a fractured wrist, lacerations, contusions and some slight road rash. None of the injuries, except for the TBI, was potentially life threatening. He was kept in the induced coma for 26 days after the accident.

I continued gathering information by interviewing the investigating police officer, who provided me with a copy of the Soldier's accident report. I also interviewed the sole witness to the accident who, by chance, happened to be a registered nurse. She had been on her way home from work when the accident occurred and provided medical assistance to the Soldier until paramedics arrived.

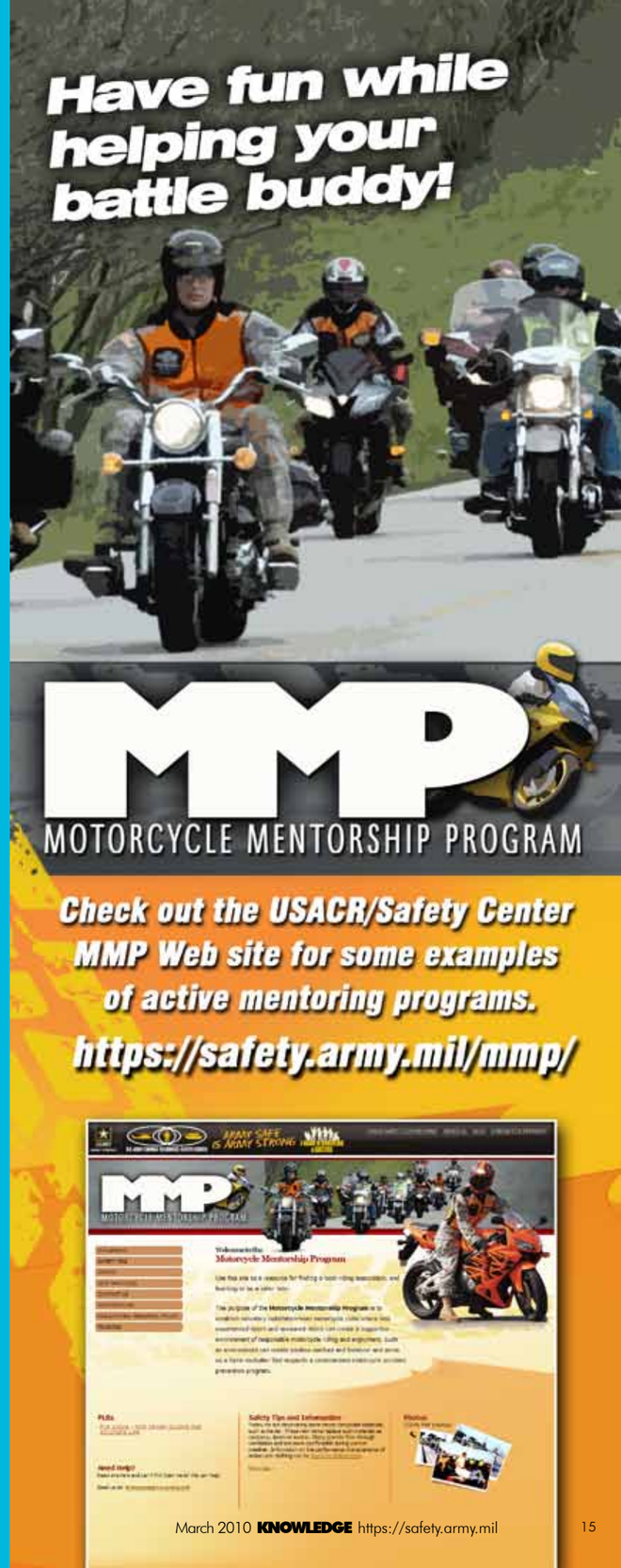
The investigating police officer estimated the Soldier had been traveling about 70 mph in a 65-mph zone on a four-lane divided highway when the accident occurred. He determined the accident resulted from the Soldier's backpack rotating down into the motorcycle's rear wheel while he was passing the nurse's vehicle. The backpack jammed the motorcycle's rear wheel, causing the Soldier to be vaulted off his bike. The police officer also told me he found the Soldier's helmet, with the chin strap still secured, lying next to the guardrail.

The nurse told me she was traveling the speed limit when the Soldier slowly passed her on the left. When he attempted to return to the right lane, it appeared to her the motorcycle's rear wheel hit an imbedded reflector in the center of the roadway. This, she believed, caused the Soldier to lose control and be catapulted from his motorcycle. She described him as looking like a "rag doll" bouncing down the highway. She saw his helmet hit the road once and then separate from his head. Then she saw the Soldiers' head, now minus the helmet, hit the road a second time before he came to rest.

After he'd been brought out of his induced coma, the Soldier was transferred to a rehabilitation hospital, where he began his long journey of recovery. Because of the severity of his TBI, he was never able to regain flight status in either the military or state police. He has since left the Army National Guard, but is still currently working ground duties with the state police.

What events led to the Soldier's motorcycle accident and the TBI that altered his life forever? Two "little things" were identified. One was the backpack he had bungee corded to the back of his seat, which rotated into his rear wheel and caused it to lock up. The other was the failure of his helmet to remain on his head during the accident. Was it haste, mechanical problems or just the wrong equipment for the job that caused these failures? Possibly all three, but most likely it was attention to detail — the "little things" — that initiated this accident's chain of events. If the backpack had been better secured to the motorcycle or had he used other means, such as saddle bags, to carry his gear, the accident probably wouldn't have happened. If his helmet, which was a quality DOT-certified piece of equipment, had remained on his head during the crash, he probably would not have suffered TBI. Was the chin strap secured tightly enough or was there a design flaw in the way the chin strap was constructed? All that is known for sure was that the Soldier was wearing the strap when the accident occurred.

This Soldier lost his flying career and could have died because "little things" comprised a chain of events that resulted in this accident and his injuries. The "little things" he overlooked had a huge impact on his life. How about you? When it comes to your safety, are you overlooking the "little things"?



back on the track

1ST LT. ERIK JOHNSON
210th Military Police Battalion
Michigan Army National Guard
Lansing, Mich.

What's the first thing you think when you see a former infantry sergeant sitting at a MILPO desk typing up personnel actions? That's right, "Bum knee."

Knee injuries are a common problem for all Soldiers, not just infantrymen. Day-to-day physical training puts stress on our knees, so we must take care of them. After all, if we're going to "run, run, run till the day is done," we should understand it will be the knees — our body's natural shock absorbers — that will carry us along.

Even paved roads have potholes, pebbles and other potential tripping and twisting hazards. Therefore, it should be expected that some Soldiers will, on occasion, injure a knee while running. Of course, a knee can be injured while performing any of the myriad tasks associated with soldiering.

Some symptoms of an injured knee are nearly universal. Pain, swelling and stiffness are commonly experienced; but victims of a knee injury may experience additional symptoms. For instance, the knee may "lock up." This occurs when loose pieces of cartilage reside in the knee. An injured Soldier may also feel and hear a grinding/crackling sensation. Such episodes are generally caused by the presence of torn cartilage or rough bone in the knee.

Should you notice any of these symptoms in your own knee, get to sick call and a doctor immediately. Waiting can only allow the problem to get worse. The doctor will explain the problem to you and guide you in how to resolve it. In addition, he will help you prevent further injury to your knee.

The following are three common knee injuries that plague Soldiers both at home and abroad:

Runner's Knee

When a Soldier is suffering from runner's knee, the smooth cartilage underneath the kneecap has been damaged. This condition starts as a softening of the cartilage within the knee. Gradually, wear and tear on the cartilage will cause it to roughen and crack. Pain, swelling and, perhaps, a grinding noise will result. This condition often develops over time due to repetitive force movements associated with running.

If you believe you are suffering from the early stages of runner's knee, you should limit the amount of stress you put on this area to allow time for healing. While your knee is healing, it's crucial you to avoid running downhill. Exercises that are performed with a bent knee should also be avoided. There

DID YOU KNOW?

Whether you're new to running or just getting back into a routine after a winter layoff, Military.com recommends the following tips:

- **Stretch for a week to loosen up stiff joints and connective tissue.**
- **Choose a nonimpact aerobic activity like biking, elliptical gliding, rowing or swimming to do when injuries are first felt. It is never a bad idea to cross-train in any of these activities every other day in place a running.**
- **Warm up properly and then stretch. Run nice and easy for about 5-10 minutes, then stretch once you are warm and the muscles and joints are more pliable. Never stretch "cold."**
- **Replace running shoes often.**

For more information on preventing running injuries, visit http://www.military.com/military-fitness/running/preventing-running-injuries.

are some exercises that can help rehabilitate a knee, but you should always consult a doctor first to prevent causing further damage.

Meniscus Tear

Meniscus cartilage bears the weight of the body above the knee. If a Soldier is bending low to pick up a heavy object, the meniscus will carry the weight of the body plus that of the object being lifted. Repeating this motion day after day puts a Soldier at risk for a meniscus tear.

Pain, swelling and a locking of the knee may result from a meniscus tear. A "clunking" sound from the knee may also be heard. A meniscus tear should be treated by a doctor before it degenerates into arthritis.

Knee Sprain

Ligaments in the knee may stretch due to a twisting action or similar injury. This stretching often results in a mild sprain. Of course, there will be some pain felt, as would be associated with any sprain, mild or severe. Swelling may also occur. A mild sprain might even cause the knee to feel unstable as you try to walk.

A severe sprain is the result of a torn ligament. Any violent injury can potentially cause a severe sprain. Pain and swelling will quickly appear, and expect the knee to become unstable. The most important thing to remember about all knee injuries is to seek medical attention immediately. Otherwise, your condition could deteriorate into a more permanent injury.

Time to Heal

During the time your knee is healing, perform only those exercises suggested by your doctor. Follow those instructions carefully. Begin the recovery regimen with gentle exercises. Starting out too hard too soon can only worsen your injury. You may move up to more challenging exercises as you regain strength.

Be sure to check with your doctor regarding any pain or swelling that won't go away. Most importantly, use the medicine prescribed by your doctor only as directed. Do not make the mistake of misusing a prescription to cloak pain during physical activity, as this will likely result in you aggravating your injury. What's worse, you'll have to face the aggravation of your first sergeant when you explain to him why your recovery schedule has been extended by several weeks. Good luck with that!

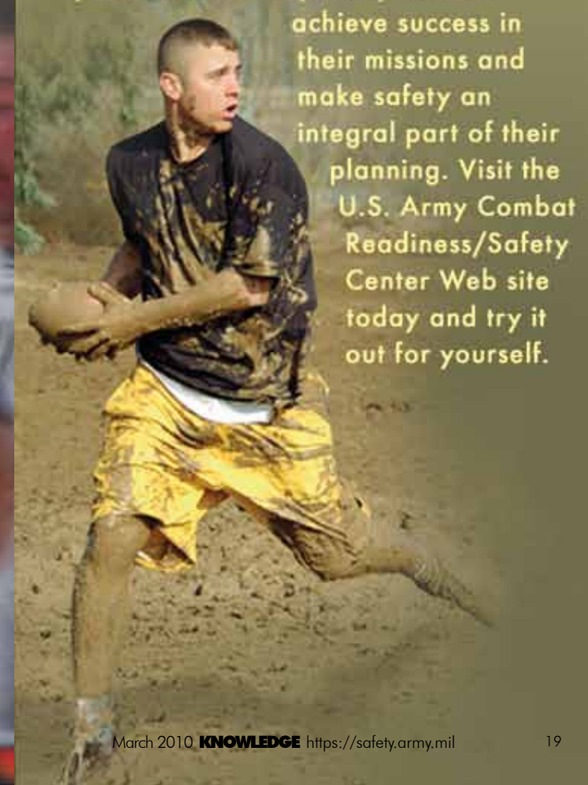
The goal is to get your knee back into shape before returning to running or any other strenuous exercise. The ultimate rule, however, is to always follow the instructions of your doctor, whose objective is to return you to health and duty. It's your duty to follow the doctor's orders. Doing so can help get you back on the track in no time.

FYI

Leaders are in the best position to prevent injuries. The Injury Prevention Through Leadership Course is entertaining and engaging and provides concise, evidence-based information and guidance Leaders can use to prevent many injuries. The one-hour, interactive online course teaches practical strategies to help Soldiers meet their fitness goals. Visit Combat Readiness University II at https://crc.learn.army.mil. Log in with your AKO ID and password, select the Courses tab, open the Joint Forces Safety Training folder and enroll today.

GRAT
GROUND RISK ASSESSMENT TOOL
https://safety.army.mil

The Ground Risk Assessment Tool is designed to aid in mitigating risk by reinforcing the five-step composite risk management process. Using this tool in concert with military decision-making processes will help Army Leaders achieve success in their missions and make safety an integral part of their planning. Visit the U.S. Army Combat Readiness/Safety Center Web site today and try it out for yourself.



What Was I Thinking?

CHIEF WARRANT OFFICER 2 CHRISTOPHER L. HOLSINGER
Eagle Army Airfield
Wonju, Korea

I was in my second deployment to the sandbox, but this tour was much different from the last. Although it was still just as hot and gritty, the flying tempo was definitely at a higher pace and we were doing a lot more with a lot less. I remember my boss saying we would probably go to war with the Army we have and not the Army we want. And, we did.

As I was walking back from the aircraft after my 13th consecutive day of flying, I got the infamous, "Hey you." I was handed a kneeboard packet and told we were picking up some Soldiers who had been put in the night before. I turned on my flashlight, did an about-face and thought there must have been a mistake as I skimmed over the packet. The orders declared the air mission commander as the pilot in command (PC) and I was his co-pilot. Anticipating my anxieties about this flight, he reassured me that this was a simple mission. We would be Chalk 4, following three other aircraft to the landing zone (LZ) to pick up the guys and drop them off at their forward operating base. Too easy.

Buoyed by my fortitude to never decline a mission, I agreed against my better judgment to make this trip even though I was exhausted. The crew briefing and aircraft pre-flight procedures were completed. However, I wanted more details for this operation, so I tried looking at postage-stamp-size black and white pictures of the LZ. The imagery looked as if clipped from an outdated newspaper. I laughingly remembered overhearing an experienced pilot say, "If all else fails, just fly to grid and land."

We started the aircraft and, as promised, were Chalk 4 out the gate. A few minutes later, we were on the downwind expecting a right turn, landing to the north. The PC was busy on the radio while I was playing "follow the leader." The global positioning system (GPS) looked about right and I saw the first aircraft start his approach to the ground, then the second and the third. They generated a huge dust cloud, and the winds from the west weren't helping me as we flew in a staggered-right landing formation. I tried to space off Chalk 3 and then looked at the GPS and noticed a signal from the ground unit awaiting pickup. That was nice, I thought, my own personal beacon. I spaced off the troops on the ground to my right and Chalk 3 to my left as the crewmembers called me clear down to the ground. Other than not seeing much of the ground, all seemed well enough.

My rate of closure and decent appeared normal as the aircraft touched down. Before we fully stopped, I heard a loud pop and the aircraft lurched forward and the front end started to drop. I picked up to a hover and saw through my left chin bubble a ditch 2 feet wide and about 3 feet deep with my front landing gear laying in it. The PC took the controls and we assessed the condition of the aircraft. I remember looking into the ditch and wondering, "Why would you stage your ground troops beside a ditch, knowing you were going to be picked up by a helicopter?"

After assessing the aircraft damage, we deemed the aircraft flyable with only a minor hydraulic leak. I secured the utility hydraulics and the PC passed the controls back to me. He then coordinated with the ground unit that the passengers would have to board one of the other aircraft.

The PC and I discussed our new plan. We decided to fly the aircraft back to our point of origin and have maintenance create a makeshift landing area from pallets. We hovered for about 30 minutes while maintenance assembled the pad. This gave us time to discuss how we would shut down the aircraft and the possibility of it rolling over. The landing and shutdown went relatively smooth. After we departed the aircraft, I saw a few of the antennas crunched between the aircraft and pallets, but that was unavoidable.

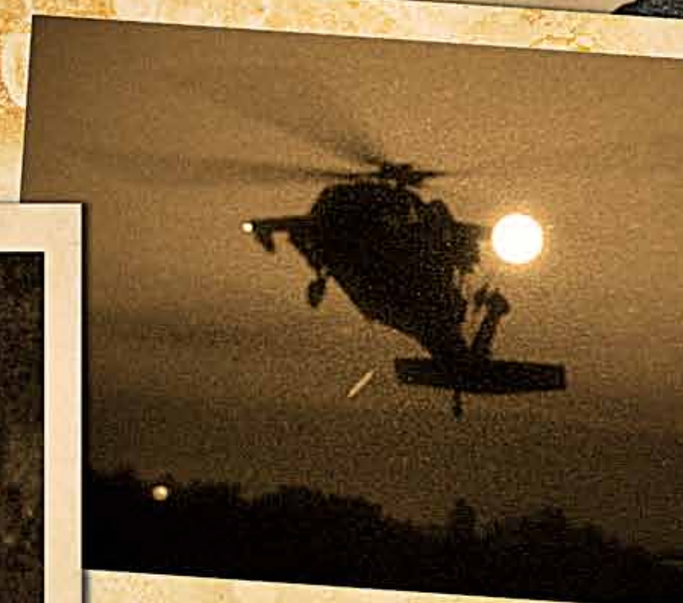
Lessons Learned

Looking back, this incident is still vivid in my mind. Some have told me it's just the cost of doing business. This "business" cost us a Class C accident. Although no one was hurt and the aircraft was up and flying in just a few days, I couldn't help but ask myself, "What was I thinking?"

War is tough, uncompromising and unforgiving. For all Soldiers, the rigors of battle demand mental and physical toughness and close-knit teamwork. Between the anxiety of battle, we spend long hours doing routine but necessary tasks in cold, wet weather, moving from position to position, often without hot meals, clean clothes or sleep. The potential for breakdown in discipline is always present. In my case, fatigue combined with pressure felt to fly — either real or perceived — was a dangerous combination. I failed to admit to myself how exhausted I was and that everyone has limits. This demonstrates the importance of establishing firm personal limits for the go/no-go decision and then sticking with the decision once made.

I also fell into the complacency trap. I let down my guard by trusting the ground unit to guide me to a safe landing area.

Complacency probably is the biggest threat we face, even in combat, so we continually must be aware of its presence and strive to combat it effectively. The bottom line is that aviation is an unforgiving business, and a moment of inattention can lead to disastrous results.



WHERE WAS CRM?

CHIEF WARRANT OFFICER 4 JOEL GORDON
Detachment 51, Operational Support Airlift
Fort Lewis, Wash.

It was an average summer day in August 2008. I was halfway through my shift when the State Patrol Communications Center (SPCC) advised of a head-on collision involving injuries on a heavily traveled highway in northeastern Washington state. As a state trooper with the Washington State Patrol (WSP), I was quite familiar with the dangers associated with this two-lane road. I advised SPCC that I was en route and proceeded to the scene running "code" (lights and siren going).

As I neared the scene, both north and southbound traffic was backed up nearly a quarter of a mile. Fire and emergency medical personnel preceded me to the scene and were working to extricate the driver of a small passenger car. The crash scene was like many I had seen before. Physical evidence showed the small passenger car was traveling north and then left the roadway to the right. The driver appeared to have overcorrected and crossed into the southbound lane, colliding with a full-size SUV. Fortunately, the SUV's driver and passenger were wearing their seat belts and their air bags deployed. Both suffered only minor injuries.

The relevance of this story begins when I approached the small passenger car. Fire personnel used the Jaws-of-Life to open the driver-side door and placed the driver onto a back board. The male driver appeared conscious and alert. His head was bleeding and he had a suspected broken wrist. The driver's hair was cut short and he displayed an obvious military bearing. I immediately knelt beside his head and asked, "Are you a Soldier?" He answered with a shaken, "Yes, sir." As I spoke to him, I noticed the telltale signs of impairment (bloodshot, watery eyes; slurred speech; and a strong odor of intoxicants). I asked the Soldier how much he had to drink. Before responding, he began to sob and said, "I'm sorry, sir."

As medics continued to prepare him for transport, the Soldier repeatedly inquired if the other people were OK. I reassured him of their status, trying to provide some relief. I continued my investigation, asking the Soldier questions about the vehicle he was driving, his license status and general inquiries as to what he remembered happening. All the while I was slipping in questions about his military service.

What I found out was deeply saddening. The Soldier was a guardsman recently back from a tour in Iraq. Prior to deploying, he was cited for a violation which involved a collision in a neighboring state. The Soldier failed to respond to the minor infraction, resulting in the suspension of his license. Even upon return from Iraq, the Soldier never contacted the court to adjudicate the matter. In the meantime, the Soldier stated he had resorted to alcohol as a means to escape some personal issues.

The car he was driving belonged to his girlfriend's father. Upon talking with the owner, he stated he never gave permission for the Soldier to operate the car, which was not insured. As far as the collision details, the Soldier stated he "dozed off," resulting in the vehicle leaving the roadway. As the vehicle rolled across the rumble strips, the Soldier said he "woke up" and overcorrected. The vehicle did not have air bags, and the force of the collision resulted in a breach of the occupant area. The steering wheel was forced into his chest as the left-front part of the vehicle crumpled inward. It was clear to me that wearing a seat belt saved his life.

The Soldier admitted he had been drinking most of the day and should not have driven the car. A Portable

Breath Test indicated his blood alcohol concentration was twice the legal limit of .08. Based on all the facts, the Soldier was placed under arrest for driving under the influence, driving while license suspended and operating a motor vehicle without liability insurance. A legal blood draw was performed in the back of the ambulance. Prior to leaving, the Soldier shook my hand and said, "I'm really sorry, sir."

This was not the first time I had to enforce serious traffic offenses on military personnel. But for some reason, this young Soldier made a lasting impression on me. My understanding of accidents is simple. Each one is a caused occurrence — a chain of events leading to an end result. From beginning to end, the events are connected like links in a chain. If, at any time, a link is broken, the accident is prevented. Just as in this case, if any of the sequence (links) of events had been broken, this Soldier would not be facing legal and medical problems.

As a graduate of the Aviation Safety Officer Course (ASOC), I found myself applying the steps of composite risk management (CRM) to this case. What if this Soldier had identified the hazards of driving drunk? What if he'd assessed the dangers he posed to himself and other motorists? What if he'd thought about the legal trouble he'd get into driving on a suspended license in an uninsured car? If he had, maybe he wouldn't have found himself being cut out of a wreck while asking me if the people in the other car were all right.

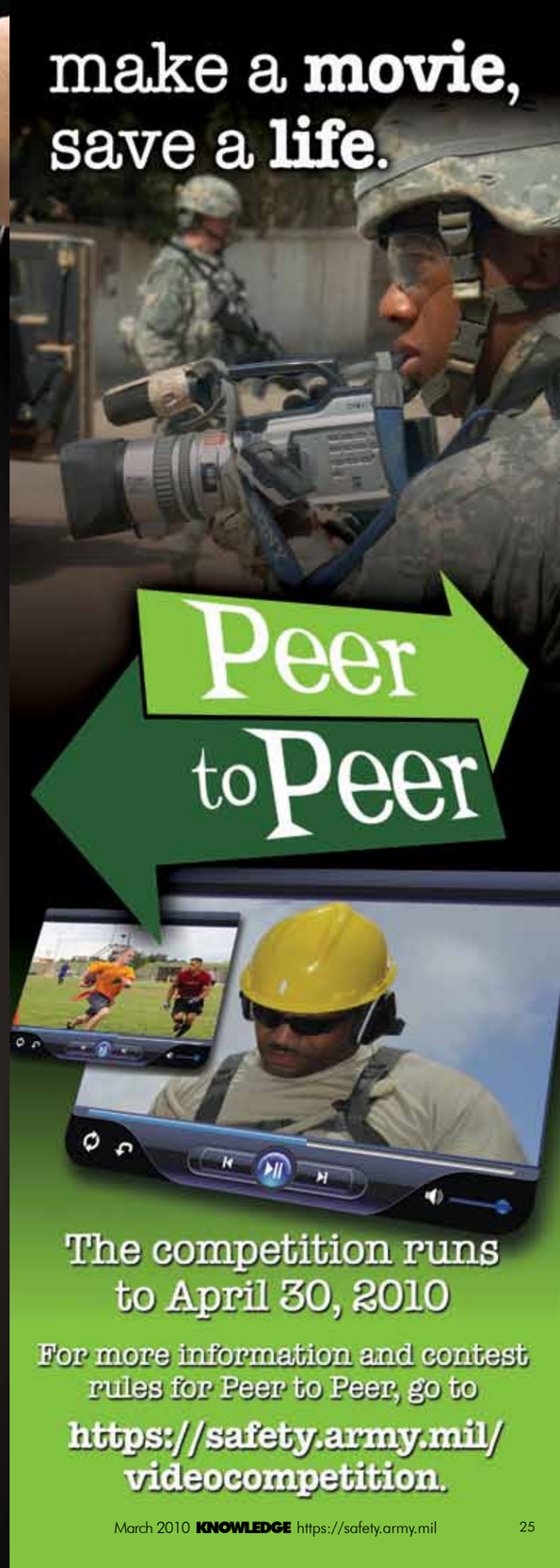
Fortunately, no one died and the Soldier had plenty of time to do the final step of CRM — supervise and evaluate — while recovering from injuries and facing legal actions. What kind of grade do you think he gave himself?

How about you? What kind of grade will you get the next time you're drinking and thinking about getting behind the wheel? Why not avoid this Soldier's mistakes and manage the risks with CRM before they end up managing you.«

Editor's note: In addition to being a 15-year veteran with the Washington State Patrol, the author is currently on an AGR tour, assigned as a unit safety officer and C-12 pilot in the Washington Army National Guard.

"**FROM** beginning to end, the **EVENTS** are **CONNECTED** like **LINKS** in a **CHAIN.** If, at any time, a **LINK** is **BROKEN**, the **ACCIDENT** is **PREVENTED.**"

make a **movie**, save a **life.**



The competition runs to April 30, 2010

For more information and contest rules for Peer to Peer, go to

https://safety.army.mil/videocompetition.

VERTIGO — It Can Happen to You

CHIEF WARRANT OFFICER 5 RALPH FERRELL
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Fort Belvoir, Va.

I've heard the vertigo stories: "It feels like you're whirling in circles or in a constant angle of bank, unable to tell the difference between up and down." I, however, had never experienced this sensation of spinning … until now.

The mission was simple. We flew from Fort Campbell, Ky., to Memphis (Tenn.) International and returned with the parts the maintenance section needed. The weather that day was gray, rainy and overcast, with ceilings at 1,500 feet and visibility varied between one and two miles. The weather was predominantly like this en route to the destination.

On the runway, I received my initial clearance for a runway heading takeoff climb to 5,000 feet. The takeoff was uneventful and upon reaching 5,000 feet, Fort Campbell departure cleared us for an initial heading change and a frequency change to Memphis Center. This was where the nightmare began.

I transferred the controls to the co-pilot so I could work the radios and told him to maintain 5,000 feet and increase his airspeed to 120 knots. Just as I looked down to tune the radios, I felt a sudden cyclic climb that pushed me down in my seat and forced my head toward the center console. This got my attention and I immediately snapped my head back up and asked what was going on. To my surprise, I heard, "Oh, wrong way," followed by another rapid cyclic input in the opposite direction. I couldn't believe what was happening. The resulting zero G force was all it took to instantly induce a severe case of vertigo in both of us. (What I didn't know until later was the co-pilot had applied excessive cyclic inputs to adjust airspeed.)

Realizing both of us had vertigo, I took the controls and immediately tried to focus on the instruments to ascertain exactly where we were in space. The rate of descent was instantly apparent as I watched the altimeter spin past 3,500 feet (well over 1,000 feet per minute). I couldn't believe it, my brain and hands were incapable of communicating, and everything I did to control the aircraft seemed to make the vertigo worse.

After what felt like minutes, I did my best to ignore the mixed signals my brain was giving me and was finally able to arrest our descent at 2,000 feet. I stopped our rate of descent, but that did not stop the vertigo sensations. As I leveled off at 2,000 feet, I stared at my instruments in hopes of regaining my sense of equilibrium, but every movement of the aircraft induced more vertigo. I just could not shake the sensation of vertigo and finally contacted Fort Campbell approach for vectors back for landing.

> "**ONE** of the most **DIFFICULT** tasks in **INSTRUMENT** flight is to **TRUST** your instruments and **IGNORE** what your **SENSES** may be **TELLING** you."

What did I learn from this event? One of the most difficult tasks in instrument flight is to trust your instruments and ignore what your senses may be telling you. I was never more mentally exhausted than after that flight and have, fortunately, never again experienced such a severe case of vertigo.

LEADERSHIP — IT'S WHAT'S FOR SAFETY

RONALD K. LANE
Installation Safety Office
Fort Knox, Ky.

Over the years, Leaders have set the example for others to follow and decided the punishment for those who didn't. Leaders have made the standards of behavior known to those serving under them so there is no question about what is expected. Leaders set standards for how they will conduct operations, support and even their personal lives.

But in day-to-day actions, traditional Leaders can't be everywhere. And that leaves the question, "Who's really a Leader?" Everyone acknowledges those in command positions, but what about others? How about you, private? Are you a Leader? You bet!

A Leader is not just someone in a designated position, but anyone who has influence over the actions of others. If Pvt. Jones influences Pfc. Smith to wear his seat belt in his car, he's a Leader. If he tactfully lets Spc. Wilson know that what he's about to do is not the best decision and Wilson modifies his decision to do it better, Jones is a real Leader. He's got potential.

Let's examine what made Jones a safety Leader.

His squad Leader, Sgt. Davey, talks to him all the time and has become well respected by his Soldiers. Davey knows what his Soldiers like and don't like; he knows what they plan for their weekends and tells them if they're contemplating bad choices. He knows the standards for the tasks his squad has to accomplish and makes sure his Soldiers know and strictly adhere to those standards. When someone takes an (acceptable) shortcut, he makes sure they do it properly and understand taking the wrong shortcuts can end up hurting or even killing someone. Squad Leaders like Davey are perhaps the most important link in the safety chain because they are the Leaders who work directly with the most Soldiers. Jones sees Davey and emulates him.

Davey follows the directions of his platoon sergeant and platoon leader, who also must meet standards. They know they have only so much time to get a lot done. However, they also know that a task done wrong could lead to an accident that would cost them time and potentially degrade their mission capability by loss of equipment and/or manpower.

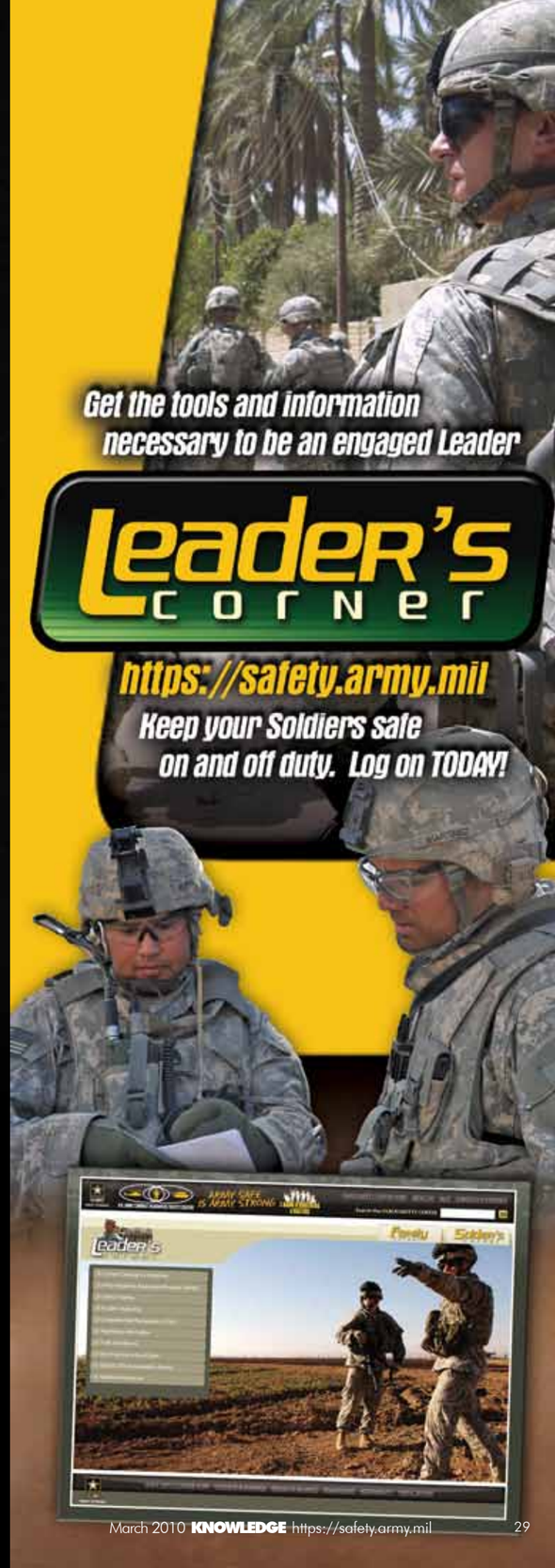
The platoon sergeant and platoon leader follow the guidance given to them by the first sergeant and company commander. They, in turn, are following guidance from the battalion commander and command sergeant major and so on. Everyone has a Leader above them. Even the president has to live with the knowledge the American people will decide his future term in office.

Safety is by nature a top-down program with standards set by the organization's ranking Leader. That Leader lets his subordinates know what is expected by words and deeds. Notice that both words and deeds are required.

Words alone are like shooting blanks; they make a lot of noise and smoke, but do nothing to the target. Deeds are the bullets that punch holes in the target or defeat the enemy. Without the deeds that back up the words, everyone in the chain of command knows the words are only for show in case something goes wrong. They, and the Soldiers beneath them, know the passion for the program is really not there, violated standards really don't matter and even a little reporting dishonesty is OK as long as the boss looks good and has plausible deniability.

Too many people still think that safety takes a backseat to effective operations. However, good Leaders know that a safe unit is more effective in combat and training because of reduced equipment damage and fewer lost or injured Soldiers. Good Leaders make safety "real" by setting the example in their own life and work. They hold their subordinates and buddies to the standards for the task at hand and also hold them accountable for meeting them.

Good Leaders — both in designated positions of leadership and Soldiers who care enough to protect their comrades — abound in our Army. Good Leaders, regardless of rank, use safety as one of many tools to conduct more successful operations and increase mission effectiveness. Never forget — an Army safe is an Army strong!



Heading for a FALL

JAMES (AL) BROWN
G5
U.S. Army Combat Readiness/Safety Center
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Many of us are guilty of it — trying to "hop" a ladder a few feet to the side instead of climbing down and moving it the proper way. Or maybe you've done the suicide lean — extending your body as far to the side as possible to get to a spot that's just out of reach. While you may have successfully completed these dangerous maneuvers in the past, chances are you're heading for a fall.

DID YOU KNOW?

Each year in the U.S., there are more than 164,000 emergency room-treated injuries related to ladders.

Each year, thousands of workers are injured on ladders. The three most common causes for these accidents are ladders being in poor condition, using the wrong type of ladder for the job or using the ladder improperly. A poorly designed, maintained or improperly used ladder may collapse during use and cause the Soldier or employee to fall.

If you're working on a ladder or other elevated platform, make sure you know the requirements for using them safely. The U.S. Consumer Product Safety Commission (CPSC) offers the following information to help prevent injuries.

Types of Ladders

There are many types of ladders on the market. The first thing you must determine is how the ladder will be used. If it is intended to be portable and used by one person, it fits into one of the three basic categories: stepladder, single ladder and extension ladder.

Portable stepladders longer than 20 feet shall be equipped with a metal spreader or locking device of sufficient size and strength to securely hold the front and back sections in the open position. Single ladders longer than 30 feet and extension ladders longer than 60 feet should not be used.

Other key considerations when selecting a ladder are the duty rating, which determines how much weight it will safely support, and the type of material from which it is made. There are five different official ratings, which include your weight plus what you carry, set by the American National Safety Institute (ANSI). ANSI codes also have an established duty rating, which

MOVING UP

When using a ladder, follow these tips from the U.S. Consumer Product Safety Commission:

- **Make sure the weight your ladder is supporting does not exceed its maximum load rating (user plus materials). There should only be one person on the ladder at any time.**
- **Use a ladder that is the proper length for the job. Proper length is a minimum of 3 feet extending over the roofline or working surface. The three top rungs of a straight, single or extension ladder should not be stood on.**
- **Straight, single or extension ladders should be set up at about a 75-degree angle.**
- **All metal ladders should have slip-resistant feet.**
- **Metal ladders will conduct electricity. Use a wooden or fiberglass ladder in the vicinity of power lines or electrical equipment. Do not let a ladder made from any material contact live electric wires.**
- **Be sure all locks on extension ladders are properly engaged.**
- **The ground under the ladder should be level and firm. Large, flat, wooden boards braced under the ladder can level it on uneven or soft ground. A good practice is to have a helper hold the bottom of the ladder.**
- **Do not place a ladder in front of a door that is not locked, blocked or guarded.**
- **Keep your body centered between the rails of the ladder at all times. Do not lean too far to the side while working.**
- **Do not use a ladder for any purpose other than that for which it was intended.**
- **Do not step on the top step, bucket shelf or attempt to climb or stand on the rear section of a stepladder.**
- **Never leave a raised ladder unattended.**
- **Follow the instruction labels on ladders.**

identifies the proper portable ladder for the conditions under which it can be safely used. (For more on duty ratings, see the information graphic below.)

Ladders commonly come in three materials: aluminum, wood and fiberglass. Aluminum is the most durable; however, it will conduct electricity, making these ladders dangerous to use around electricity. A wood ladder will not conduct electricity, but it can rot. A rotted ladder is a safety hazard. Fiberglass is the best combination of durability and non-conductivity. Unfortunately, it's also the most expensive.

Proper Use of Ladders

Even a good ladder can pose a serious safety hazard when used improperly. Occupational Safety and Health Administration (OSHA) standards require the following safety precautions for ladder use:

- Ladders should be placed with a secure footing, or they should be lashed or held in position.
- Ladders used to gain access to a roof or other area should extend at least 3 feet above the point of support.
- The worker should always face the ladder when climbing up or down.
- The base of the ladder should be placed 1 foot away from the support for every 4 feet of length. This is a simple process that can actually save lives; remember that falls are the No. 1 cause of death.

Ladder Inspections

Have you ever had someone ask you for documentation of your ladder inspections?

FYI

If you need additional info on ladder safety, you can find it in Occupation Safety and Health Administration (OSHA) Regulation 1920 in sections 1910.25, 1910.26 or 1910.27. For more information, check out Safety and Occupational Health on the U.S. Army Combat Readiness/Safety Center Web site at https://safety.army.mil/.

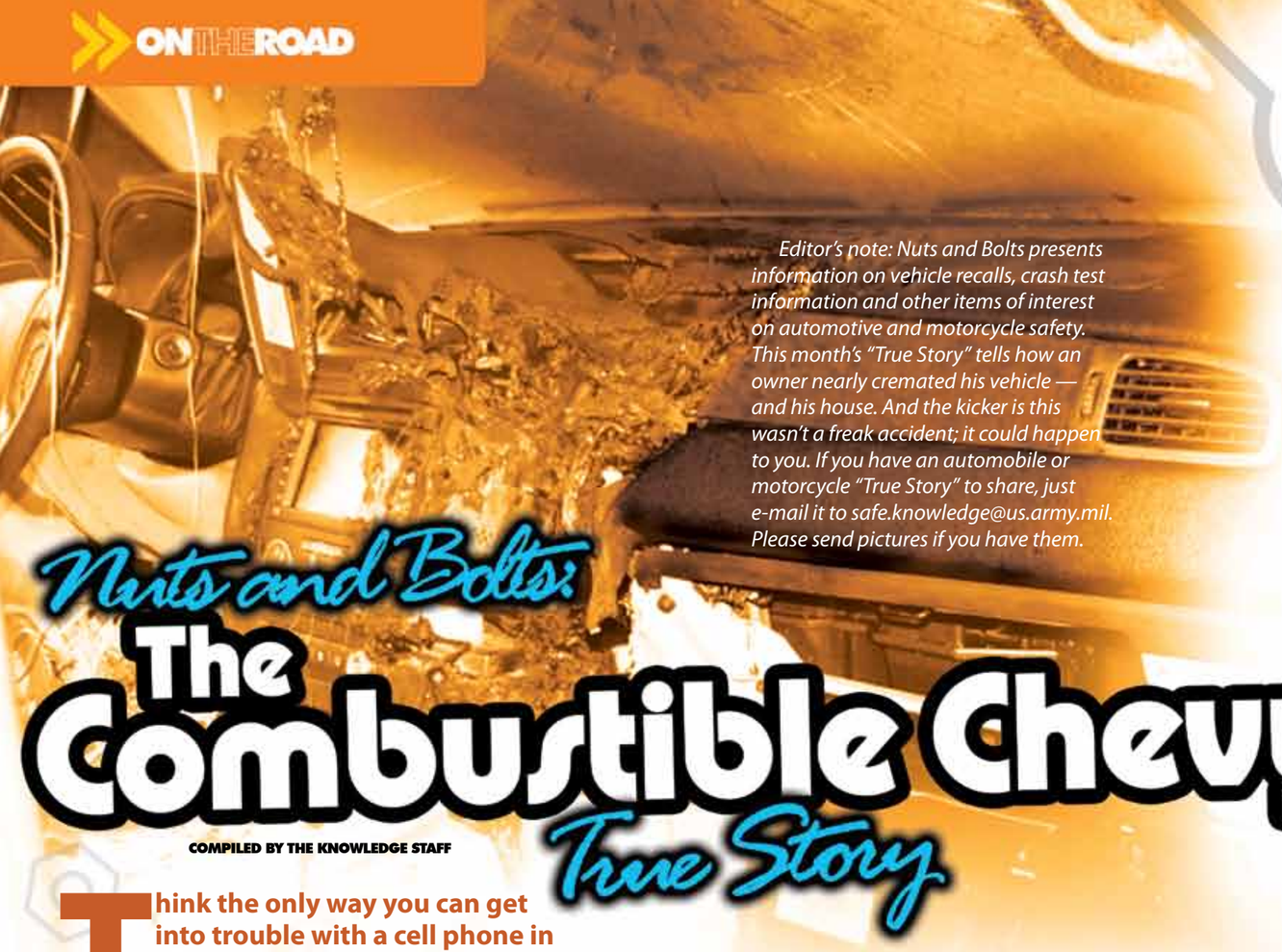
Actually, a ladder inspection is not a complicated process for a person trained in what to look for. As Soldiers, we are told to keep our equipment in good condition at all times. OSHA has the same requirement when it comes to ladders. Ladders should be inspected frequently, and those with defects should be withdrawn from service for repair or destruction and marked as "Dangerous, Do Not Use." Using a damaged or faulty ladder can lead to falls. You should also only choose ladders with the Underwriter's Laboratory (UL) seal.

Whether you're cleaning gutters or finally taking down those Christmas lights, at some point, most of us will find ourselves atop a ladder. Make sure you pick the right ladder for the job and maybe someone won't have to pick you up off the ground.

Editor's note: Do you have a comment, question or article suggestion for the U.S. Army Combat Readiness/Safety Center's workplace safety team? Contact us at safe.workplace@conus.army.mil.

LADDER DUTY RATINGS

TYPE:	Type IAA	Type IA	Type I	Type II	Type III
CAPABLE OF SUPPORTING:	375 pounds	300 pounds	250 pounds	225 pounds	200 pounds
RELATED USE:	Extra heavy duty industrial	Extra heavy duty industrial	Heavy duty industrial	Medium duty commercial	Light duty household



Editor's note: Nuts and Bolts presents information on vehicle recalls, crash test information and other items of interest on automotive and motorcycle safety. This month's "True Story" tells how an owner nearly cremated his vehicle — and his house. And the kicker is this wasn't a freak accident; it could happen to you. If you have an automobile or motorcycle "True Story" to share, just e-mail it to safe.knowledge@us.army.mil. Please send pictures if you have them.

Nuts and Bolts: The Combustible Chevy

True Story

COMPILED BY THE KNOWLEDGE STAFF

Think the only way you can get into trouble with a cell phone in your vehicle is talking or texting while driving? Guess again.

Anh T. Pham, chief of safety for the Air Force's 61st Air Base Wing, Los Angeles Air Force Base, points out a danger few drivers are aware of. According to Pham, an iPhone charger/docking station plugged into a Chevrolet Suburban's car outlet overheated and started a fire while the vehicle was parked in a residential garage. The owners of the vehicle were fortunate that they accidentally found the fire at 11 p.m. before going to bed and before it spread to the house.

As electronics have proliferated in our lives, it is not unusual to find multiple 12-volt receptacles in some vehicles. Pham said his personal Suburban has five outlets available, and he routinely left his cell phone and portable GPS charger/converter units plugged in. This fire and what could have been the tragic consequences made him discontinue that practice.

When leaving your vehicle unattended, ensure you unplug all charger/converter units.

How Safe is Your Ride?

Got a nice, new, shiny piece of Detroit steel parked in your driveway? How about a car with a foreign nameplate like Volvo, Mitsubishi or Nissan? Think as long as you get your periodic maintenance done your car is "bulletproof"? Well, the truth is, as good as cars are engineered today, some still roll out of the factory with problems that may not only be frustrating but, in some cases, dangerous.

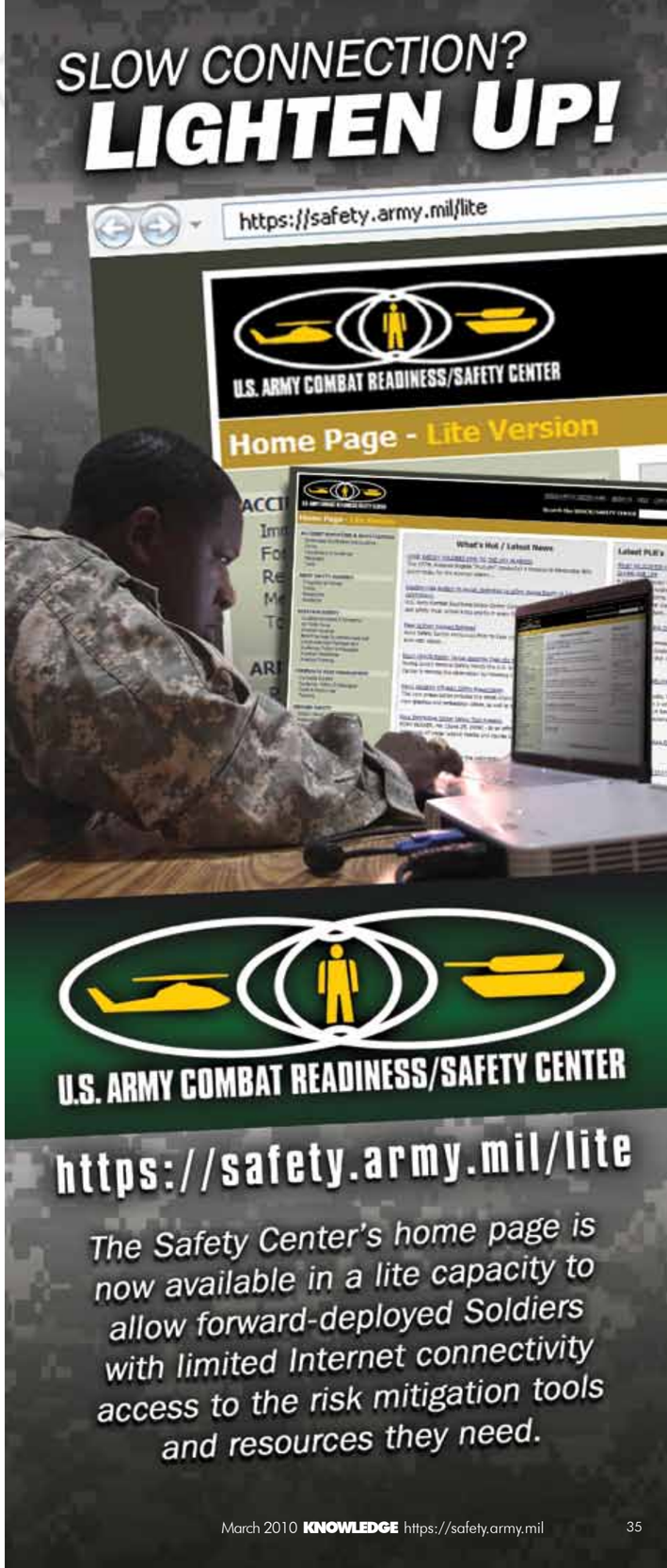
Want some examples? How about Dodge's 2009-2010 Challenger and Charger or the 2009-2010 Chrysler 300? Did you know almost 13,000 of these cars were produced without having a front spindle nut installed? Imagine yourself going down the road and the wheel coming off your vehicle. Bet that would ruin your day.

However, the problems don't stop there. For example, Mitsubishi's 2008-2009 Lancer Evolution, Ralliart and turbocharged Sportback Ralliart suffer a vibration problem that could crack a fuel line and cause an engine fire. Imagine what that would be like. And there are plenty more recalls on vehicles you may have sitting in your driveway today.

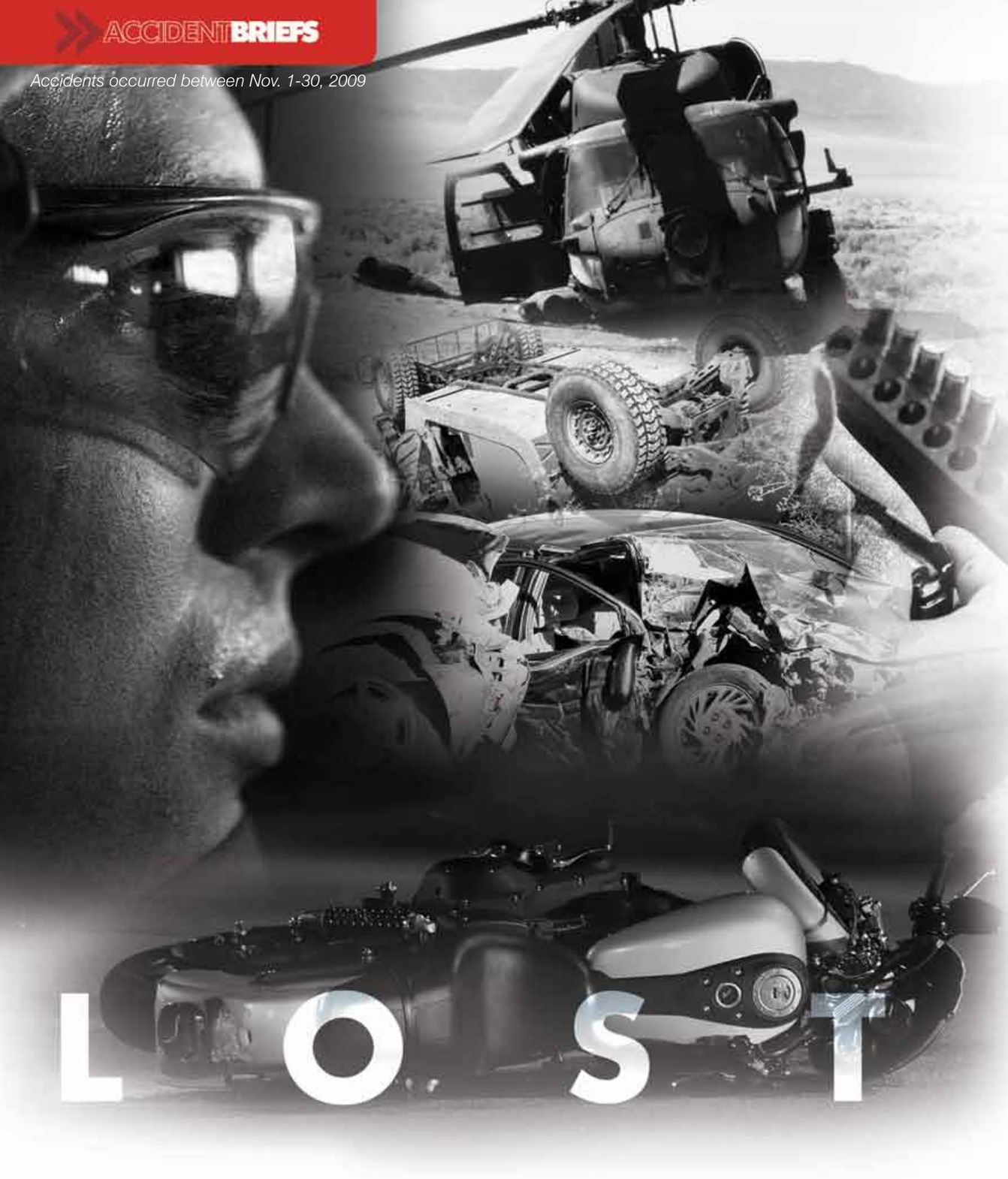
But how would you know? Sure, the factories notify owners; but what if you're not the original owner? Or, what if the problem happens before the manufacturer can reach you through the mail?

There is a quicker way to find out if your vehicle may be about to take you on a ride you don't want to go on. The National Highway Traffic Safety Administration provides detailed recall information online at http://www-odi.nhtsa.dot.gov/. Look under the "Defects and Recalls" section on the Web site and click on "Search our recall database." Once you do, you'll see a tab for the "Type" of recall. Click on that tab and choose whether you want to search for recalls on vehicles, equipment, child restraints or tires.

The following tabs, "Model Year," "Make," "Model" and "Component" allow you to narrow your search to a specific vehicle. And you won't just find recent models. For those of you who drive "golden oldies," the database goes all the way back to 1966! So whether you drive a 1968 Ford Mustang GT 390 Fastback, a turbocharged Mazda RX-8 or a Nissan Quest minivan, the information to keep you and your Family safe is at your fingertips.



Accidents occurred between Nov. 1-30, 2009



AVIATION

CH-47F

CLASS E

- The crew was slingloading ammunition weighing about 7,000 pounds. During departure, with the hooks in the ARM position, the center hook inadvertently opened, followed by cautions from the warning panel. No crewmember released the load, which fell to the ground. Ground personnel recovered the slings and reported no damage to the load. Postflight found the winch control grip had failed. *Late report*

OH-58D(R)

CLASS A

- The crew had departed in a flight of two to conduct a range test fire when one of the aircraft crashed, resulting in the deaths of the two crewmembers.

UAS

MQ-1B

CLASS A

- The aircraft operator was flying the system back to the airfield when the stability augmentation system disengaged during descent. The unmanned aircraft (UA) entered a flat inverted spin and crashed, destroying the system.

RQ-7B

CLASS C

- The UA experienced a generator failure during flight at 12,000 feet mean sea level, resulting in the loss of control, and crashed.

GROUND

ACV

CLASS A

- A Soldier was killed in a Mine Resistant Ambush Protected vehicle rollover accident. The Soldier was serving as the gunner when the vehicle overturned into a wadi, pinning him underneath. The driver and a passenger received minor injuries.

Other

CLASS A

- A Sailor was fatally injured when the nontactical government vehicle he was riding in was struck head-on by an Army-leased nontactical vehicle driven by an Army contractor. At the time of the collision, the contractor was attempting to pass a convoy. Both drivers suffered unreported injuries.

Personnel Injury

CLASS A

- A Soldier was snorkeling in shallow water when Family members lost sight of her. When her spouse recovered her body, she was unresponsive. The Soldier was pronounced dead at the local hospital.
- Two Soldiers drowned while attempting to recover a container that slid into a river during a drop mission. The first Soldier went into the water to recover the container and

ARMY AVIATION LOSSES Fiscal 2010

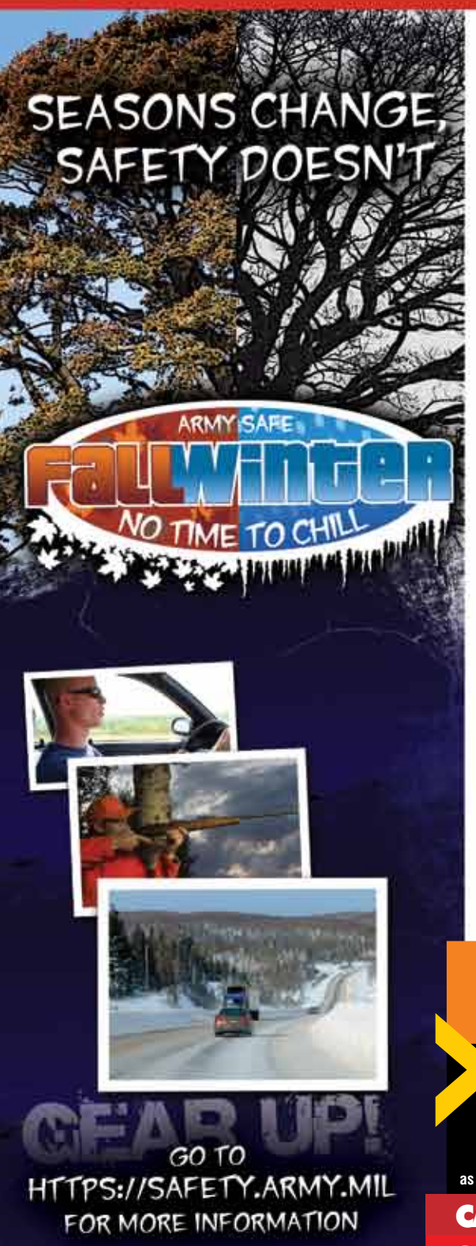
as of Feb. 1, 2010

	Class A/Fatalities
ATTACK	0/0
RECON	1/2
UTILITY	2/1
CARGO	1/0
TRAINING	0/0
FIXED-WING	1/0
UAS	2/0
TOTAL	7/3

ARMY GROUND LOSSES Fiscal 2010

as of Feb 1, 2010

	Class A/Fatalities
AMV	5/3
ACV	2/2
PERSONNEL INJURY includes weapons-handling accidents	8/9
FIRE/ EXPLOSIVE	0/0
PROPERTY DAMAGE	0/0
TOTAL	15/14



was caught in the current. The second Soldier drowned while trying to save the other Soldier.

DRIVING

POV

CLASS A

- A Soldier was riding in the front seat of his privately owned vehicle (POV) when his wife turned left in front of an approaching vehicle. The vehicle struck the passenger side of the Soldier's POV, fatally injuring him.
- A Soldier was driving his POV when he lost control, crossed the opposing lane, struck another vehicle and pushed it into a rock wall. The Soldier was fatally injured.
- Three foreign military student officers were returning from off-site training when their vehicle drifted off the shoulder of the road and struck a dump truck. The impact fatally injured the foreign officer riding in the backseat.
- A Soldier was driving his POV when he lost control, clipped a POV in the lane to his right and then stuck an oncoming van. The van then collided with the car that had been clipped, killing a Soldier riding in the backseat.

ATV

CLASS A

- A Soldier was riding as a passenger on an all-terrain vehicle (ATV) when the operator failed to negotiate a turn, throwing the Soldier off the ATV. The Soldier was not wearing a helmet and suffered fatal injuries.

POV DRIVING LOSSES Fiscal 2010

as of Feb. 1, 2010

	Class A/Fatalities
CAR	13/13
SUV/JEEP	3/3
TRUCK	2/2
MOTORCYCLE	5/5
PEDESTRIAN	3/4
OTHER*	1/1

*Includes vans and ATVs

28 TOTAL DEATHS

Fiscal 2009: 37 3 year average: 39

WHAT DO YOU THINK?

Through the end of March, **KNOWLEDGE** magazine is conducting a survey to determine whether we're meeting our readers' needs. Please help us out by taking a couple of minutes to answer a few simple questions at https://safety.army.mil/.

After all, this is YOUR magazine. Shouldn't it contain the information you find helpful?

FACT: Army motor and combat vehicle accidents are the single greatest cause of on-duty accidental ground fatalities among our Soldiers.

Get the tools before the road gets rough.

Driver's Training Toolbox

https://safety.army.mil/drivertrainingtoolbox/

U.S. ARMY
ARMY STRONG.

U.S. ARMY COMBAT READINESS/SAFETY CENTER

ARMY SAFE IS ARMY STRONG

A BAND OF BROTHERS & SISTERS

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KNOWLEDGE

VOL 4 APRIL 2010

OFFICIAL SAFETY MAGAZINE OF THE U.S. ARMY

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CATCHING AIR AT IRWIN p. 10

U.S. ARMY
ARMY STRONG.

THE BAND OF BROTHERS & SISTERS

KNOWLEDGE

OFFICIAL SAFETY MAGAZINE OF THE U.S. ARMY

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PLAYING IT SAFE

FROM THE DASAF

"Our **ARMY** achieved some impressive **MILESTONES** during **LAST YEAR'S** campaign, including our first accident- and fatality-free **MEMORIAL DAY WEEKEND** in more than **20 YEARS**."

By now, the weather is finally nice enough for many of us to shed our layers of winter clothing and head outdoors for some eagerly awaited sunshine. As you embrace all the fun spring and summer can bring, whether it's lounging by the pool or hitting the open road for the season's first motorcycle ride, I ask that you keep risk management in mind and "Play It Safe."

These days, our Soldiers are working hard and often playing harder. Our men and women in uniform are releasing stress and filling off-duty hours with activities like rock climbing, motorcycle riding, road trips and sports. All these great events are perfect opportunities to create lasting memories with friends and Family but, without proper planning and risk management, have the potential to cause serious trouble for our Army team.

Historically, our off-duty fatality rates inevitably increase from April to September. In fiscal 2009, almost 40 percent of our fatal accidents occurred during this timeframe, with privately owned vehicle (POV) and motorcycle accidents leading the way every month. We don't like to see these statistics, and the U.S. Army Combat Readiness/Safety Center team stands ready to help our Total Army Family bring these numbers down.

April 1 marks the official launch of our 2010 Safe Summer Campaign, and we need each of you to Play It Safe in everything you do these next few months. This year's campaign is packed with information and interactive multimedia you can use to build a personalized safety program tailored to your unit's needs. Campaign products, including feature articles, posters and public service announcements covering more than 20 summer safety topics, are all available via the "Campaign Corner" at https://safety.army.mil.

Our Army achieved some impressive milestones during last year's campaign, including our first accident- and fatality-free Memorial Day weekend in more than 20 years. I'm proud of this outstanding effort, but to make this our safest summer yet, we need to look at the lessons learned from last year's accidents. Several are particularly disconcerting, but they provide important talking points our Leaders, Families and peers can use as they engage with their Soldiers on off-duty risks.

One of last summer's earliest motorcycle fatalities involved a 26-year-old sergeant who lost control of his newly purchased motorcycle on a curve. The Soldier locked the bike's front brake as he attempted to regain control, causing the rear wheel to lift off the ground. He was thrown from the motorcycle with such force that his helmet came off, completely exposing his head to the asphalt roadway.

This accident highlights a crucial problem we've had with motorcycles over the past few years: Leader indiscipline. Not only was the Soldier involved a Leader, he bought the motorcycle from another sergeant within the unit. The Soldier was also dangerously inexperienced; he received his motorcycle learner's permit the day he died, and he hadn't attended the mandatory Basic RiderCourse. Since neither Soldier reported the sale of the bike to the chain of command, there was no higher-level intervention that might have saved this young sergeant's life. Both were Leaders and both knew better, but neither played it safe.

As dramatic as most POV and motorcycle accidents are, we can't forget about other activities that have historically been problem areas during the warmer months. We lost three Soldiers to drowning between April and September last year, all on fresh water lakes or rivers. Another three Soldiers died in off-duty negligent discharge accidents, all involving privately owned weapons and occurring in the late evening or early morning hours. There was also a smattering of other accidents that, while isolated, all resulted in a Soldier's untimely death. These incidents included a sport parachuting accident, a fall from a moving vehicle and a bicycle collision.

This diverse collection of accidents proves all of us — Leaders, Families, civilians and peers — must put our ears to the ground and listen to what our Soldiers are saying. Plans don't happen in a vacuum, and chances are many of your Soldiers are talking about their off-duty lives while they're at work. It's up to us to help them Play It Safe by giving them the tools they need to succeed not only this spring and summer, but every day of the year.

Thank you for what you do every day for our Band of Brothers and Sisters. Enjoy the weather, but remember to Play It Safe!

Army Safe is Army Strong!

WILLIAM T. WOLF
Brigadier General, USA
Director of Army Safety

U.S. ARMY COMBAT READINESS/SAFETY CENTER
ARMY SAFE IS ARMY STRONG
https://safety.army.mil

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Mission statement: The United States Army Combat Readiness/Safety Center (USACR/Safety Center) supports our Army by collecting, analyzing and communicating 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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Knowledge provides a forum for Soldiers, Leaders and safety professionals to share best practices and lessons learned and maintain safety awareness. The views expressed in these articles are those of the author and do not necessarily reflect the official policy or position of the U.S Army, Department of Defense or the U.S. Government. Contents are specifically for accident prevention purposes only. Photos and artwork are representative and do not necessarily show the people or equipment discussed. Reference to commercial products does not imply Army endorsement. Unless otherwise stated, material in this magazine may be reprinted without permission; please credit the magazine and author.

BEAT the HEAT

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From the first day of our military careers, the Army has stressed the importance of preventing serious heat illnesses. Despite these warnings, hundreds of Soldiers still suffer from heat illnesses each year.

In 2008 alone, there were 299 hospitalizations for heat stroke and 1,467 hospitalizations for heat injury/exhaustion. In addition, over the past 20 years, the incidence of heat stroke in the Army has increased sevenfold.

What Can Leaders Do?

There are several preventive measures Leaders can take to reduce the risk of serious heat illness in their Soldiers. For example, training schedules should be arranged so the most physically strenuous activities take place in the early morning, not during the hottest part of the day. Likewise, strenuous activities should not be scheduled back-to-back. There is a cumulative effect of repetitive days of training in warm or hot conditions; therefore, Leaders might also need to modify training based on the prior day's weather and the Soldier's activity level.

A Soldier's physical activity intensity and clothing/equipment might also need to be adjusted for the weather conditions. Altering clothing and equipment guidelines, such as unblousing boots and exchanging Kevlar helmets for patrol caps, can help a Soldier stay cool. In addition, Leaders should consider changing the order of training events and providing cooling stations between them.

When a Soldier suffers a heat-related injury, the unit's Leaders need to watch their other Soldiers for symptoms of heat injuries. Often the first Soldier to succumb is a warning that others might follow. Leaders should also be aware of the overall health of their Soldiers, and Soldiers need to communicate health concerns to their superiors. Prior exertional heat injury and certain chronic conditions or medications can increase a Soldier's risk of becoming a heat casualty, so Soldiers should share this information with Leaders.

What Can Soldiers Do?

The prevention of heat casualties is not just a Leader's responsibility. The individual Soldier has an obligation to do what he or she can to mitigate the risk, and that starts with taking care of their bodies. A male Soldier who is out of shape, as indicated by a two-mile run time greater than 16 minutes, is at three times the risk of suffering an exertional heat injury — as is a Soldier who is overweight. A Soldier who is both out of shape and overweight is at eight times the risk of suffering an exertional heat injury. Preparing for the heat starts with a year-round approach to maintaining physical fitness and a healthy body weight.

Acclimating to the heat is also critical to preventing heat injuries. An acclimated Soldier's body temperature during activity is lower and sweating begins sooner and at a higher rate. This improves heat loss. Complete heat acclimation requires up to two weeks of daily progressive heat exposure and physical exercise for at least 100 minutes per day. A highly fit Soldier is already partially heat acclimated and acclimates faster than a less-fit Soldier, which is another reason they should maintain a high level of physical fitness. Take note that acclimation begins to degrade with lack of exposure to the heat in as little as one week.

Proper Hydration

The more a Soldier sweats, the more fluids he needs to maintain proper hydration. Dehydration negates many of the

FYI

Additional information on heat injury prevention can be found on the U.S. Army Institute of Environmental Medicine Web site at http://www.usariem.army.mil/pages/downloads.htm and the U.S. Army Center for Health Promotion and Preventive Medicine's heat injury prevention page at http://chppm-www.apgea.army.mil/heat/.

advantages gained through being fit and acclimated to the heat, reducing physical work capacity and increasing body temperature and the risk of becoming a heat casualty. Proper hydration should not only occur during training, but also continue throughout the day so the Soldier starts the next training day properly hydrated. (*Editor's note: For more information on proper hydration, see the article "Get to Know H_2O" on page 8.*)

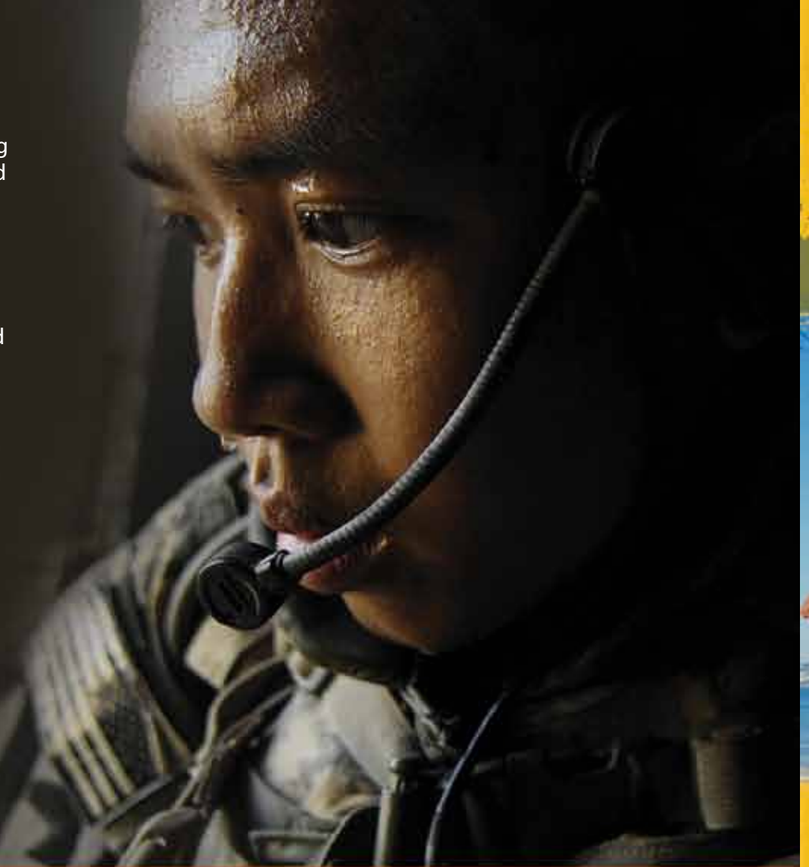
Heat Illness Treatment

If a Soldier suffers a serious heat illness, cooling the body rapidly is of paramount importance. While dehydration can contribute to heat stroke incidence, replacing fluids is secondary to cooling a heat stroke victim. Wrap iced sheets (bed sheets soaked and stored in ice water) around a hyperthermic Soldier to provide rapid cooling in the field. This can reduce heat stroke mortality from 50 to 5 percent.

Personnel at the U.S. Army Research Institute of Environmental Medicine (USARIEM) are actively engaged in developing new preventive measures to mitigate heat stress for the Soldier. By their very nature, certain training events could increase a Soldier's risk of hyperthermia, so an efficient and practical cooling method is necessary. USARIEM is developing an Arm Immersion Cooling System (AICS), which is designed to provide rapid cooling during rest breaks or after training events where heat stress is high. The AICS can help reduce body temperature by 1 to 2 F in 8 to 10 minutes and accommodate up to six Soldiers at a time. This can be used as part of an integrated composite risk management approach to reducing the incidence and severity of heat illnesses throughout the military.

Conclusion

Serious heat illnesses are preventable, but doing so requires a two-pronged approach. Officers and NCOs must plan and conduct training in a manner that minimizes the risk of serious heat illness. Soldiers must heed their Leaders' advice and prepare themselves for the hot months ahead. When we take the time to prepare, there's no reason we can't beat the heat.



MANAGE THE HEAT

Use composite risk management to reduce heat casualties in your formation.

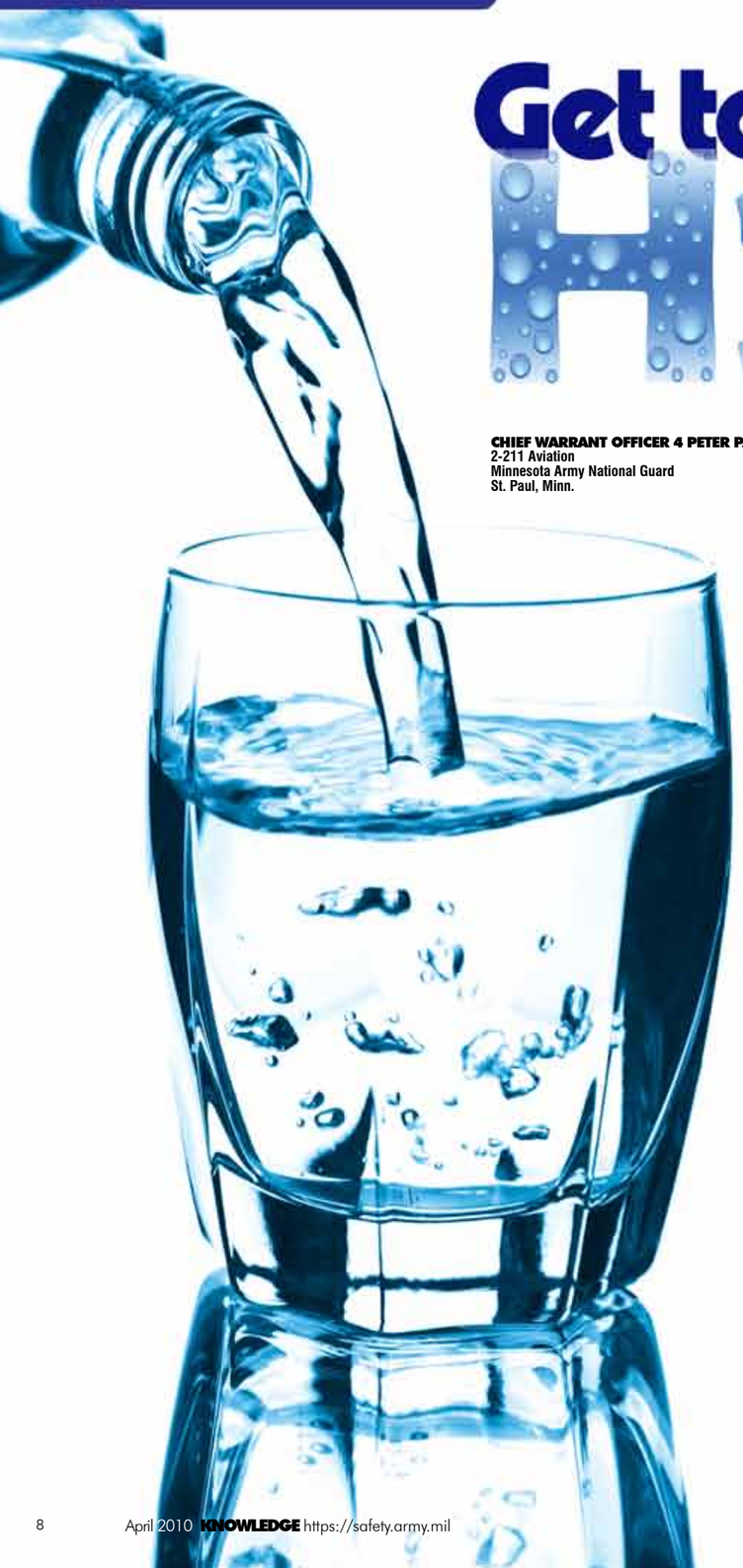
1. Identify hazards: HEAT
- **H**igh heat category.
- **E**xertion level of activity.
- **A**cclimatization (don't forget altitude).
- **T**ime (length of activity and time of day).

2. Assess hazards
- Ambient temperatures (i.e., a heat category assessment using wet bulb globe temperature should be conducted and adjusted for temperature variance).
- Know your Soldiers (e.g., their hydration status, risk factors or certain medications that might increase risk).

3. Develop controls
- Education: Establish standing operating procedures (SOPs) and train as you'll fight.
- Planning: Develop a plan to have ample hydration sources available based on activity levels and provide rest cycles as needed.
- Identification: Identify and note previous heat casualties along with current illnesses.
- Develop a hydration monitoring system. Use current guidelines; Soldiers should hydrate continuously to produce urine that's clear to very light yellow in color.

4. Implement controls
- Ensure risk decisions are made at the appropriate level.
- Enforce and monitor the hydration standard.
- Execute random checks.
- Follow clothing and equipment recommendations.

5. Supervise and evaluate
- Enforce SOPs through constant monitoring and frequent walk-throughs.
- Conduct spot checks.
- Develop contingency plans for injuries that might occur despite preventive measures.
- Continually re-evaluate the situation and adjust controls as needed.



Get to Know H2O

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As we prepared to deploy to Iraq, my brigade was inundated with information stressing the importance of proper hydration. None of us wanted to be a noncombat casualty and, thereby, a hindrance to our fellow Soldiers and the mission, so we all took the message to heart. During our six-month train-up, not one Soldier succumbed to dehydration. That would soon change.

We deployed to Iraq at the begining of summer and, within 30 days, had 50 heat casualties. During that first month, not one day passed without Leaders insisting we stay hydrated. We had an abundant supply of non-caffeinated fluids to choose from, so what went wrong?

Why Hydrate?

The human body is made up of about 60 to 70 percent water. Blood is mostly water, and your muscles, lungs and brain all contain a lot of water. We need water to regulate body temperature and provide the means for nutrients to travel to our organs. Water also transports oxygen to cells, removes waste and protects joints and organs. Therefore, allowing your body to become dehydrated has a more profound effect on your overall health than just causing thirst or a headache.

We lose water through urination and by sweating. If you're very active, you lose more water than if you're sedentary. Diuretics such as caffeine pills and alcohol result in the need to increase our fluid intake because they trick the body into thinking we have more water than we need.

Symptoms of mild dehydration include chronic pains in joints and muscles, lower back pain, headaches and constipation. A strong odor to your urine, along with a yellow or amber color, indicates you might not be getting enough water. Thirst is an obvious sign of dehydration. However, you need water long before you feel thirsty.

What's Your Daily Need?

So how much water or fluids do we need to take in each day? According to the U.S. Army Center for Health Promotion and Preventive Medicine, a good rule of thumb is to drink at least eight to 10 cups of water per day at regular intervals. Ten to 12 cups is even better. In extreme climates, such as the desert, you'll need even more water to prevent dehydration. In addition, if you exercise, you should further increase your daily water intake. And if you drink alcohol, you should consume at least an equal amount of water to counter its dehydrating effects. As you can see, your daily need for fluids can add up to quite a lot.

If we eat a healthy diet, we can get as much as 20 percent of our fluid requirements from foods. The rest should come from the beverages we drink. Of course, water is the best choice. Sodas have a lot of sugar and most are caffeinated. Drinking soda may also cause us to take in unnecessary calories, while the diuretic effect will actually cause you to need more fluids. For coffee drinkers, decaf is the best choice if you don't need the caffeine to help stay alert.

Sports drinks containing electrolytes, such as Gatorade or PowerAid, may be beneficial. Just ensure you look out for added sugar and calories your body doesn't need. Juices are also good because they have vitamins and nutrients. If you're like me, plain water isn't very satisfying. I add raspberry, orange or lemon flavoring to my water, which makes consuming large amounts tolerable.

Conclusion

You might find it difficult to drink enough fluids every day. But if you make it a habit (do something for eight straight days and it will become a habit) to have a water bottle handy when you're working, traveling or exercising, you will avoid the headaches, vomiting, cramping and embarrassment of being a heat casualty.

TOO MUCH OF A GOOD THING?

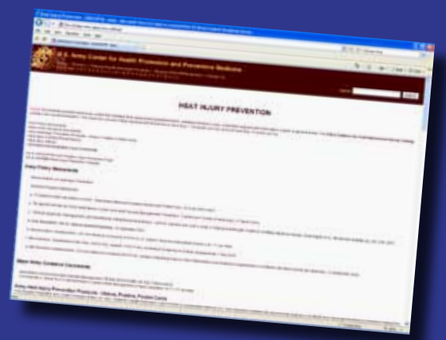
Just as Soldiers can suffer a heat injury by not drinking enough fluids, they can also drink too much. Hyponatremia is a condition where the sodium concentration in human blood is lower than normal. Causes include overhydration, skipping meals or dieting, loss of body salt or misdiagnosis and treatment for dehydration.

Those suffering from hyponatremia can exhibit symptoms such as confusion, weakness, nausea or vomiting. If you suspect a Soldier is suffering from hyponatremia, help replace salt loss and follow the measures for heat exhaustion. If symptoms persist or become more severe, evacuate the Soldier to a medical facility.

To prevent hyponatremia:

- Follow fluid replacement guidelines.
- Replace lost salt by consuming meals and sports drinks as directed.
- Provide snacks or carbohydrate electrolyte beverages during long training events.
- Don't take dietary supplements.

For more information, posters and tip cards about proper hydration, visit the U.S. Army Center for Health Promotion and Preventive Medicine Web site at http://chppm-www.apgea.army.mil/.



Catching Air at Irwin

STEVE KURTIAK
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I have ridden motocross and off-road motorcycles for 35 years and still get the same thrill from banging gears, busting berms and catching air as when I started. Some Army installations recognize many Soldiers have the same desire to push themselves and their bikes to the limit on a track or trail. Fort Irwin, Calif., is one of those posts and has provided an off-road vehicle (ORV) park where riders can fulfill this desire.

"The **BENEFIT** of having an **AREA** like this on an **INSTALLATION** is that it **PROVIDES** Soldiers and Families a **SAFE** and **CONTROLLED** environment to **DEVELOP** off-road riding **EXPERIENCE** and spend **QUALITY** off-duty **TIME** together. It also provides experienced **RIDERS** the **OPPORTUNITY** to **MENTOR** less experienced **RIDERS.**"

The ORV park is located near the main gate on NASA Road and has been in existence for several years. The track was built following an accident in August 2002 when a Soldier died after crashing his motorcycle in the desert and was not found until the next day.

According to Kimberly Schmidt, Fort Irwin garrison safety director, "The track was located on Fort Irwin to preclude any further accidents such as the one in 2002. A phone located at the track and a mandatory buddy ride system was put in place to ensure an accident like this never happens again."

I had heard from many of my friends and co-workers about the track, but I never had the opportunity to see it. As I approached the gate, I had a huge urge to ride. I was immediately impressed with the layout of the course and its close proximity to main post. A professional motocrosser designed the main track, and he definitely knew what he was doing. A mixture of table-top jumps and doubles were well placed throughout the course. Many of the turns were stadium-style berms that connected the switchback straightaways with plenty of room to maneuver on the 20-foot-wide track. It's the desert, so a mixture of hard-packed and loose sand made up the track surface.

Adjacent to the full-size track is a well-designed peewee track with small rolling mounds with low berms for the youngsters to negotiate. This small C-shaped track is a great place for the next motocross

or all-terrain vehicle (ATV) star to learn and practice their riding skills or just putt around under mom's and dad's supervision.

The third track is a little more forgiving than the full-size motocross track and is better suited for ATVs. The ATV track also has some jumps and bermed turns, but not as many switchbacks as the main track. The tracks are co-located adjacent to the ATV/dirt bike course training area and cover about seven acres of the ORV park. If riding on a closed course doesn't fulfill your off-road needs, you can use the remaining unimproved 75 acres to test your riding ability. The entire area is fenced and secured when not in use.

According to Fort Irwin Outdoor Recreation, the ORV park is used primarily during the late September to mid-April time frame. The reason usage increases during those months is "tolerable temperatures." Only the hardcore riders will use the track in the summer months, when temperatures are well above 100 F.

Track 1

Fort Irwin is one of the few posts that provides an off-road riding area on the installation. To my knowledge, the only other installations that have off-road riding areas on post are Fort Riley, Kan., and Fort Hood, Texas. If there are more, please let us know.

The benefit of having an area like this on an installation is that it provides Soldiers and Families a safe and controlled environment to develop off-road riding experience and spend quality off-duty time together. It also provides experienced riders the opportunity to mentor less experienced riders.

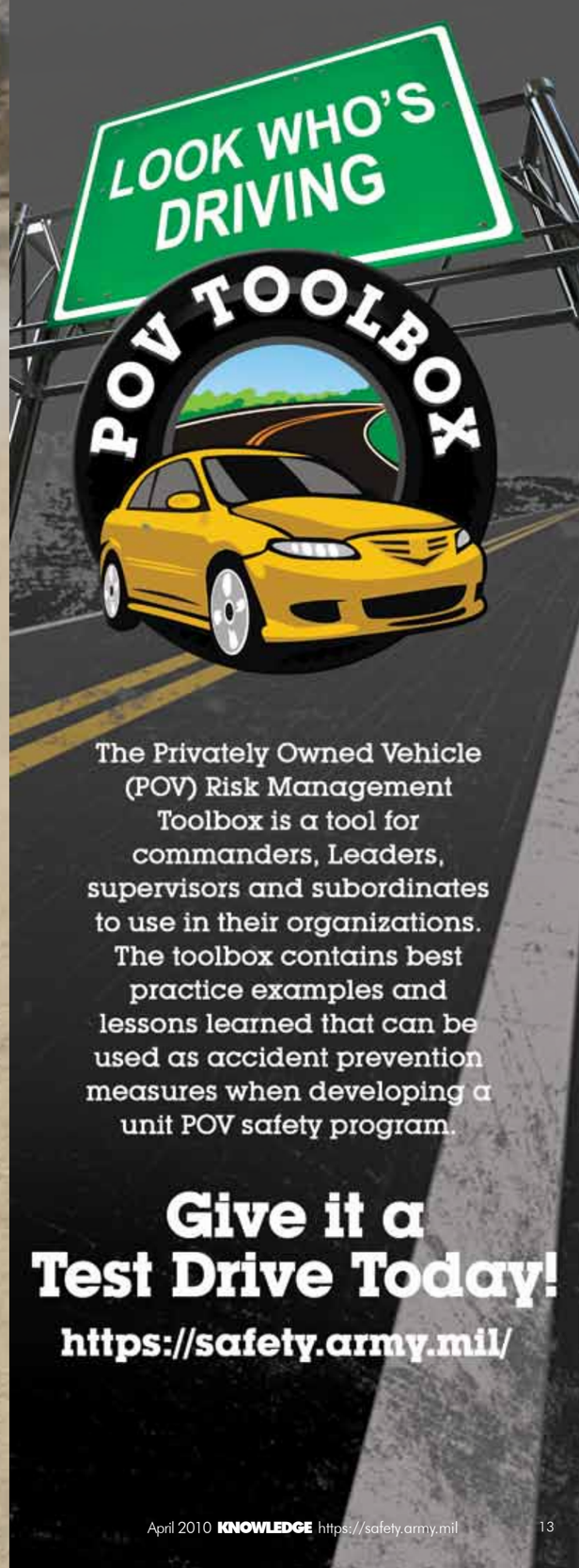
There are many safe areas where Soldiers can ride off-road, and some that probably are not. Since fiscal 2005, there have been 106 ATV accidents reported, resulting in 16 fatalities. There have also been 45 dirt bike accidents reported, with one fatality, for the same period. Many of these accidents occurred at places other than an approved riding area. Providing an area to ride on post will help ensure riders are operating their off-road machines in a safe environment.

If your installation is considering establishing a riding area such as the one at Fort Irwin, contact the U.S. Army Combat Readiness/Safety Center Driving Task Force at drivingtaskforce@conus.army.mil or (334) 255-2892. Be safe, have fun and get dirty!

FYI

Before you can ride at the Fort Irwin Off-Road Vehicle (ORV) Park, you must complete an ATV/dirt bike rider's course. The course is conducted at the ORV park and registering is easy. Contact the Fort Irwin Installation Safety Office to enroll.

After you've completed the course, contact the Fort Irwin Outdoor Recreation office to obtain your ORV card. There is a large off-road riding population at Fort Irwin. Currently, 277 riders are registered and authorized to ride at the ORV park.



30 Seconds
Start to Finish

COMPILED BY THE KNOWLEDGE STAFF

Under demanding combat conditions, excitement can cause hesitancy or indecisiveness in the best aviators and crews. So what can we do when faced with a difficult situation? Be prepared! Understanding emergency procedures means knowing what happens to the aircraft with every action you take.

The day started out like any other for the Scout Weapons Team (SWT), flying out of a combat forward operating base. The flight crew for Chalk 1 consisted of the air mission commander (AMC) in the left seat and the pilot in command (PC) flying right seat. Both pilots had 900 hours of total flight time. The mission called for Chalk 1 to perform low-level reconnaissance at several named areas of interest (NAI) while their wingman provided overall security at the objective. The specific key task on this day was to deny the enemy's ability to emplace improvised explosive devices against coalition forces and their partners.

The crew completed the required risk assessment worksheets and the mission was rated moderate risk. The brigade commander approved the mission and crew mix during the concept of operation brief the day before.

Both flight crews conducted preflight activities the day of the mission, a go/no-go brief and an AMC back brief. The team's AMC then contacted squadron task force flight operations to inform them of the flights' departures from the airfield.

Chalk 1 was flying about 200 feet above ground level (AGL), while their wingman was flying 1,000 feet AGL and 800 meters behind. A few minutes into the mission, the team arrived at its first NAI and the lead aircraft crew observed and relayed a suspicious site to their wingman. Suddenly, the crew of Chalk 1 heard the full authority digital electronic control (FADEC) "Fail" audio tone. The PC retarded the throttle to the index mark as he initiated the emergency procedure for a FADEC failure. He reacted to the emergency with initial throttle reduction within 2½ seconds of the FADEC failure and attempted to control the engine power turbine speed (NP) and main rotor speed (NR) with the collective without success.

Because the crew failed to execute step two of the emergency procedure and place the FADEC AUTO/MAN switch to the MAN (manual) position, the PC's attempt to control NP with throttle had no effect. This is because the engine remains in a fixed fuel state based on the power setting at the time of the FADEC failure. As the PC began to reduce collective,

the engine began to overspeed. The result of not placing the switch to the manual position and reducing the collective in a fixed fuel state caused the engine to begin surging from 118 to 124 percent. The aircraft's overspeed trip point activates when NP reaches 124 percent. The PC initiated an autorotational descent as the surges caused by the overspeed governor activation induced severe aircraft vibrations and yaw excursions. As a result, the aircraft crashed and slid until it collided with a rocky ledge.

Lessons Learned

The crew had repetitively flown this mission for four months. In the heat of the moment at 200 feet AGL, many concerns race through an aviator's mind when warning audios and caution lights go off. One in particular, "Have we just been shot?"

When the FADEC failed, the PC executed the first step in the emergency procedure; however, he failed to accomplish the remainder of the steps as required by Technical Manual 1-1520-248-CL, Operator's and Crewmember's Checklist for Army OH-58D Helicopter. As a result, the PC wasn't able to control the surging engine and rotor rpm and, subsequently, entered an autorotational descent and crashed. Although the aircraft was destroyed, the crewmembers walked away.

This crew could have prevented this accident if one of them had placed the FADEC system in the manual mode and effectively controlled engine and rotor rpm manually with the throttle. The PC knew the proper emergency procedures but failed to execute them due to a desire to get the aircraft on the ground as soon as possible. Having said that, the fact both pilots walked away is a tribute to the PC's airmanship.

A second area of concern is crew coordination. Although the PC is the aircraft commander and has overall responsibility, the presence of a second crewmember requires effective crew coordination. It would have been nearly impossible for the pilot on the controls to place the FADEC AUTO/MAN switch into the manual mode while maintaining helicopter control. This situation required immediate action by both crewmembers. The PI also knew the correct procedure but was hesitant to place the FADEC system in the manual mode. The crew failed to coordinate their actions properly. They did not coordinate the actions necessary to complete the emergency procedure and safely land the aircraft as required by Training Circular 1-248, Aircrew Training Manual OH-58D Kiowa Warrior.

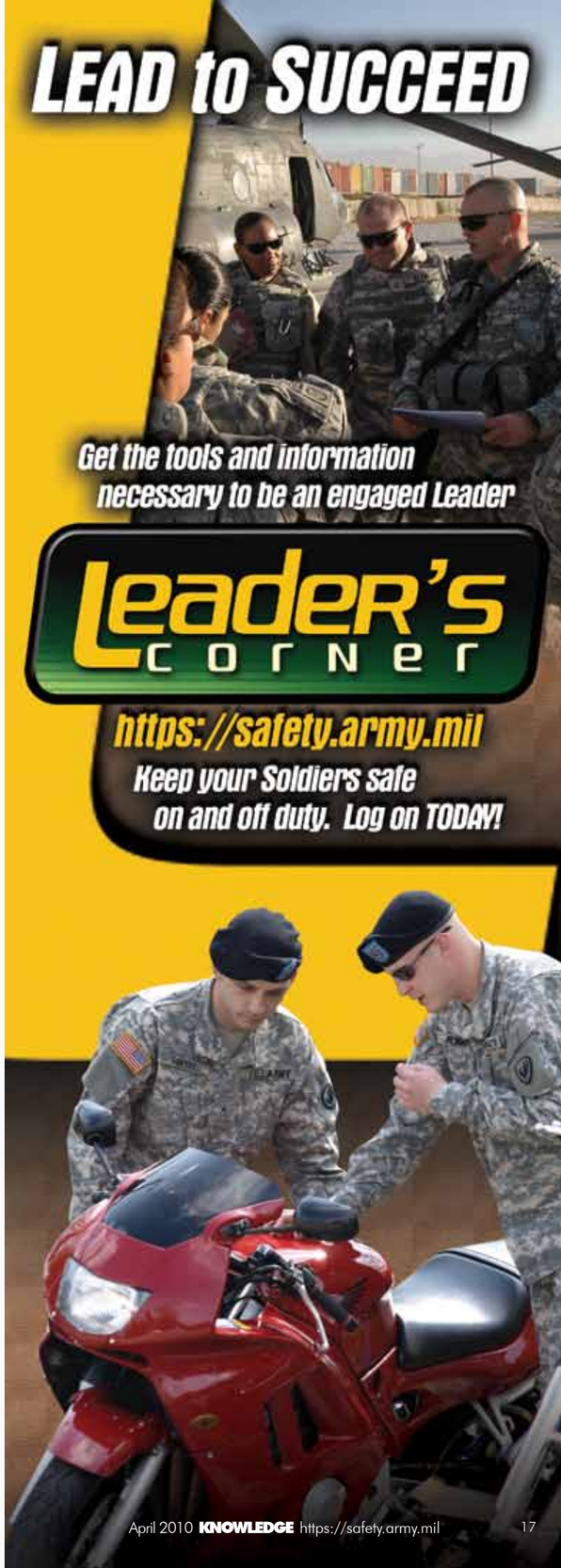
So what can we do? Ensure all pilots receive adequate crew coordination training as it pertains to this emergency procedure. Command emphasis is necessary to reinforce the importance of this action at all levels. Additionally, spend the extra minutes during the aircrew brief to discuss specific crew actions in the event of an emergency. You never know when you're going to have an emergency in flight. In this accident, the estimated total time from the initial indication of a FADEC failure to aircraft impact was 30 seconds. If confronted with a similar in-flight situation, what would you do? Be prepared!

DID YOU KNOW?

The technical manual outlines the emergency procedure steps for FADEC Manual Operation as:

Perform –

(1) Throttle – Reduce
(2) AUTO/MAN switch – MAN
(3) Collective – Adjust to maintain RPM within limits
(4) Throttle and Collective – Adjust to maintain RPM within limits
(5) LAND AS SOON AS PRACTICABLE
(6) If RPM cannot be maintained within limits, LAND AS SOON AS POSSIBLE



HANDLE WITH CARE

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U.S. Army Forces Command
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While attempting to simulate an improvised explosive device blast during training, a Soldier pulled the pin and released the safety lever on what he believed was a standard smoke grenade. Unfortunately, he was actually handling a fast obscurant grenade (FOG). Almost immediately, the device detonated in the Soldier's hand, resulting in the loss of two fingers, as well as burns and minor shrapnel wounds.

Although the FOG looks similar to the M8 and M83, it's not a typical smoke grenade. Once the pin is pulled and safety lever is released, the FOG has an extremely short delay compared to other smoke grenades. This feature was designed to allow the FOG to be thrown for immediate effect in a tactical situation. As such, Soldiers should never "cook off" or "milk" the FOG. Doing so could result in catastrophic injury.

The basic FOG (version 1.0) is distinguishable by its fiberboard body, flat top with four visible screw heads and identifying nomenclature "Fast Obscurant Grenade." The improved version of the FOG (version 1.2) can be identified by the confidence clip on the fuze. Version 1.0 does not have this clip. It is imperative Soldiers correctly identify the type of grenade before use.

Because of the potential hazards associated with the FOG, users must wear ballistic eye protection, as well as ear plugs and gloves. The fuze assembled to the FOG is a modified "flash-bang" fuze that can also cause serious burns.

Leaders at all levels need to be aware of the safety precautions associated with the FOG and take the proper measures when training personnel in its features and use. Soldiers must be trained and knowledgeable on the FOG's identifying characteristics; employment tactics, techniques and procedures; and safety precautions.

As seen in the accident above, misidentifying or treating the FOG as a standard smoke grenade can result in serious safety consequences. However, these types of accidents are preventable. Training, leadership and adherence to ammunition handling procedures can keep Soldiers safe. During pre-deployment operations at both home station and training centers, Leaders must emphasize the ability to distinguish between variants of grenades. During relief-in-place operations, Leaders should ensure their Soldiers are trained on the ammunition they receive. Engaged leadership and focused training will improve the safety and operational effectiveness of our forces.

FYI

The fast obscurant grenade (FOG) represents a fragmentation hazard to personnel within 200 feet of explosion. When employing the FOG, always wear ballistic eye protection, body armor, single ear protection and gloves.

DID YOU KNOW?

Conduct pre-combat inspections (PCIs) on your fast obscurant grenade (FOG) before and after training and combat to ensure the readiness and safety of the device. The following is the recommended PCI checklist:

- **Remove the FOG from its shipping container.**
- **Inspect the FOG for any damage (water damage, cracked case, exposed/leaking payload, missing label, etc.).**
- **Inspect the external fuze (M201A1 MOD3) for any damage, including the safety pin (straightened, broken, missing, etc.), spoon, pull-safe (pull ring inside of the retaining well) and its connection to the FOG.**
- **If any damage is observed, remove the device from operation and return it to your issuing authority as Condition Code H.**

Out to Sea

MARY PROFITT
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My favorite memories from childhood are of our Family vacations to Myrtle Beach, S.C. We made the trip every year from Kentucky to enjoy a week filled with coastal luxuries like breezy ocean winds and the feeling of sand between our toes. I loved the ocean. I was an avid swimmer and enjoyed success as a member of my local swim team. One day, however, my overconfidence in my abilities almost cost me my life.

In the summer of 1995, I was 15 years old and lacked a fear of things more powerful than me. We traveled that summer to Myrtle Beach and, after the long drive, I hopped out of the car and sprinted straight toward the ocean. I was coaxed out of the water for dinner, but was eager to return the next day.

I woke up early the following morning and headed to the beach with my father. We decided to do some boogie-boarding and wave-riding. He was also a great swimmer and taught me how to swim when I was very young. We were the "fish" of the Family. Naturally, we spent hours in the ocean that day before we got tired and decided to lie back and float on the waves, relaxing with the momentum of the current.

I don't recall how long we floated there, but when I finally raised my head to look around, I quickly realized we were in trouble. I looked toward the beach, where the sunbathers looked like ants and the beachfront hotels seemed distant on the horizon. I yelled at my father, who was floating nearby, and pointed toward the beach. I could see the fear in his eyes, despite his efforts to hide it for my sake. He immediately yelled, "Swim!" and we frantically began paddling toward the shore.

I didn't even raise my head to check my progress for the first five minutes. I swam as hard as I could, but I could not keep up with my father's strong legs and arms. He picked me up and tossed me ahead of him and I swam until he caught up to me again. We kept this up for several more minutes until we were exhausted and gasping for breath. To our horror, the shore was still far ahead in the distance.

We both knew that to make it to shore we would have to swim with the current in a diagonal direction. We kept swimming and fell into a rhythm with the tide. Although time was hard to estimate, I'm sure more than an hour passed before we collapsed on the shore. We landed miles away from the point where we entered the water.

We had to take a taxi back to our hotel to find the rest of the Family and let them know we were all right. My mother, helped by three lifeguards, had been frantically scouring the beach for us. The feeling of reuniting with loved ones after such a big scare is hard to describe. Exhaustion and emotion overcame us, and my father and I collapsed into the arms of our Family members.

The lifeguards informed us that the rip tides were especially strong that day. A red warning flag had been displayed to indicate the water conditions were hazardous. I never even noticed the flag. I was so overconfident that I didn't stop to consider the unrelenting power of the sea. I have since returned to the ocean several times, but I approach it with respect and a healthy fear of the danger behind its power.

HOW TO AVOID AND SURVIVE RIP CURRENTS

Rip currents are particularly dangerous for weak or non-swimmers and can even sweep the strongest swimmer out to sea. The following tips will help keep you from becoming a victim of a rip current.

When at the Beach

- Whenever possible, swim at a lifeguard-protected beach.
- Never swim alone.
- Learn how to swim in the surf. It's not the same as swimming in a pool or lake.
- Be cautious at all times, especially when swimming at unguarded beaches. If in doubt, don't go out!
- Obey all instructions and orders from lifeguards. Lifeguards are trained to identify potential hazards. Ask a lifeguard about the conditions before entering the water. This is part of their job.
- Stay at least 100 feet away from piers and jetties. Permanent rip currents often exist alongside these structures.
- Consider using polarized sunglasses when at the beach. They will help you to spot signs of a rip current by cutting down glare and reflected sunlight off the ocean's surface.
- Pay especially close attention to children and the elderly when at the beach. Even in shallow water, you can lose your footing.

If Caught in a Rip Current

- Remain calm to conserve energy and think clearly.
- Never fight the current. Think of it like a treadmill that you cannot turn off and you need to step to the side.
- Swim out of the current in a direction following the shoreline. When out of the current, swim at an angle — away from the current — toward shore.
- If you are unable to swim out of the rip current, float or calmly tread water. When out of the current, swim toward shore.
- If you are still unable to reach shore, draw attention to yourself by waving your arm and yelling for help.

If You See Someone in Trouble, Don't Become a Victim Too

- Get help from a lifeguard.
- If a lifeguard is not available, have someone call 911.
- Throw the rip current victim something that floats such as a lifejacket, cooler or inflatable ball.
- Yell instructions on how to escape.
- Remember, many people drown while trying to save someone else from a rip current.

Source: National Weather Service

STILL CONFUSED ON ACT-E?

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The Aircrew Coordination Training-Enhanced (ACT-E) training process has recently had considerable changes made to its courseware. After reading this article, you should have full "knowledge" of all ACT-E courses.

I'll start with an example of a new aviator and follow him throughout his career. As of June 2006, all aviators graduating flight school are ACT-E "initially qualified." New aviators receive blocks of instruction on all aspects of ACT-E in Initial Entry Rotary Wing training and follow-on instruction at the flightline. There might be an instance, such as an interservice transfer, where a student failed to receive initial qualification. In this case, the student is required to take the initial qualification course available on the U.S. Army Blackboard server at https://ellc.learn.army.mil. Upon completion of the course, the student's training is documented in his individual aircrew training folder. A certified instructor must conduct this course, as with all ACT-E courses.

Now, let's take that same aviator a few years down the road and send him to the instructor pilot (IP) course. Upon completion of any Army-approved IP qualification course, the aviator is qualified to be an ACT-E instructor. This is retroactive, meaning any IP, regardless when he completed IP training, can conduct ACT-E training. A "train the trainer" course is no longer required.

The same highly trained IP now goes to Fort Hood, Texas. The company standardization pilot (SP) tasks him to conduct annual ACT-E sustainment training for four pilots. Before the IP can conduct any training, he must first register on the U.S. Army Blackboard Web site. If for some reason he is not registered, he should go to https://training.rucker.army.mil/Protected/ACT_E/ACTE.html for information on the process. Once registered, he'll receive a confirmation e-mail, Web site link and instructions to navigate through the site. The IP is now ready to conduct annual sustainment ACT-E training.

ACT-E courseware is not intended for use as stand-alone instruction. The intent is for ACT-E sustainment training to be "instructor led." To clarify what instructor led means, the instructor logs onto the site and conducts the training. This is a great opportunity to promote group discussions outside the cockpit on aircrew coordination topics. There is no requirement to disclose your specific airframe. If you find a scenario in a different airframe that you feel is important in your class, use it. The training support package, provided by the Web site, is a great tool and affords instructors the ability to move from slide to slide at a pace in line with group discussion. This allows the instructor to fine tune the course so the students get the most out of it.

Training Circular (TC) 1-210, Aircrew Training Program Commander's Guide to Individual, Crew and Collective Training, is now TC 3-04.11. The ACT-E portion is published in TC 3-04.11, Chapter 4, and through the Directorate of Evaluation and Standardization portal on Army Knowledge Online. The following is an excerpt:

4-67. The following standardization personnel (SP/IP/IE/SI/FI) are authorized to conduct ACT-E training as an ACT-E instructor:

- Standardization personnel (SP/IP/IE/SI/FI) upon completion of an USAACE-approved IP or Aircrew Standardization Instructor course.
- Standardization personnel (SP/IP/IE/SI/FI) previously instructor-qualified to teach ACT or ACT-E qualification training.
- Current and qualified ACT-E instructors may qualify other standardization personnel (SP/IP/IE/SI/FI) as ACT-E instructors.

4-68. Instructor-qualified rated crewmembers (RCM) may conduct initial ACT-E qualification, sustainment and instructor qualification training for RCMs, non-rated crewmembers (NCM) and unmanned aircraft systems (UAS) personnel. Instructor-qualified NCMs may conduct initial ACT-E qualification training for NCMs only.

4-69. ACT-E initial qualification, trainer qualification and annual sustainment training will be annotated on the individual's DA Form 7122-R as an event and in the remarks section of the individual's DA Form 759 during the annual closeout.

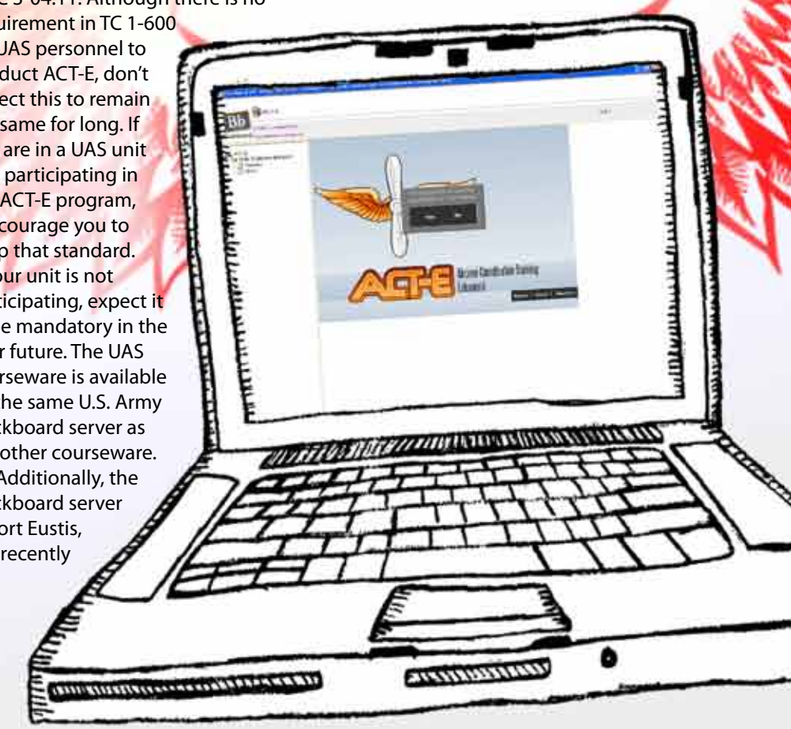
As noted above, standardization instructors and flight instructors (SI/FI) are qualified to do initial qualification on NCMs only. It does not say they are qualified to do sustainment training. Although RCMs and NCMs have different jobs in the aircraft, aircrew coordination is essential between the two.

The UAS has its own regulation pertaining to ACT-E and is not addressed in TC 3-04.11. Although there is no requirement in TC 1-600 for UAS personnel to conduct ACT-E, don't expect this to remain the same for long. If you are in a UAS unit and participating in the ACT-E program, I encourage you to keep that standard. If your unit is not participating, expect it to be mandatory in the near future. The UAS courseware is available on the same U.S. Army Blackboard server as the other courseware.

Additionally, the Blackboard server at Fort Eustis, Va., recently changed its Web address. Although the format is similar to the old server, the new system has more capability. Please note that it has a new registration process, and students must register on the Blackboard server every fiscal year.

The first requirement date for either registering or re-registering is May 1. All prior user records will be removed from the system on that date. After May 1, user records will be purged on Oct. 1 each following year. Users will receive an automatic message via the Blackboard to alert them to preregister prior to the purging. If users are preregistered, the purge will seem less cumbersome.

This process might seem awkward, but as you use it, the system will become more familiar and user-friendly. Nonetheless, with any new server, we will have issues and will resolve those problems as they emerge. If you have any comments, suggestions or complaints, contact me at (334) 255-9663, DSN 558-9663 or e-mail ruck.acte@conus.army.mil. The e-mail address for the project manager should not change, regardless who is in the position.



A DRUNK KILLED MY DAD

RETIRED LT. COL. JOHN PASTINO
Springfield, Va.

"Car wreck in Crystal Beach leaves one dead," read the headline in the April 16, 2001, issue of the Galveston County Daily News. Further down the article reported, "A two-car wreck on (Texas) state Highway 87 Sunday afternoon left one man dead and two others in the hospital." The article also quoted a police officer saying, "This one was real bad."

The headline held more than passing interest for me. You see, the man who died that Easter Sunday in 2001 was my father, a retired U.S. Marine colonel and Vietnam veteran.

That Sunday afternoon, my wife and I and our sons were enjoying Easter dinner at my mother-in-law's house when the phone rang at 4:30. Recognizing my brother's voice, I said, "Hey, Philip!" thinking he was calling to wish me a happy Easter. Unfortunately, that wasn't the case.

"John — mom and dad were in a car accident," he said. "Dad's dead and mom might not make it through the night." I hung up the phone, stunned as a hundred things raced through my mind at that moment.

My wife and I immediately made reservations to fly to Galveston. Before leaving, I called the hospital to check on my mother's condition and was told she was still alive. She hadn't been told of my father's death. The doctors feared it would affect her condition and whether she'd make it through the night.

We got to the hospital at 2 a.m., talked to the physicians and then went to see mom in the intensive care unit. My wife entered the room ahead of me and I heard my mother's voice say, "Oh, it's Sharon." At that moment I knew I'd be able to see mom and, hopefully, talk to her. She had suffered multiple contusions and broken ribs and also had a concussion. I was grateful she was still alive for me to talk to that night. The next day, Philip flew down as mom was recovering in the hospital. Together, he and I went to the accident scene.

Mom and dad had rented a new Dodge Intrepid for their vacation in Galveston. The Intrepid and the truck that hit them had been removed from the crash scene. However, you could see the skid marks on the road and the tire tracks where the grass was torn up. From looking at the accident scene, you could tell it had been a horrific crash. Shattered glass from the headlights and pieces of metal from the car were scattered over a 100-yard area. When you see wreckage like that, you don't have to imagine what a head-on collision can do — you're looking at it. It was what killed my father.

My father's loss affected all those who knew him and more than 400 people attended his funeral. My mother is strong; but to lose her husband of 30 years — one can only be so strong. Although she has physically recovered, losing her best friend in a senseless, meaningless act of irresponsibility has left scars that will never go away. Not only did my brother and I lose our father, mentor and best friend, our children will never get to really know their grandfather.

The drunk driver, who I refer to as my dad's "killer," was sentenced to eight years, but was placed on probation and released a year early. How well does seven years in prison balance against the loss of a man's life? Does the punishment fit the crime of drunken manslaughter?

I have a simple message to those who drink: I am not against drinking, but I am against drinking and driving, especially since there are plenty of ways to keep from doing that.

If you plan to drink, then plan not to drive. Make sure you have a designated driver to take you home safely. If you're tempted to "change course" while you're out drinking, don't. Even though you may feel fine, once you've had a drink or two, your ability to make good decisions diminishes.

You can also try keeping a $20 bill in your pocket for a taxi. Taxi fare may not be cheap, but it's cheaper than paying legal fees and repair costs if you crash. Or, if your unit offers a free pickup service for those who've been drinking and need a ride home, use it. Driving your car home the following day beats having it hauled to a junkyard that night.

Also, consider calling a friend or Family member (if they live in the area) for a ride home. Understand they'd much rather take 45 minutes out of their time now than attend your funeral next week.

And, finally, think about others on the road and the funerals their Families don't want to attend. By making one wise choice, you may save two Families from tragedy.

"PLUSSED-UP"

CHIEF WARRANT OFFICER 3 JUSTO PEREZ III
B Company, 1st Battalion, 223rd Aviation Regiment
U.S. Army Aviation School of Excellence
Fort Rucker, Ala.

The aircraft started to shake violently as we maneuvered onto a pinnacle at 9,100 feet mean sea level (MSL). I grabbed the controls and landed at the bottom of the landing zone (LZ) in the rugged terrain. That night, 30 Soldiers and a flight crew survived a CH-47D falling prey to the unforgiving terrain of Afghanistan. I relive that moment in my head repeatedly and struggle to comprehend how we could have prevented this incident. I'm passing on my story in hopes that others will learn from my experiences on that pinnacle in the dead of night. As the old adage goes, "Learn from everybody else's mistakes because you can't make all of them yourself."

It was the middle of June 2008 and the deployment was wearing on my unit, having only been in Afghanistan for six months. We were flying on the edge every day and night and were making life-changing decisions on each mission. My wife and I had a son in February and I was eager for this deployment to end so I could go home to be with my Family. Like many others in my unit, this was not our first deployment and we all knew what to expect during this rotation.

We received a mission to insert troops in the Nuristan province, which is southwest of Naray, now known as Bostic. Our initial focus was on planning the mission and ensuring all required items were completed in accordance with brigade standing operating procedures. The LZ imagery depicted the typical mountainous terrain for eastern Afghanistan with steep, jagged mountains and cliffs with numerous trees.

The mission required three aircraft, which consisted of two Chinooks and one Black Hawk. Night vision goggles (NVG) were not mandatory for every mission in Afghanistan, but we used them for this mission, as planned. All pilots were "plussed-up" — the slang term used for seasoned aviators who are capable, experienced and knowledgeable to accomplish the mission safely. We completed a risk assessment worksheet to identify and develop controls for the mission's hazards. The risk assessment total number is lower if the pilots have over the set amount of flight hours and NVG hours. The same applies to the nonrated crewmembers (NCM). For this mission, the NCMs met the requirement. In Afghanistan, the colors green, amber and red represent the level of crewmember experience. For our mission, the risk assessment was "moderate" with all conditions noted and approved at the appropriate risk authority.

Everything was going according to plan with no delays. Prior to the mission, I got on TaskView, a feature of FalconView that displays the terrain and flies the mission either day or night. TaskView is an integral planning tool that shows the crew what to expect for the routes and LZs. For this mission, it depicted extremely steep terrain. We knew that we would be facing a challenge, but we all agreed it was manageable.

We departed after sunset and, as we arrived on short final to the LZ, I announced on the radio that this was a one-ship LZ. Chalks 2 and 3 started orbiting to the south while we attempted to insert our troops. We came to a high hover over the LZ with no suitable area to land. According to S-2, the maximum slopes to be expected were only 6 to 7 degrees. However, the slopes below us were steep on all sides with 40- to 70-degree inclines.

While hovering out-of-ground effect and trying to find a suitable area to safely land the aircraft, we noted a pinnacle to our southwest suitable for us to perform a two-wheel aft landing. This type of landing was not uncommon in Afghanistan, especially under goggles. The crew discussed the new LZ and my co-pilot announced his actions and I acknowledged, as did the crew. We proceeded to reposition the aircraft to the pinnacle. We then cleared the aircraft appropriately.

> "All **PILOTS** were "**PLUSSED-UP**" — the slang term used for **SEASONED AVIATORS** who are **CAPABLE**, experienced and **KNOWLEDGEABLE** to **ACCOMPLISH** the mission **SAFELY**."

As we were backing the aircraft to position the rear wheels on the slope, the flight engineer (FE) yelled, "Hold your back!" Simultaneously, the aft blade struck a tree, causing the aircraft to shake violently. I looked at my co-pilot and said, "Land!" He said, "Let's fly it," which I followed with, "F*** no!"

I grabbed the controls and moved the aircraft forward and down the steep terrain. As we descended to the bottom of the ravine, the blades began to strike the side of the mountain. I could hear each blade ram the massive rocks, causing the aircraft to shake violently with each impact. The aircraft settled onto the bottom of a streambed with the forward transmission sheared off and the aft blades horizontally stacked into the mountain.

I pulled the engine control levers to stop power and then pulled the fire pull handles. Suddenly, the overhead console dropped down to eye level and I could hear the loud screaming of the engines winding down. We checked on the flight crew and the 30 passengers onboard. Everyone was OK, so we began our egress.

Lessons Learned

What I have learned from this preventable accident is the entire crew needs to be "plussed-up." When conducting missions, whether day or night, all crewmembers should be capable and have experience. The two pilots and an FE were the only experienced crewmembers who had done this type of mission before. Unfortunately, the FE had to pick up the slack of the other NCMs (a crew chief [CE] and gunner) who had little experience in this type of maneuver.

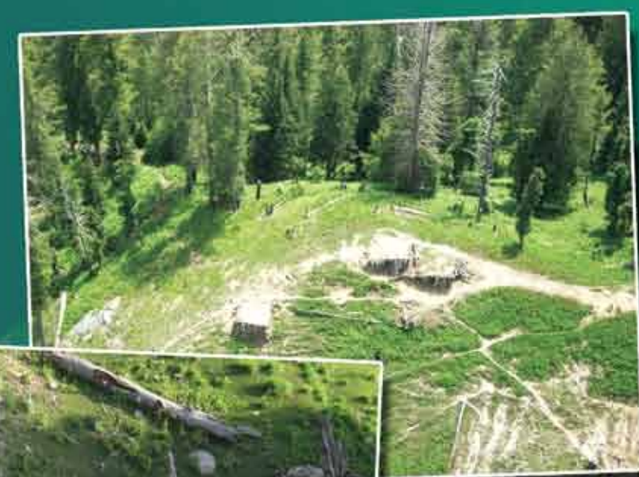
While attempting to land on the pinnacle, the CE on the ramp focused his attention inside the aircraft without announcing his actions to the crew, which compromised his sector of scan. Ultimately, the responsibility was left to the inexperienced gunner and the experienced FE to clear the aircraft for landing. The FE, positioned at the cabin door, couldn't watch for obstacles because the door blocked his view of anything directly behind the aircraft. The gunner was situated on the left side and unable to view any impediments to the rear of the aircraft.

During this mission, the CE had the responsibility of clearing the aircraft aft; however, he misjudged the aircraft's distance and rate of closure while maintaining obstacle avoidance during the landing and hovering sequence. This was due, in part, to the hasty decision to reposition the aircraft from the original LZ, which the crew had studied prior to the mission, to the new area with reasonable slope. In addition, had the CE announced, "Ramp's inside!" the pilot on the controls would have stopped the maneuver and possibly prevented this accident.

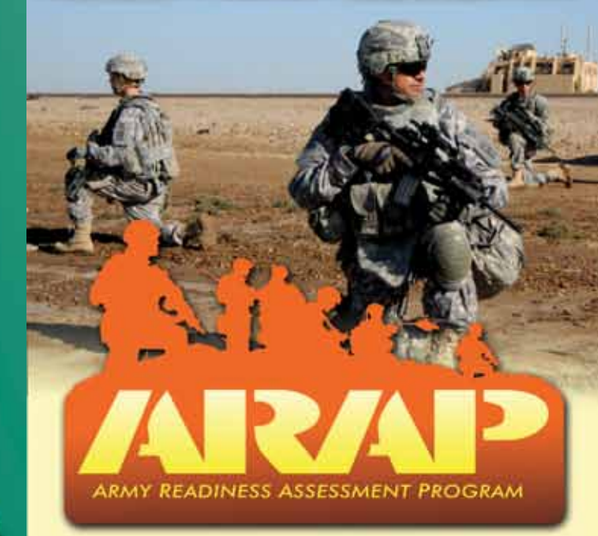
The crew did not consider this a high-risk mission because crew selection met the criteria and was adequate for the mission. However, taking into account the limited experience of the CE and gunner, the risk assessment should have been elevated. In addition, better crew coordination techniques could have been applied to the pinnacle landing attempt and the selection of the CE and gunner could have been changed for this mission.

If you have access to the Risk Management Information System (RMIS), found on the U.S. Army Combat Readiness/Safety Center Web site, you can learn from my mishap on June 17, 2008. I am thankful no lives were lost that day; however, a significant amount of equipment was destroyed.

Another accident similar to this one occurred about a year prior to mine; however, the entire crew died attempting the same task. A close friend of mine died in that accident, along with other brave and courageous Soldiers. Let's pay them honor and respect by learning from these valuable lessons and completing our future missions successfully.



ARE YOU READY?



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SHAFTED

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

Several years ago, I read an interesting article by a California Highway Patrol officer on what he called "high-horizon driving." He pointed out how important it is to look far enough down the road so you can avoid accidents, debris and other dangers. It didn't take a rocket scientist to see his ideas made sense. However, his point seems to be lost on some people — especially tailgaters. Not long after reading that article, I saw that graphically demonstrated.

I was driving southbound in a highway's left lane when I saw a 3-foot-long piece of angle iron a short distance ahead in the right lane. I wasn't particularly surprised. In the past, I'd seen pallets, mufflers and other debris turn this road into a slalom course for drivers. What really piqued my interest was what was going on in my rearview mirror. A short distance back in the right-hand lane was a car with two vehicles bunched up behind it. The speed limit was 55 mph and the two drivers were eating up each other's back bumpers as they tailgated the leading car.

Having no way to warn them, I briefly glanced into my rearview mirror to see what would unfold. The driver in the lead car could easily spot the angle iron in time to avoid it. The two tailgaters, however, would be in for a rude surprise.

Much to my amazement, the lead driver didn't react until the last second. Maybe she wasn't paying attention or maybe she thought it might be fun to teach the tailgaters a lesson. Whichever it was, she veered just enough to miss the piece of angle iron. Talk about a "teachable" moment for the drivers behind her!

The second driver ran over the angle iron with his left-hand tires. I half expected a blowout, especially since a lot of drivers there drove their tires down to the cords. Instead, the iron came out spinning like a helicopter rotor, headed straight for the second tailgater.

The iron went twirling beneath the second tailgater's car. I watched to see if a shower of sparks or a puff of smoke would indicate something worthwhile had just become "non-op." Key parts of an automobile's anatomy such as the engine, transmission, brake lines and steering components don't react well to being "shafted."

By some miracle, both tailgaters survived apparently unscathed. It could have been worse. I've also seen cinder blocks and other "goodies" lying on the road that might not pass so easily beneath your typical automobile.

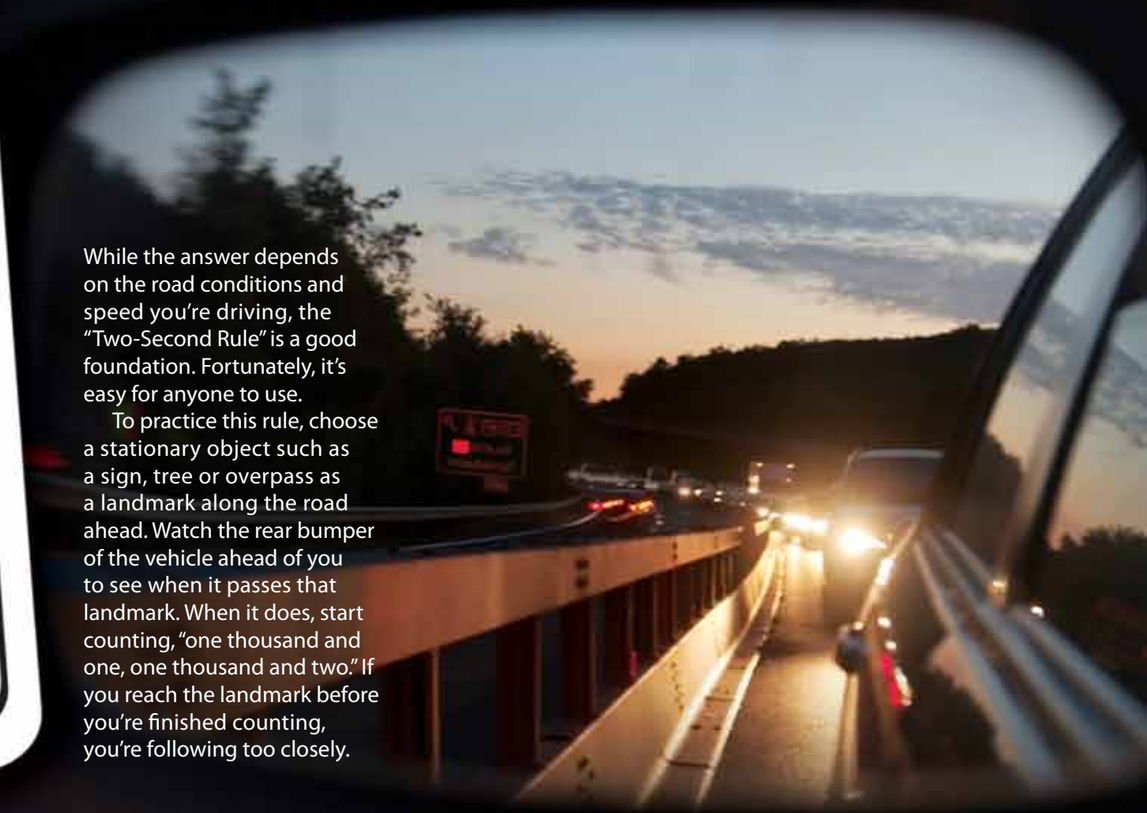
That got me thinking. I asked myself, "Do I allow enough following distance to see and dodge nasty objects in the road ahead?" That's not the same as, "Am I allowing a safe interval behind the car I'm following?" You see, short of hitting a stopped 18-wheeler, the car ahead of me is not likely to stop instantly. There will be a certain amount of time and distance involved.

By contrast, road debris is normally immobile. It doesn't warn you with brake lights, turn signals or flashers, nor is it moving forward and giving you more space to stop. If you can't spot it in time to avoid it, you get to "eat" it.

If you're tempted to crowd the back bumper of the vehicle ahead, you might want to play out this scenario inside your head. Then ask yourself which you'd rather be on the highway — slightly delayed or seriously "shafted."

MAJ. JEFFREY L. WEBBER
Joint Force Headquarters, Armor
South Carolina Army National Guard
Columbia, S.C.

Too Close FOR COMFORT



We all know what the best "safety" feature on a car is — the reflection of a police cruiser in the rearview mirror! That'll make anyone drive more defensively and stay well within the posted speed limit. But how often is our rearview mirror filled with something else just as attention-getting — a tailgater riding our back bumper and pushing us to go faster?

That recently happened to me when a "soccer mom" was eating up my back bumper on a two-lane state highway with a 55-mph speed limit. She was driving a Dodge minivan carrying two children and what looked like half the groceries from her local Wal-Mart.

I wondered why she was in such a hurry. Maybe she was trying to keep the ice cream from melting after her grocery run. Maybe she was attending to a crying, car-seat-restricted child that needed changing. Maybe she needed to get home to let the dog out before it soiled the carpet. In any event, she clearly wanted me to drive faster, move over, pull over or otherwise get the heck out of her way.

What can you do about drivers who see you doing the speed limit as an impediment to their travel? If you try using the "3 Es" of safety — enforcement, engineering and education — you'll be faced with certain limitations. Enforcement is not a reliable option because you can't expect a police officer to be on hand every time someone tailgates you. And while engineering — like antilock brakes — has shortened vehicle stopping distances, that doesn't really help tailgaters. They don't leave themselves enough time to react and put those brakes to good use. The only option left is education. Drivers need to understand what a proper following distance looks like.

So, you ask, how can you figure out the proper following distance? While the answer depends on the road conditions and speed you're driving, the "Two-Second Rule" is a good foundation. Fortunately, it's easy for anyone to use.

To practice this rule, choose a stationary object such as a sign, tree or overpass as a landmark along the road ahead. Watch the rear bumper of the vehicle ahead of you to see when it passes that landmark. When it does, start counting, "one thousand and one, one thousand and two." If you reach the landmark before you're finished counting, you're following too closely.

Two seconds is the minimum following distance you should maintain and applies to daytime driving in good weather at speeds of less than 40 mph. In poor weather or when traveling faster than 40 mph, you'll need more time to react. The National Highway Traffic Safety Administration offers the chart below to help you adjust to the road conditions you may encounter. (If several conditions apply, just add up the extra seconds for all of them.)

IF	ADD
You're traveling at more than 40 mph	2 seconds
You're driving at night	1 second
There is a motorcycle in front of you	1 second
There is fog or poor visibility	1 second
The pavement is wet	1 second
You're being tailgated	2 seconds
The tailgating vehicle is a bus or tractor-trailer	4 seconds
You're towing a trailer	2 seconds

Using the Two-Second Rule and adjusting for the conditions can keep you from running out of time, space and options. And remember, avoiding an accident is a lot easier than filling out a police report, swapping insurance information and waiting for a tow truck. Isn't that worth a couple seconds of your time?

Nuts and Bolts: Who Spiked the Bike? True Story

CHIEF WARRANT OFFICER 2 JUAN C. GARCIA
Company B, 563rd Aviation Support Brigade
Fort Campbell, Ky.

Editor's note: This column is dedicated to keeping readers up to date on vehicle recalls, crash test information and other items of interest on automotive and motorcycle safety. This month's "True Story" tells how a motorcycle rider on a Florida highway was nearly speared like a fish. And the kicker is — this wasn't a freak accident — it could happen to you!

If you have an automobile or motorcycle "True Story" to share, just e-mail it to safe.knowledge@us.army.mil. Please send pictures if you've got them.

I was riding my motorcycle on Florida State Highway 22 toward the town of Wewahitchka when I noticed another biker on the side of the road using his cell phone. He was standing next to his bike and, while there didn't seem to be any problem, I stopped to offer assistance. When I did, he pointed to the bottom of his bike and I noticed a 3-foot-long metal rod poking through the engine oil reservoir!

The gentleman introduced himself as Nick and, from the pictures on this page, you can see he was lucky to still be conscious, standing and unhurt. The bike is a 2004 Suzuki Marauder. Prior to this nonstandard "modification," it was in perfect condition — it didn't even have a scratch on it.

This was NOT a Custom Modification!

I asked him how this happened. He said he was cruising to work at Tyndall Air Force Base near Panama City, Fla., and didn't see the object lying in the road until it was too late to avoid it. He said he felt something hit the bottom of his bike and knew there was a problem when he looked in his mirror and didn't see anything come out behind him. A driver following him saw a puff of smoke that got thicker and thicker. He said Nick was able to bring the bike to a quick stop and, while he wasn't sure what Nick had hit, he knew it wasn't going to be good. They were both as amazed as I when they saw the size of the metal rod and how little apparent damage it did.

It Could Have Been Worse

You can see from the pictures that the rod is slightly bent, which is probably what caused the bike's front tire to kick it up off the road. This thing could've easily come up at a slightly different angle and gone through Nick's leg. Imagine trying to stop a bike at 70 mph with a rod sticking out of your leg or after a rod had gone through it! The rod also could've punctured the tire. I'll leave it to your imagination to consider what that would have done.

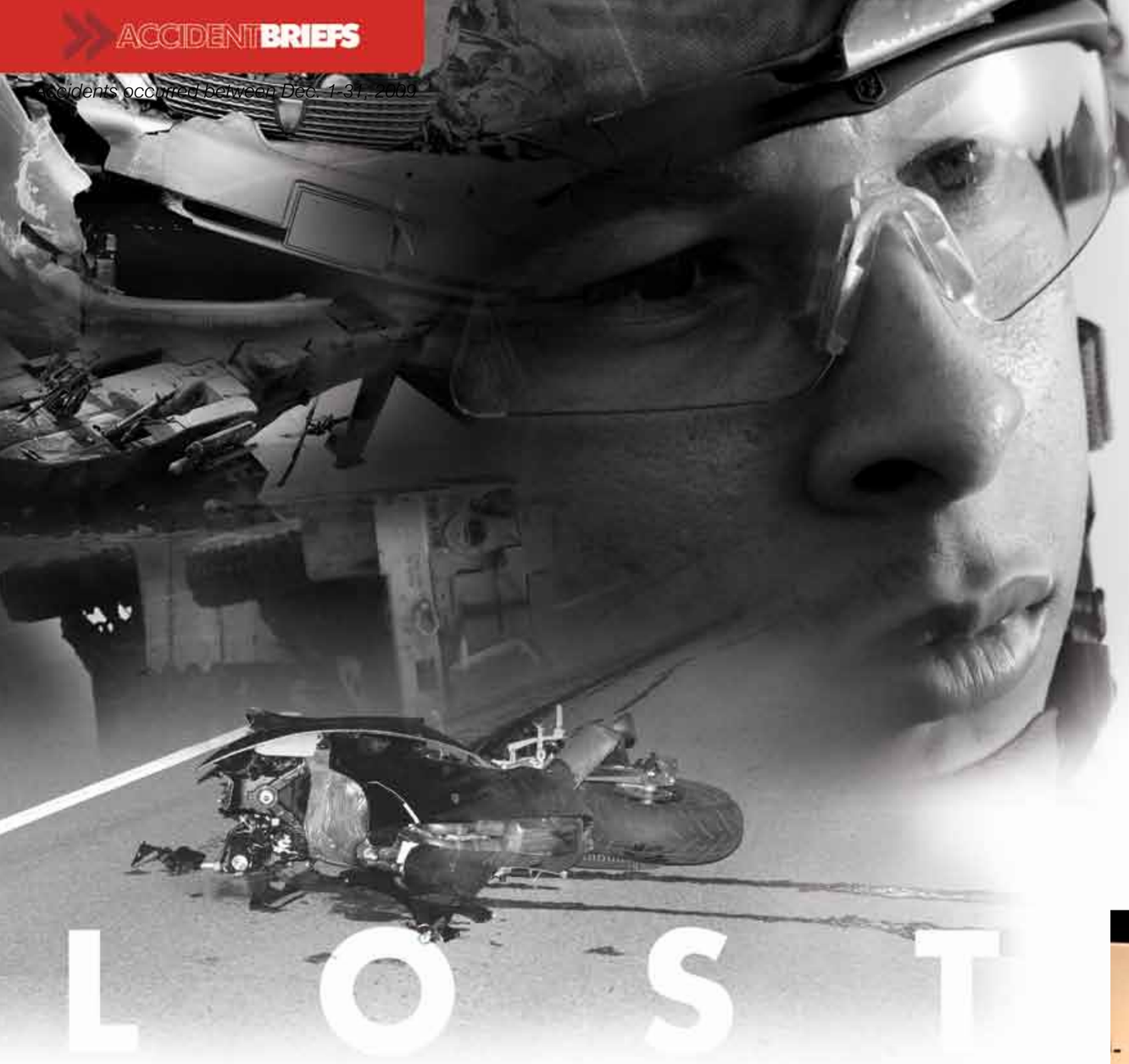
I think the lesson for us riders to learn from this incident is to watch where we're going. We need to pay attention to the road far enough ahead so we'll have time to avoid an object or, at least, slow down to limit the damage. For riders who tend to follow the vehicle ahead too closely, this is a perfect example of the nasty surprise you can get.

Remember to maintain a proper following distance and be alert for road hazards. You never know when a steel rod or something else on the road might be waiting for the chance to impale your bike — or you.

Heads-up for Riders

If you ride either a 2005-2009 Triumph Sprint ST 1050 or a 2009-2010 Ducati, your motorcycle might be under a safety recall. For more information on these motorcycles and their safety-related problems, go online to http://www-odi.nhtsa.dot.gov/recalls/recallsearch.cfm.

Accidents occurred between Dec. 1-31, 2009



AVIATION

CH-47D

CLASS C

- Postflight inspection revealed damage to the undercarriage and aft ramp of the aircraft. Damage was determined to be caused from contacting rocks during an infil landing.

HH-60M

CLASS B

- The main rotor blades contacted the tail rotor driveshaft during landing.

UAS

MQ-1C

CLASS C

- The unmanned aircraft (UA) entered an uncommanded roll during ground movement and contacted a data terminal tower.

MQ-5B

CLASS A

- The UA crashed during takeoff after the aircraft operator lost video link.

RQ-7B

CLASS B

- The UA contacted a barrier/wall shortly after launch and sustained damage.

CLASS C

- While returning to base, the UA experienced an engine failure at 4,000 feet above ground level. The recovery chute deployed; however, the aircraft sustained damage.
- The UA sustained damage when it experienced a simultaneous generator/ignition failure during landing.

GROUND

Other

CLASS A

- An Army contractor was driving a government vehicle when he left the road and veered into the opposing lane. The contractor attempted to regain control but collided head-on with a privately owned vehicle (POV). The driver of the POV was fatally injured.

Personnel Injury

CLASS B

- A Soldier's toes were amputated when they were crushed by a 700-pound medium girder bridge panel he was helping move.
- A Soldier lost two fingers when a smoke grenade detonated in his hand during combat simulation.

ARMY AVIATION LOSSES

Fiscal 2010

as of Mar. 7, 2010

Class A/Fatalities	
ATTACK	0/0
RECON	2/4
UTILITY	3/4
CARGO	1/0
TRAINING	0/0
FIXED-WING	1/0
UAS	3/0
TOTAL	10/8

ARMY GROUND LOSSES

Fiscal 2010

as of Mar. 7, 2010

Class A/Fatalities	
AMV	6/4
ACV	4/2
PERSONNEL INJURY includes weapons-handling accidents	9/10
FIRE/ EXPLOSIVE	0/0
PROPERTY DAMAGE	0/0
TOTAL	19/16

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- A Soldier's finger was amputated when his wedding band became caught as he dismounted a Mine Resistant Ambush Protected vehicle.

DRIVING

POV

CLASS A

- A Soldier was entering the autobahn in his POV when he lost control, spun and was struck on the driver's side by another vehicle. The impact caused the Soldier's POV to burst into flames, resulting in fatal injuries.
- A Soldier was driving a POV when it left the road, struck a tree and caught fire. The Soldier was not wearing his seat belt and suffered fatal injuries.
- A Soldier on leave was speeding in his vehicle when he lost control in adverse road conditions and struck a guardrail. The impact killed the Soldier.
- A Soldier was riding in the backseat of a POV that was broadsided by another vehicle that failed to yield right of way at an intersection. The Soldier was taken to a hospital, where he later died.

POM

CLASS A

- A National Guard Soldier was riding his privately owned motorcycle to his assigned armory when he lost control, overturned and slid into the path of an approaching vehicle. The Soldier died en route to the emergency room.

POV DRIVING LOSSES Fiscal 2010

as of Mar. 7, 2010	Class A/Fatalities
CAR	21/22
SUV/JEEP	3/3
TRUCK	3/3
MOTORCYCLE	7/7
PEDESTRIAN	3/4
OTHER*	1/1

*Includes: vans and ATVs

40 TOTAL DEATHS

Fiscal 2009: 45 3 year average: 47

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MOTORCYCLE MENTORSHIP PROGRAM

https://safety.army.mil/mmp/

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KNOWLEDGE

VOL 4 MAY 2010

OFFICIAL SAFETY MAGAZINE OF THE U.S. ARMY

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OFFICIAL SAFETY MAGAZINE OF THE U.S. ARMY

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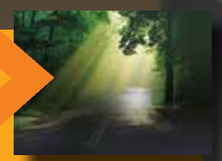

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FROM THE DASAF

"The **IMPORTANCE** of **ENGAGED** leadership in **SOLDIER SAFETY** is without question the most **IMPORTANT** and **ENDURING EFFORT** we **OWE** our Soldiers."

TAKE OWNERSHIP OF YOUR SAFETY

Around the globe, motorcyclists throughout our great Army are removing the dust covers from their bikes and charging up the batteries, eager to begin the 2010 riding season. Ask any motorcycle enthusiast what they enjoy most about their hobby and they'll probably tell you it's the exhilaration and freedom that comes with open air and a long stretch of highway. With more motorcycles than ever registered on Army installations, it's clear riding has become the off-duty activity of choice for many of our Soldiers.

All the things that make motorcycling great, however, are also what make it so risky for inexperienced or undisciplined riders. Even so, during fiscal 2009, our Army made significant progress in turning the arrow down on motorcycle fatalities, with a 37-percent overall reduction from the previous fiscal year. The good news is we're on track to push that number even lower in fiscal 2010. More than halfway through the year, we've experienced three fewer fatalities as compared to the same time frame in fiscal 2009.

Although we've made great strides in reducing these fatalities, we haven't been able to escape the problem of indiscipline. Of the last 22 fatal accidents where speed was reported, 18 were attributed to excessive speed. And in the 33 fatal accidents between fiscal 2009 and to date in 2010 where the status of Motorcycle Safety Foundation training is known, an overwhelming 85 percent had completed an approved MSF course. These statistics show that even when these Soldiers had the proper training, many still chose to disregard the standard at the cost of their futures.

During the past few years, our Army leadership has responded to these issues with a variety of innovative programs geared toward keeping our Soldiers safe and responsible on their motorcycles. Included among these initiatives are the highly successful Motorcycle Mentorship Program (MMP), which pairs novice riders with experienced mentors in a friendly, peer group setting, and investment in motorcycle simulators to prepare Soldiers for common hazards on the open road.

Another best practices initiative that's gaining ground on our installations is the progressive training model, where Soldiers begin their motorcycle safety experience in the Army-mandated Basic RiderCourse, but progress through higher-level training to build upon and sustain advanced riding skills. This initiative will be fully resourced in fiscal 2012 and beyond across our Army, but these great efforts at installations across the force are making a big difference already.

The importance of engaged leadership in Soldier safety is without question the most important and enduring effort we owe our Soldiers. Ultimately, it is up to the individual to make the right decisions to stay alive, but Leaders and buddies can help. As we observe Motorcycle Safety Awareness Month this May, I ask you to take ownership of your safety and find out if your installation offers any of these great programs. More information on the MMP, installation-specific rider associations and clubs and upcoming rider events are all available on the USACR/Safety Center Web site at https://safety.army.mil/mmp/. Always remember that even when you're off the installation, your duties and obligations as a Soldier remain, regardless of state or local law, so keep that personal protective equipment on and wear it properly.

The next few months will offer perfect conditions for riding and other fun activities, so make sure you're prepared for wherever the road may take you. We kicked off our annual Army Safe Summer campaign in April, and a wealth of summer safety information is available via the "Campaign Corner" tab on our Web site. Please share this information with your fellow Soldiers and Families to make this summer your most enjoyable yet.

Thank you for what you do every day for our nation and our Army. Our Band of Brothers and Sisters remains strong due to your work and dedication, and I wish each of you a safe and happy start to the summer season.

Army Safe Is Army Strong!

WILLIAM T. WOLF
Brigadier General, USA
Director of Army Safety

RECIPE FOR AN ACCIDENT

COMPILED BY THE KNOWLEDGE STAFF

The squadron task force had been in country for several months flying reconnaissance and security missions. The crew day started out like any other for the scout weapons team (SWT), flying out of a forward operating base in Afghanistan. The SWT consisted of two OH-58D aircraft. Chalk 1 was responsible for performing the low-level reconnaissance, while their wingman provided overall area security.

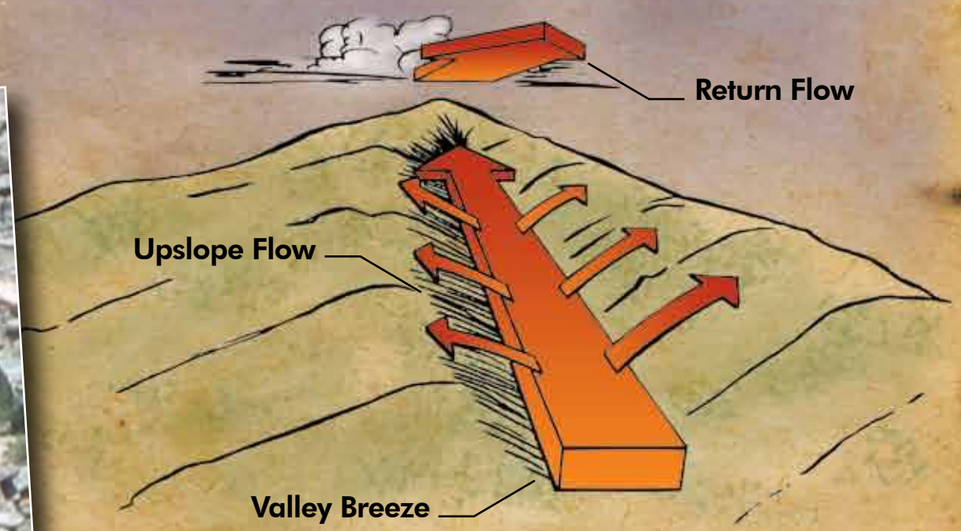
This day's mission was to conduct a show-of-force operation followed by named areas of interest (NAI) reconnaissance of a remote village. The weather forecast was for clear skies and unrestricted visibility with the day's high temperature slightly above 100 F. The highest NAI reconnoitered was at about 5,000 feet mean sea level. Chalk 1's pilot in command (PC) and troop maintenance pilot had almost 3,000 hours total flight time. His co-pilot (PI) had nearly 900 hours, with half of that combat time.

The SWT refueled at a nearby forward arming and refueling point (FARP). Weighing 5,100 pounds, the aircraft departed the FARP within the maximum gross weight of 5,200 pounds. Following refuel, the SWT shifted to the north and began reconnaissance of an area known to be frequented by insurgent forces.

Chalk 1 moved east from a valley to an adjacent parallel draw to explore a second NAI. The valley and the draw were generally oriented north/south. Chalk 2 orbited high over the draw to cover Chalk 1 as they conducted the reconnaissance. Chalk 1 entered the draw at 40 knots indicated airspeed (KIAS) at an altitude of about 100 feet above ground level and began to maneuver up the draw to the northeast. About halfway up, Chalk 1 turned to the eastern side of the draw and continued up with an approximate heading of 040 degrees. As they maneuvered up the draw, both crewmembers focused their attention outside the aircraft, unaware their airspeed and altitude were steadily decreasing. Within a few minutes, their airspeed had slowed to less than 20 KIAS and the aircraft lost translational lift. Both crewmembers instantly realized they had gotten into a situation where they didn't have enough power to continue maneuvering safely.

The forecasted winds were from 090 degrees at 9 knots. However, unbeknownst to the crew, the predominant winds in this area had shifted to winds from the south at 10 knots. The winds in the draw at this time were about 10 to 15 knots from 220 degrees. This was a result of the channeling effect in mountainous areas. The predominant winds in the area were from 170 degrees, but the predominant winds channel off into the adjacent valleys and draws (as depicted below).

WHAT HAPPENED?



The acceleration of these winds as they move upward in progressively narrowing terrain is known as the venturi effect. Chalk 1 had an estimated heading of 014 degrees, which created a left-quartering 15-knot tailwind. This tailwind occurred in an aerodynamic region where the weathercock stability and vortex ring state areas exist. Winds within the weathercock region will attempt to weathervane the aircraft into the relative wind. In addition to this, winds within the vortex ring state can cause tail rotor thrust variations. These two conditions acted on the aircraft simultaneously and created a condition where aircraft control did not feel normal to the pilot on the controls.

The crew decided to get out of this precarious condition by flying back down the draw. The PI cleared the aircraft left, which was the most expeditious way to exit the draw. Initially, the PC turned left, but stated that it didn't feel right. The PC then turned right, which was the side of the aircraft where he was seated. Almost immediately, he realized he had turned into rising terrain and did not have enough space to continue the sharp turn to avoid the terrain. He then reversed course and turned left in an effort to complete a 270-degree turn to begin a descent down the draw. Shortly thereafter, the wind forced the crew into a controlled shallow descent into terrain.

The PC applied 97 percent of the continuous torque available, which meant he still had another 3 percent. He could have entered a 10-second transient condition where he would have had up to 116 percent torque available to "execute his out," that is, complete his turn to fly back down the draw and regain airspeed and altitude. Add the 3 percent remaining in his normal operating range with the 10-second transient power available, and the crew had almost 19 percent added torque available to get out of this situation. However, the PC was reluctant to approach his continuous maximum torque available because he was concerned with getting into an engine overtorque condition. He selected a relatively small, but flat, rocky outcropping to land.

The aircraft continued to settle and there was a brief pause, at which time the PC attempted to resume flight by applying collective. Shortly thereafter, the crew heard a loud pop, as the main rotor blades contacted tall bushes. Immediately the crew felt violent vibrations throughout the aircraft, followed by a loss of control. This resulted in the aircraft rapidly yawing to the right and subsequently rolling downhill.

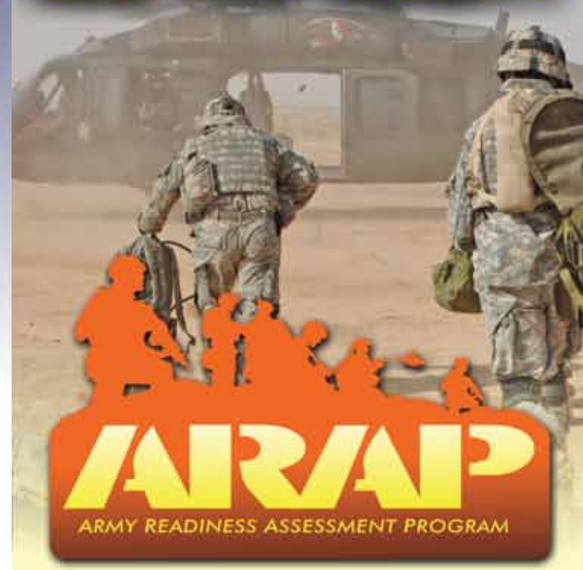
Lessons Learned

- **Flight in mountainous terrain.** The PC failed to monitor the changing environmental conditions after the crew departed the FARP to begin their reconnaissance mission in mountainous terrain. These changing environmental conditions included winds in the draw, along with increasing mean sea level and ambient temperatures.

- **Cross-checking instruments.** The PC, who was the pilot on the flight controls, failed to crosscheck inside the cockpit. By doing this, he was not cognizant of his decreasing airspeed or his increasing torque and turbine gas temperature (TGT). This information was necessary for proper decision-making to maintain a safe flight profile as he ascended the draw. The PC's actions reflected a combination of overconfidence and complacency. The PC had almost 3,000 total hours and had been conducting routine combat missions in this area of operation for several months. He was confident in his ability to perform a relatively simple day visual flight rules reconnaissance mission. Training Circular 1-248, OH-58D Aircrew Training Manual (ATM), page 4-3: Chapter 4, discusses the need for the pilot on the controls to conduct momentary scans inside the cockpit during crosschecks. The ATM also specifies the crew briefing checklist in Chapter 4.

- **Crew coordination.** Inadequate crew coordination began from the time the aircraft refueled until ground impact 20 minutes later. The PC did not solicit PI assistance in resolving his underpowered condition as it developed. If the PI was cognizant of the decreasing airspeed, the high torque setting and the high TGT condition, he should have spoken up and provided the necessary information to assist the pilot on the controls. If crew coordination had been conducted, the outcome might have been different. Instead, these three "ingredients" became a recipe for an accident.

ARE YOU READY?



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TAKE A *Hike*

MICHAEL WOOD
8th Army (Field Army)
South Korea

For many Americans, a trip to the great outdoors can be the perfect way to leave behind the hustle and bustle of everyday life. Before communing with Mother Nature, however, hikers and campers must first ensure they're properly prepared.

Every year, Families load up their gear for camping or hiking getaways into the wilderness or mountains. While these outdoor activities may seem relatively safe, they can be deadly for those who don't take the appropriate safety precautions.

Since fiscal 2005, the Army has lost five Soldiers to off-duty hiking and mountain climbing accidents — all attributed to falls. Earlier this year, a Soldier died when he fell about 400 feet from a cliff while hiking with a friend. At the time of the accident, the Soldier was attempting to retrieve equipment he had dropped during a previous hike.

Before heading out for any outdoors adventure, it's important to plan ahead. Campers and hikers should learn as much as possible about the area they will visit. They should have a written plan of activities, a map of the area, emergency phone numbers and the locations of medical assistance, lodges and park rangers. It's also a good idea to leave a copy of these plans with someone at home.

Once at their destination, the California Department of Parks and Recreation recommends hikers and campers adhere to the following safety tips:

- Always hike with a friend or Family member.
- Take plenty of drinking water. Leave stream, river and lake water for the park wildlife. Although it looks clean and refreshing, mountain stream water can make you ill.
- Always let someone back at camp or home know where you're going and when you plan to return. Take a mobile phone for emergencies or to let them know you have returned safely.
- Don't leave the hiking trail. Doing so increases the chances of suffering an injury or getting lost.
- Be aware of local wildlife. Whenever you encounter wildlife on a trail, keep your distance, back away slowly and do not run. Report your sightings to a park ranger.

After a long day of trekking through the woods, many hikers like to spend the evening relaxing by a campfire. By following a few simple fire safety rules from the U.S. Department of Agriculture Forest Service, you can prevent a smoldering ember from becoming a wildfire.

- Dig a small pit away from overhanging branches. (Most parks have campfire pits ready and waiting for you.)
- Circle the pit with rocks or be sure it already has a metal fire ring.
- Clear a 5-foot area around the pit down to the soil.
- Keep a bucket of water and shovel nearby.
- Stack extra wood upwind and away from the fire.
- After lighting, do not discard the match until it is cold.
- Never leave a campfire unattended, not even for a minute.

The weather can also present challenges to hikers and campers. The National Oceanic and Atmospheric Administration reports that lighting, which is a serious hazard to any outdoor recreational activity, kills an average of 62 people a year.

If you find yourself unexpectedly caught in inclement weather while hiking or camping, do not seek shelter under tall trees, tents or near metal objects. The best shelter is a building or your vehicle. If caught in open terrain, seek lower areas and stay at least 15 feet from other members of your group.

There's nothing quite like the sights and sounds of nature. By placing safety first, you can help ensure your Family's outdoor activities are enjoyable experiences for years to come.

IT LOOKED EASY ON TV

CHIEF WARRANT OFFICER 2 JUSTIN BOWSER
A Troop, 7th Squadron, 17th Cavalry Regiment
Fort Campbell, Ky.

How often do you see a professional do something tricky and make it look easy on TV? You know what usually follows — a narrator warning you, "Do not try this at home." Suppose there's a good reason they give these warnings?

A few years ago, a friend and I were on our dirt bikes in a popular off-road riding area. We stopped our bikes at the bottom of a very tall hill and talked about how we'd never seen anyone make it to the top. Not only was it steep, erosion had uncovered the top foot of a gas line running from the hill's top to its bottom. Moments later, a guy rode up on a new dirt bike, wearing all new riding gear. You could tell he had just bought the bike. It was probably the first time he had ridden it, since there weren't any scratches, nicks or dings.

We were surprised when he suddenly gave his bike full throttle and started flying up the hill. By the time he made it a quarter of the way, we could see he lacked experience by the trouble he was having staying on his bike. He made it about three-quarters of the way up when the bike violently flipped backward. When it did, he landed on the exposed gas pipe and tumbled to the bottom of the hill — his bike right behind him. My buddy stopped the bike so it didn't land on the rider.

When we asked him how long he'd been riding, he said about a week. We then asked him why he would try to climb such a big hill when he didn't know how to ride. He said it looked easy on TV and he thought he could make it.

That got me thinking. How many times have we, as Leaders, talked to our Soldiers about the dangers of riding on the street? We've put control measures in place, requiring Soldiers take special training to ride safely and within the regulations. However, when Soldiers buy a dirt bike or an all-terrain-vehicle (ATV), we often don't even ask if they know how to ride it. Typically, we just tell them to be careful and have a good time over the weekend. We just assume they've already ridden a dirt bike or ATV and know the dangers.

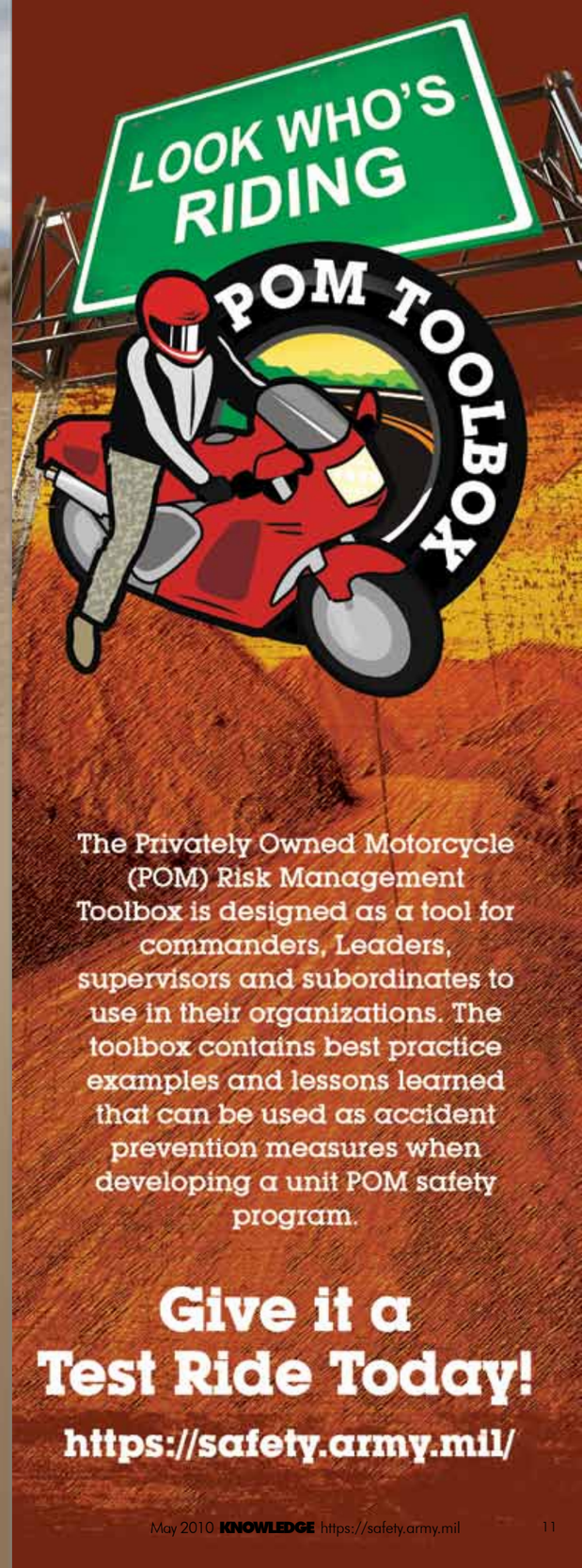
A growing number of Soldiers are taking advantage of the relatively low price of dirt bikes and ATVs and buying them. The problem is many Soldiers arrive at the motorcycle dealership unaware of how to pick a machine suited for their skill level. Instead, they tend to buy the biggest one they can afford. This can be extremely dangerous because these machines perform very differently, depending on engine size. For example, a Soldier who could learn to ride safely on a 125cc motorcycle might end up killing himself trying to control a 450cc dirt bike. The same goes for ATVs. Operating a four-wheel-drive quad is completely different from riding an ATV used for racing.

The point I'm trying to make is we need to include dirt bike and ATV training into our motorcycle safety programs. Soldiers often don't know the proper personal protective equipment (PPE) for off-road riding and lack a mentorship program to help them with their new dirt bike or ATV. The accident in this article could've been prevented had the rider been accompanied by a more experienced rider who could warn him the climb was way beyond his skill level.

So, what can we do? I suggest we appoint a mentor in our units who can help new dirt bike and ATV riders avoid buying more machine than they can safely handle. By better matching the machine to the rider's skills, we can help prevent accidents in the near term and build good riding skills for the long term. We also need motorcycle mentorship programs (MMPs) for new off-road riders. Experienced off-road riders can take new dirt bike and ATV riders out and show them the basics so their learning curve isn't punctuated with accidents.

Soldiers often go riding alone on the weekends without letting anyone know where they're riding. Eight years ago, a Soldier crashed on a remote dirt road and died because there was no one around to help him. To avoid repeating that, it's important to establish a check-out and check-in policy with a friend or Leader who'll know where to start looking if we don't make it home that night. I can't imagine being stranded in the woods for days with a broken back, hoping someone would eventually ride by and find me.

Off-road riding might look easy, but it takes a great deal of training and many hours of practice to become proficient. Many of the riders you see on TV began riding motorcycles at a young age and were trained by professional riders to improve their skills. Just as it is vital to get proper training to ride safely on the street, it's also essential off-road riders seek training from qualified personnel and then practice, practice, practice!



SINK or Swim?

COURTESY OF THE U.S. COAST GUARD
www.uscgboating.org

A skydiver wouldn't dare jump from a plane without a parachute. So why would a boater choose to not wear a personal flotation device (PFD)?

Boaters enjoy the feel of sun and spray, so it's tempting for some to boat without wearing a PFD — especially on nice days. Others might use the excuse that PFDs are bulky and uncomfortable. While that might have been the case in the past, modern PFDs are available in a wide variety of shapes, colors and sizes. Many are thin and flexible, and some are inflatable and as compact as a scarf or fanny pack until they hit water, when they automatically fill with air. With all of these options, there's now no reason not to wear a PFD on the water.

The U.S. Coast Guard estimates that PFDs could have saved the lives of more than 80 percent of boating fatality victims. As a boat operator, you're in command of the safety of your passengers. Accidents can — and do — happen with terrifying speed on the water. Because there's rarely time to reach stowed PFDs, it's recommended everyone on the boat wear theirs at all times while afloat. The Coast Guard offers the following tips to help ensure you stay safe on the water:

Test Your PFD

- Try on your PFD to see if it fits comfortably snug. A PFD is designed to not ride up on the body when in the water. But, when a wearer's stomach is larger than the chest, ride-up may occur. Before using a PFD, test it in the water to establish that excessive ride-up does not impair the device's performance.
- To check the buoyancy of your PFD in the water, relax your body and let your head tilt back. Make sure your PFD keeps your chin above water and you can breathe easily.
- Be aware that your PFD may not act the same in swift or rough water as in calm water. The clothes you wear and the items in your pockets may also change the way your PFD works.
- If your mouth is not well above the water, get a new PFD or one with more buoyancy.

Wear Your PFD

- Most drownings occur way out at sea, right? Wrong! Actually, nine out of 10 drownings occur in inland waters, and most victims were within a few feet of safety. Most of the victims owned PFDs, but they died without them. A wearable PFD can save your life — if you wear it.
- If you haven't been wearing your PFD because of the way it makes you look or feel, there's good news. Today's PFDs fit better, look better and are easy to move around in.
- Before you shove off, make sure all aboard are wearing PFDs. To work best, PFDs must be worn with all straps, zippers and ties fastened. Tuck in any loose strap ends to avoid getting hung-up.

FYI

For more information about boating safety and personal flotation devices, visit the Personal Flotation Device Manufacturers Association Web site at www.pfdma.org/ or http://boatsafe.com/.

- When you don't wear your PFD, the odds are against you. You're taking a chance on your life.

Proper Care for a PFD

- Don't alter a PFD. If yours doesn't fit, get one that does. Play it safe. An altered PFD may not save your life.
- Don't put heavy objects on your PFD or use it for a kneeling pad or boat fender. PFDs lose buoyancy when crushed.
- Let your PFD drip dry thoroughly before putting it away. Always stow it in a well-ventilated place.
- Don't leave your PFD onboard for long periods when the boat is not in use.
- Never dry your PFD on a radiator, heater or any other direct heat source.
- Put your name on your PFD if you're the only wearer.

Teach Them Young

All states have regulations regarding PFD wear by children. Because an adult-sized device will not work for children, special PFDs are available. Child PFD approvals are based on the child's weight. Check the user weight on the label or the approval statement. It will read something like, "Approved for use ... by persons weighing __ lbs." They can be marked "less than 30," "30 to 50," "less than 50" or "50 to 90."

To work properly, a PFD must fit snugly on a child. To check for a good fit, pick up the child by the shoulders of the PFD. If it fits properly, the child's chin and ears will not slip through. However, PFDs are not babysitters. Even though a child wears a PFD when on or near the water, an adult should always be there too. Parents need to remember that inflatable toys and rafts should not be used in place of a PFD.

Outfitting your child with a proper-fitting PFD is only the first step. They must also know what to do if they unexpectedly end up in the water. Children tend to panic when they suddenly fall into the water. This causes them to move their arms and legs violently, making it hard to float safely in a PFD. While the PFD will keep a child afloat, it might not keep a struggling child face-up. That's why it's so important to teach children how to put on a PFD and help them get used to wearing one in the water.

Conclusion

A PFD can save your life should your boat capsize on rough water, if you're thrown from the boat as a result of a collision or if you're unable to swim because of heavy or waterlogged clothing. There are a lot of new options now available for boaters, so try them out and see what's recommended for your water-related activities. Remember, the best PFD is the one you wear.«

LIFE SAVERS

To meet U.S. Coast Guard (USCG) requirements, a boat must have a USCG-approved personal flotation device (PFD) for each person aboard. Boats 16 feet and longer must also have at least one throwable flotation device. The following are the recommended types of PFDs.

- **Type I (offshore life jacket)** — Designed for extended survival in rough, open water. It usually will turn an unconscious person face up. This is the best PFD to keep you afloat in remote regions where rescue may be slow in coming.
- **Type II (near-shore buoyant vest)** — Comes in several sizes for adults and children and is for calm inland water where there is a chance of fast rescue. It is less bulky and less expensive than a Type I, and many will turn an unconscious person face-up in the water.
- **Type III (flotation aid)** — Considered the most comfortable, with styles for different boating activities and sports. They are for use in calm water where there is a good chance of fast rescue since they will generally not turn an unconscious person face-up. Flotation aids come in many sizes and styles.
- **Type IV (throwable device)** — Designed to be thrown to a person in the water. Throwable devices include boat cushions, ring buoys and horseshoe buoys. They are not designed to be worn and must be supplemented by a wearable PFD. It is important to keep these devices immediately available for emergencies, and they should not be used for small children, nonswimmers or unconscious people.
- **Type V (special-use device)** — Includes work vests, deck suits and hybrids for restricted use. Hybrid vests contain some internal buoyancy and are inflatable to provide additional flotation.

Source: Personal Flotation Device Manufacturers Association

The Road Less Traveled

LT. COL. MIKE MILLER
Commandant of the Marine Corps-Safety Division
Camp Lejeune, N.C.

The day began as a perfect, cool, sunny Sunday morning in early October. I was driving along the Missouri–Arkansas state line from my home in Overland Park, Kan., to visit relatives in Pea Ridge, Ark. This easy, 225-mile drive should have taken me about four hours. Instead, I arrived 24 hours late and $1,500 lighter in the wallet.

I started my journey at 6 a.m. after a good night's sleep. My trusty Dodge Dakota pickup was in excellent condition with four new tires providing a firm grip on the asphalt. I was eagerly looking forward to the drive on U.S. Highway 71, a direct route south from metro Kansas City to northwest Arkansas and the shortest route to my Uncle Norman's Quail Ridge farm. "Seventy-one highway," — as the locals call it — is a modern, limited-access, four-lane road resembling an interstate highway in every regard. I had thoroughly planned the trip, applying the tenets of risk management.

Just a few miles north of the Arkansas state line, I elected to take a more "scenic" route. I turned onto Missouri State Highway 90, a two-lane blacktop road that passed through the "bourgeoning" metropolis of Jane, Mo. This proved to be a highly significant and costly tactical error.

Cruising along at 45 mph, I noticed a dense line of trees growing along the right side of the road. These trees effectively obscured a couple of trailer homes located on a gravel road intersecting my road from the right. Through my peripheral vision, I detected movement behind the trees. What I thought was a lone running black dog, turned out to be a dog chasing a 1969 Chevrolet step-side pickup.

> "**RESEARCH** by the National Highway Traffic Safety Adminstration **REVEALS** that more than **70 PERCENT** of all **FATAL ACCIDENTS** happen on **RURAL** roads with speed **LIMITS OF 55** mph or higher."

The driver of the ancient Chevy never paused at the intersection and pulled right in front of me. Those trees had probably screened his vision just as they had mine. The look on his face was one of horror. Just before the impact, he looked at me, realizing he had driven into my lane and a Dakota "smack-down" was imminent. Shouting a colorful expletive, I stood on my antilock brakes, but there was nowhere to go. I braced for impact.

I remember hearing a loud BANG and then my truck's cab filled with smoke from the air bag. Snug in my seat belt, I don't recall my face bouncing off the bag; but later I had to wash off the white powder. I had been careful to keep my hands on the steering wheel's 9 and 3 o'clock positions. That's important because following the conventional wisdom of placing your hands at the 10 and 2 o'clock positions can lead to serious injuries when the air bag deploys. Suffering only minor burns to both thumbs, I was extremely lucky to be uninjured. My truck didn't fare so well. It was crunched beyond repair.

I consider myself fortunate to be alive. Research by the National Highway Traffic Safety Adminstration reveals that more than 70 percent of all fatal accidents happen on rural roads with speed limits of 55 mph or higher. These higher speeds, coupled with sometimes poorly engineered roads and slower emergency response times, all combine to make rural driving more hazardous. The state trooper responding to my accident was amazed (based upon my crumpled truck) that I was not seriously injured. I attribute that to the fact I consistently wear my seat belt, drive within the posted speed limit and have antilock brakes. If only the other driver had insurance, this mishap would have only cost me time and inconvenience — not cash!

We can all learn from others. Motor vehicle collisions will happen even when you're doing everything right. Also, don't assume high-speed interstates are the most dangerous places you can drive. Sometimes it's while you're enjoying a more relaxed "scenic" route that the unexpected happens. Don't presume you are safe just because you're in an idyllic setting. Always watch out for the "other guy." He might just make you a victim of his bad decisions.

ONE IRRATIONAL DECISION CAN CHANGE EVERYTHING

CHIEF WARRANT OFFICER 5 RANDY MILLER
1st Battalion, 351st Training Support Battalion
Fort Stewart, Ga.

As night approached, the crews were getting ready for their night vision goggle (NVG) training mission. The task for this night was to conduct readiness level (RL) progression for hoist operations. As the crew adjusted their NVGs and "cranked" the UH-60, they had no idea a routine litter hoist training mission would result in something much more.

Performing RL progression tasks are standard procedures; yet crews often approach these tasks with anticipation and excitement, especially the "new guys." On this night, one of our junior pilots (PI) was completing his aerial reconnaissance low-altitude progression tasks for hoist operations. The crew mix was right — an experienced pilot in command (PC) and a senior crew chief, both having conducted this mission on several occasions, were paired with an inexperienced PI. The flight plan was routine and the PI briefed the mission to the PC and crew chief. Neither crewmember had any serious questions about the mission. At the successful completion of this training, the PI was anticipating a progression to RL 1.

This training mission was a combination RL progression flight and training for ground crews to learn how to hook up a litter for aerial extraction. The PI brought the aircraft to a 50-foot hover above the ground level and the crew chief deployed the hoist, lowering a litter to the trainees on the ground. Some of them had eagerly discussed how awesome it would be to be winched up in the litter to the aircraft hovering overhead. This was the eventual plan; but, first, a few practice winch down-and-up exercises were required to make sure everything worked as planned.

With the cable lowered to the ground and the simulated initial hookup, the Stokes litter basket began its ascent to the aircraft. During the ascent, the litter began to swing back and forth, with each oscillation more pronounced the closer it got to the aircraft. Ultimately, the litter rapidly swung out of control. The crew chief reached out with his gloved hand to control the back-and-forth movement; however, his attempt proved useless and the oscillations continued. The crew chief then used both hands to try and stop the rapid oscillations, but to no avail.

The crew chief's leg dangled outside the aircraft's door as he used his whole body in an attempt to stop the swinging litter. Suddenly, his leg became wedged between the hoist cable and cabin floor. The hoist continued to apply pressure to the cable until, without warning, the litter swung out, struck something on the aircraft and crashed to the ground with about 3 feet of steel cable hanging from the attachment point.

Fortunately, no one was injured nor was any equipment damaged. The aircraft landed safely and the crew chief was treated for minor bruising to his leg. The UH-60 sustained minor cosmetic damage from the cable scraping the airframe.

As the aircraft crew joined the trainees on the ground, everyone silently said a prayer of thanks that no one was in the litter taking the "ride of their life!" Maintenance personnel inspected the aircraft immediately to determine why the cable suddenly snapped. Upon closer inspection, they found the cable had not snapped; rather, a protruding bolt from the aircraft wheel had cut it. This caused the cable to fail and the litter to fall 70 feet.

Lessons Learned

The battalion safety officer immediately conducted an accident investigation and found additional failures that contributed to the accident. The crew chief did not place his intercom switch to "hot mike" to allow crew coordination and he failed to lower the hoist cable without the litter attached to reduce litter oscillations. This failure, along with the failure to crew coordinate with the pilots, compounded the problems with handling the load.

Maintenance personnel tightened the protruding bolt that caused the cable failure. The battalion commander directed the company to inspect all aircraft for other bolts that might have backed out of their required positions, as well as determine if maintenance was performing by the book. Fortunately, no other aircraft had bolts protruding from them.

The next day, the battalion commander ordered a safety stand down to discuss lessons learned and to remind all aviation crewmembers that flying helicopters is dangerous business. He stressed that flight crews should plan their missions and preflight their aircraft with meticulous detail. Risk assessments are not just a "check-the-box" exercise, they take aviators one step closer to accident prevention.

Thankfully, no one was injured in this incident. Nevertheless, the ground personnel recognized how close they came to death. Just thinking about "joy riding" in the litter on the hoist up to the aircraft wasn't using good common sense. This incident is a good example of the dangerous jobs we perform every day. It is also a reminder how the addition of variables can affect mission risk. Use common sense when planning your next mission. One irrational decision can change everything.

CALIFORNIA ROLL = CAREER SUICIDE

CHIEF WARRANT OFFICER 3 ALEXANDER CONDE
Detachment 25, Operational Support Airlift
Tennessee Army National Guard
Smyrna, Tenn.

It had been a difficult and challenging time in flight training the previous few weeks at Fort Rucker, Ala. I was a very green warrant officer not long out of candidate school and only 24 years old. I thought I had the world by the tail and my future looked so bright I had to wear shades!

Given the hard work we had been putting in the past few days, a number of us decided to relieve some stress at a local Daleville watering hole. We arrived early in the evening and commenced to partying like the young guns we were. The drinks were flowing and we were having fun. It was starting to be a great evening.

But we made a tactical error in not identifying a designated driver or planning for a cab. Despite my increasingly inebriated state, I recognized that fact and decided to lay off drinking the rest of the evening so I could drive us home. I switched to drinking water, hoping that would enable me to safely operate a car in a couple of hours. (*Not exactly a foolproof strategy — the Eds.*)

The night wound down and we closed the bar. I felt fine to drive (or so I thought) and my cohort was in no condition to get behind the wheel. I planned to drive us back to the bachelor officers' quarters (BOQ) on post. Shortly after getting into the car, my buddy passed out in the passenger's seat. I drove to a rarely used back gate near the bar that would provide us the shortest route to the BOQ, minimizing our time on the road.

So far, so good! The BOQ was in view and it would only take a minute or two to drop my buddy off and then move on to my room. It was then I spotted a blue light flashing in my rearview mirror. A sight everyone dreads seeing was at my six. I was being pulled over. I couldn't believe it was happening to me.

I pulled over to the side of the road and waited for the military police (MP) to approach. Thoughts of the career suicide I was about to commit were running through my head. If I was lucky, I could get my enlisted job back on M3 Bradleys. Worst case, I could be back at Pizza Hut, tossing pies.

I rolled down the window as the MP came up to the side of my car. The first thing he noticed was my passed-out friend in the passenger's seat.

"Do you know why I pulled you over," he asked.

"Uh, I have no idea," I replied.

"You didn't come to a full stop at the stop sign (aka "California Roll") back there when you came on post," he said. "What's wrong with him," he asked, pointing to my friend.

I told him we had been at a bar and he'd had too much to drink and passed out. As I handed my license and insurance to the MP, he asked me if I had been drinking.

"No, of course not," I lied.

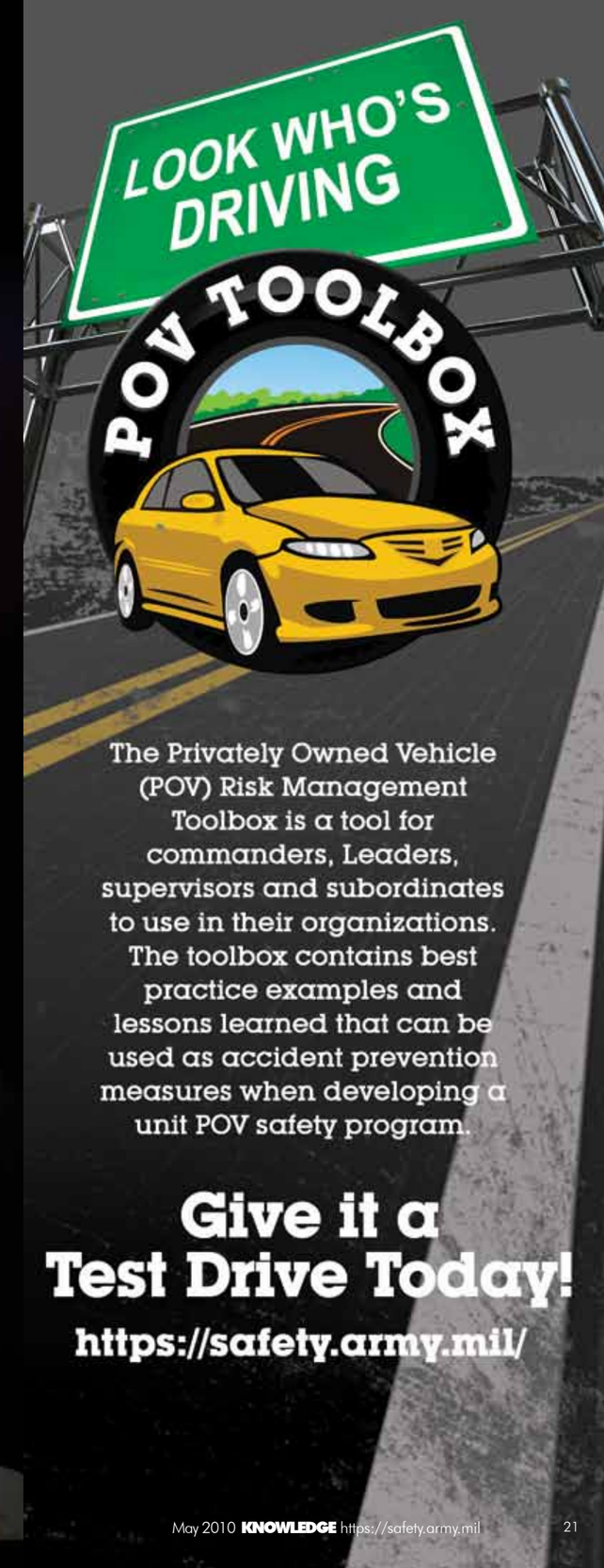
He proceeded to return to his vehicle as another MP car parked in front of mine.

After a short delay, both MPs approached my vehicle. They clearly doubted my story as they asked me to step out of the vehicle and submit to a sobriety test. There I was on the side of road, performing the tests to the best of my ability. I thought I was doing well and home free until they brought out the breathalyzer. I remember thinking, "Why didn't they just bring that out first and get it over with," as I blew into it. I thought for sure I was dead meat at this point. Those things don't lie, right?

Well, I must have passed because they released me to drive home. I never did find out what I blew, but I didn't care at that point. I just wanted to get back to the BOQ and put this night behind me. They even congratulated me on being such a responsible officer and driving my passed-out friend back from the bar. They took my name and unit and promised to let my chain-of-command know what a great job I did. If they only knew!

To this day, I still can't believe I made it out of that situation scot-free. I thought for sure I was going to be talking to the "man" on Monday morning and getting my discharge papers in order. Despite all of the safety briefings, classes and options available to me, I still took a stupid chance and drove after drinking. And this was after a classmate got drunk, fell asleep at the wheel, crossed a median and struck a car head-on, killing two people. The same thing could have easily happened to me.

I vowed never to let something like this happen to me again — a promise I have kept to this day. I was fortunate not to have ruined my Army career or, worse, had an accident that injured or killed others. As Leaders, we are expected to set the example. We have to stay engaged and disciplined and hold ourselves accountable to the same standard we expect from our Soldiers. I learned from my experience and have chosen to set the kind of example my Soldiers can follow.



Watch Your {Gr}ass

NEIL MILLER
U.S. Army Corps of Engineers
Buffalo, N.Y.

Spring is in full swing, which means many lawn-conscious homeowners are working to return their grass to its mid-summer glory. Before tending to your turf or whacking your weeds, make sure you have the proper protective equipment to do the job safely.

For many of us, yard work has become so routine that we've grown complacent when operating lawn equipment. Common sense should tell us that the lawnmower is one of the most dangerous machines we use at our home. Still, each year about 68,000 people are injured by lawnmowers. According to the American Academy of Pediatrics, more than 9,000 of those injuries are to people under the age of 18.

When using machinery at work, we are expected — and required — to use personal protective equipment (PPE). There is no reason to think we shouldn't wear PPE when dealing with dangerous equipment at home. After all, weed trimmers and lawnmowers have strings and blades that operate at very high revolutions per minute. At these speeds, rocks or other objects become deadly projectiles.

When using lawn equipment, you should always wear safety glasses, gloves, earplugs/muffs, long pants and sturdy shoes or boots. Here are some other simple tips on how to be safe while operating a lawnmower and weed trimmer:

- If purchasing a push mower, get one that has a safety bar that must be engaged for the engine to operate. Never disengage this feature.
- Walk the yard before mowing and pick up any toys, rocks or other objects the lawnmower can run over.
- Start and refuel the mower or weed trimmer outdoors to avoid fire hazards.
- Do not fill a lawnmower or weed trimmer with gasoline while it is running.
- When using a weed trimmer, position the cutting head at a 30-degree angle to the cutting area.
- Only push a lawnmower; never pull it toward you.
- Never attempt to change the wheel height adjustment on your lawnmower while the engine is running.
- When the mower blade needs servicing, it's a good idea to remove the spark plug before putting your hands near it.
- Check for wear and tear before operation.
- Stop operation if someone comes within 30 feet of you.

Always be aware of your surroundings and never become complacent with the hazards present when operating these powerful machines. By wearing proper PPE and adhering to the other precautions mentioned above, you can keep your yard groomed without becoming a safety statistic.

DID YOU KNOW?

Since fiscal 2000, more than 20 Soldiers have been injured in lawnmower-related accidents, including:

- **A Soldier slipped in mud while operating a push mower and caught his foot in the blade. The Soldier lost a portion of one toe and fractured three others.**
- **A Soldier severed his finger while attempting to adjust the wheel height on a running lawnmower.**
- **A Soldier cut off his finger while attempting to clear a blockage from the discharge chute of a running lawnmower.**
- **A Soldier was struck in the mouth by a rock that was propelled by a lawnmower 20 feet away. The Soldier lost a tooth and received 10 stitches in his lip.**
- **A Soldier slashed his foot when he attempted to kick the deck of a lawnmower to free it from a tree root. The Soldier missed the deck and caught his foot in the mower blade.**

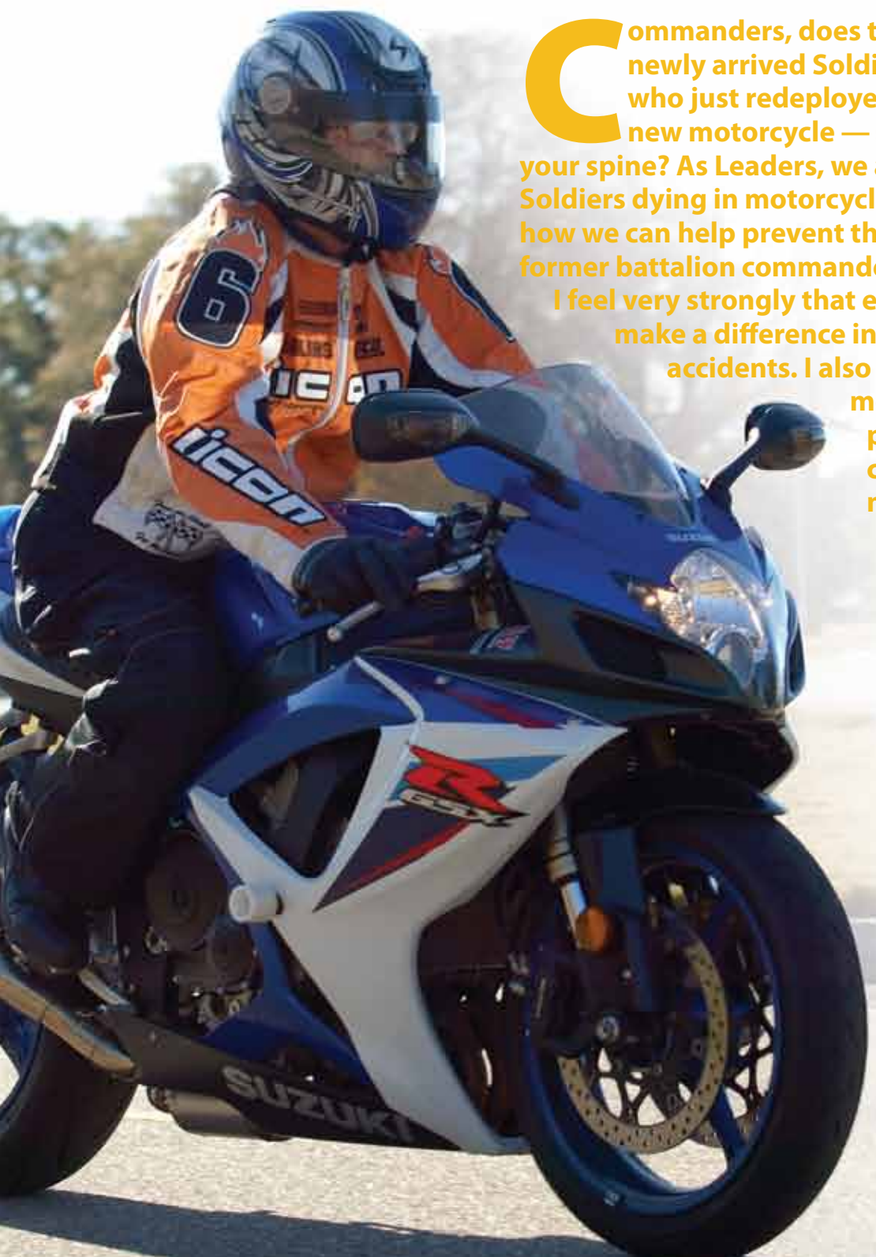
LAWN CARE

To prevent lawnmower injuries to children, the American Academy of Pediatrics recommends the following:

- **Children younger than 16 should not be allowed to use riding mowers. Children younger than 12 should not use push mowers.**
- **Wear sturdy shoes (never sandals or sneakers) while mowing.**
- **Use a collection bag for grass clippings or a plate that covers the opening of the discharge chute. Always wear hearing and eye protection.**
- **Make sure that children are indoors or at a safe distance well away from the area you plan to mow.**
- **Make sure an adult sets the blade height settings with the mower off.**
- **Do not pull the mower backward or mow in reverse unless absolutely necessary, and carefully look for children behind you when you mow in reverse.**
- **Always turn off the mower and wait for the blades to stop completely before removing the grass catcher, unclogging the discharge chute or crossing gravel paths, roads or other areas.**
- **Do not allow children to ride as passengers on riding mowers.**

A LEADER'S GUIDE TO MOTORCYCLE MENTORSHIP

LT. COL. KEVIN CHRISTENSEN
Joint Multinational Readiness Center
Hohenfels, Germany



Commanders, does the idea of having a newly arrived Soldier in your unit — one who just redeployed and bought a powerful new motorcycle — send a shiver down your spine? As Leaders, we all grimace at reports of Soldiers dying in motorcycle accidents and wonder how we can help prevent the next fatality. As a former battalion commander and motorcycle mentor, I feel very strongly that engaged Leaders can make a difference in preventing motorcycle accidents. I also believe an effective motorcycle mentorship program (MMP) is a commander's best tool for mitigating riders' risks.

As a commander, your first step is to establish or adjust your MMP. To do that, you'll need to decide upfront who will be your senior mentor and what type of program you want. Your senior motorcycle mentor should be your special staff officer, running the program according to your guidelines. They don't have to be your most senior rider, but they need to be someone who has earned your trust. They should be experienced riders with good safety records who are well respected by your unit's riders. The type of bike they ride is irrelevant. What is essential is they have the time to devote themselves to the program and possess a passion for leading and training Soldiers.

There are three fundamental components to an MMP — knowledge, skills and attitude. Anything you can do to increase your riders' capabilities in these areas will help reduce risks. Your garrison commander should have an existing Motorcycle Safety Foundation (MSF) program offering the MSF's basic and experienced rider courses. As a commander, you can feel confident these courses will go a long way toward giving your riders the necessary knowledge and skills for safe riding. However, it is the motorcycle mentor's unique role to identify and change those rider attitudes which lead to high-risk behaviors.

What does it take to modify a rider's behavior? Well, the good news is the same skills that make an effective unit Leader also make for an effective mentor. Pairing new riders with mentors allows the mentor an opportunity to assess the rider's knowledge, attitude and skills and share that with you. Since you, as the commander, have to sign the new rider's risk assessment, ask your mentor what you can do to mitigate the risks. This might mean keeping the new rider with a mentor until certain milestones are met (maybe a couple of rides in increasingly demanding conditions). Some new riders may not be happy with that, yet it might be precisely what they need. To help identify high-risk riders, here are some "red flags" to look for:

- Behavioral issues — particularly a sense of indestructibility. Soldiers who lack maturity and sound judgment will demonstrate those same traits when they ride, taking unnecessary risks such as not wearing their personal protective equipment (PPE).
- Acts of indiscipline. If a Soldier known for indiscipline shows up as the proud owner of a new motorcycle, then you probably have trouble brewing.
- Unwillingness or resentment toward participating in MSF courses and mentorship programs. Those who push back the hardest are typically the ones who need these programs the most.
- Junior riders (not necessarily by age, but by experience) trying to ride machines too powerful for their skill level.
- Soldiers returning to riding after a break of several years who want to pick up where they left off. When riding with more skilled riders, they might be tempted to ride beyond their current abilities.

Mentor Responsibilities

Your senior mentor should maintain a training folder for each of your riders which you can both review. I recommend these folders include the following items:

- Copy of the rider's driver's license with motorcycle endorsement (check to ensure it is valid).
- Copy of the rider's MSF card.
- Proof of insurance.
- Risk assessment and mitigation plan with appropriate level commander signature.
- Copy of MSF tires, controls, lights, oil, chassis and stands (T-CLOCS) checklist completed by the mentor.
- A counseling statement indicating the rider has read and understood the commander's policy concerning safe motorcycle operation.

Understand Your Riders

Even if you don't ride, you need to understand what goes on inside your riders' heads. They're not a homogeneous group by any measure. However, rather than grouping them by what they ride — sport bikes, cruisers, touring, etc. — group them by why they ride:

- **Those who ride to hone their skills.** Your mentorship program might not be what these riders are looking for. They're looking to increase their bike's performance and add skills to their kit bag. They ride on the open road or a closed track. For them, riding is a sport for which you train to become better.
- **Those who ride as a means of transportation.** These are your "get-back-and-forth-to-work" kind of riders. They ride throughout the year, including during inclement weather. When these riders take longer trips, they tend to do so by themselves or in small groups.
- **Those who ride for the social aspect of being a motorcycle rider.** These riders enjoy getting out and seeing the countryside with other like-minded riders. They relish the sense of freedom that comes from riding and love feeling a part of something that is more than just two wheels and an engine.

As a commander, which group should you be concerned with? The answer, of course, is all of them. Each has their own unique risk factors that motorcycle mentors can help mitigate. And don't forget your dirt bike riders. You may not even know who they are since their bikes generally do not show up at the workplace.

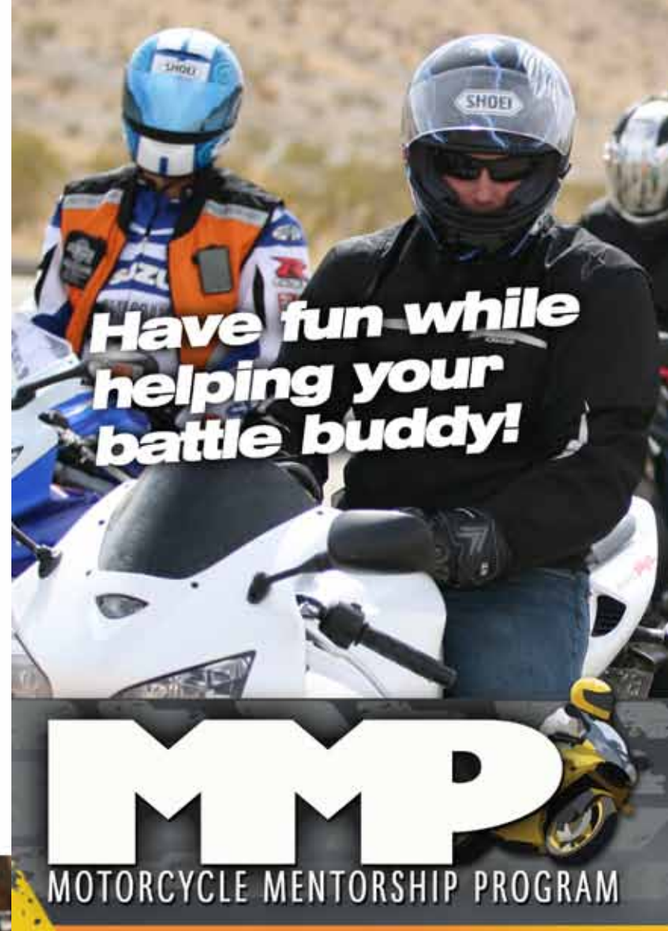
Selling the MMP to Your Riders

What can you, as a commander, do to encourage your riders to participate in an MMP?

- Establish a sense of inclusiveness — ensure your MMP is designed to benefit all of your riders. Including Family members may increase participation in some groups.
- Build an incentive program that rewards safe riders.
- Encourage riders to buy high-quality, effective PPE and wear it.
- Reinforce the role of your designated motorcycle mentor with subordinates in your command.
- Send out a policy letter explaining your command policies regarding participation in the MMP. Don't over-engineer your program. Make it simple enough for your mentors to execute.
- Team with your garrison commander. If you don't have someone in your unit to meet your program's mentorship requirements, your garrison may have military or civilian riders who can help.
- Encourage your riders to establish a club. This can be a private organization operating on your installation. A good riding club will enhance the riders' image and promote safe riding through informal coaches and mentors.
- Don't restrict your Soldiers from riding unless you think their risk is so high you can't mitigate it through training and mentorship. Just as it is in any military unit, meaningful repetition is the key to developing skills that make Soldiers and motorcycle riders successful.
- Don't pick on your sport bike riders. They could be your most highly skilled riders and are also likely to have (and wear) good PPE. Worry more about Soldiers riding machines beyond their training and skills. Focus on your riders' attitudes and behaviors.

Bottom Line

Protecting Soldiers is "commander" business. Establishing an MMP with a wisely chosen mentor can help you mitigate your riders' risks, whether or not you ride with them. However, as a rider, supporting an MMP allows me to do two things I already enjoy — ride motorcycles and lead Soldiers. Leaders who provide their riders good mentorship programs can help them live to ride another day.



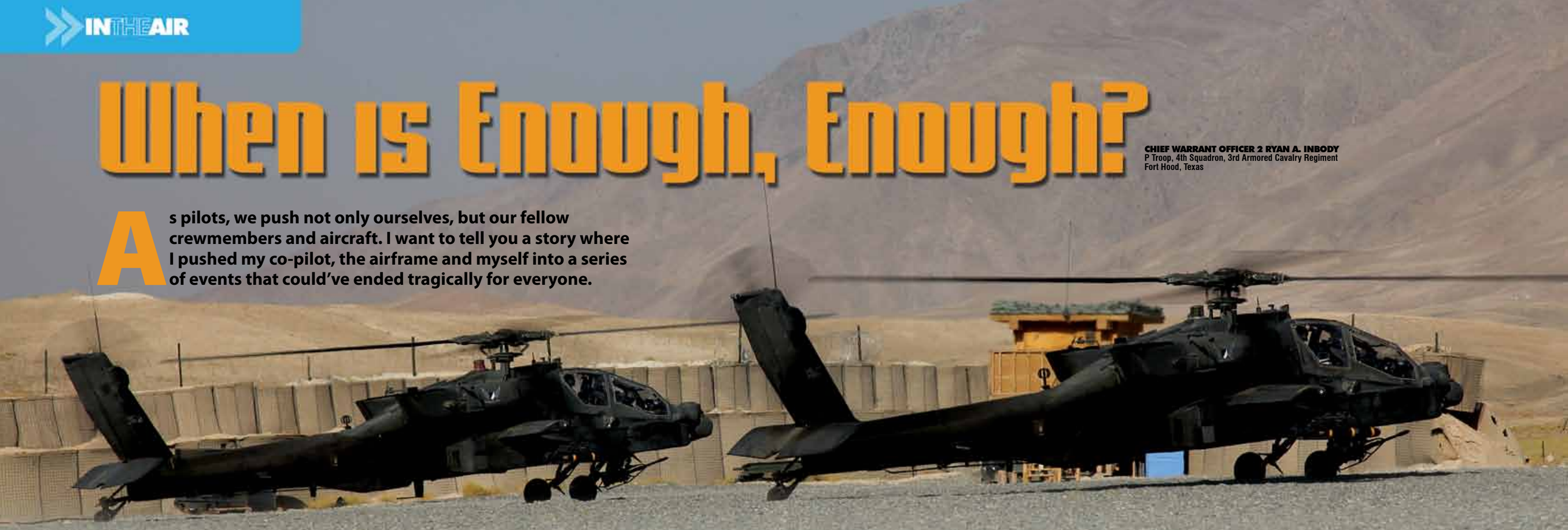
Check out the USACR/Safety Center MMP Web site for some examples of active mentoring programs.

https://safety.army.mil/mmp/

When is Enough, Enough?

CHIEF WARRANT OFFICER 2 RYAN A. INBODY
P Troop, 4th Squadron, 3rd Armored Cavalry Regiment
Fort Hood, Texas

As pilots, we push not only ourselves, but our fellow crewmembers and aircraft. I want to tell you a story where I pushed my co-pilot, the airframe and myself into a series of events that could've ended tragically for everyone.



We took over the Multinational Division Center (MND-C) from the previous unit and pulled missions throughout the area of operations. The MND-C is a huge area in Iraq, ranging from Talil in the south, all the way to Baghdad International Airport (BIAP). On this day, our team of two Apaches was executing missions in the Forward Operating Base (FOB) Hammer area, about 50 km east of Bagdad. This area had seen some recent improvised explosive device strikes as the brigade pushed into the insurgent-held areas to the north and east. Our brigade was based at "Hammer," which also had a two-point forward arming and refueling point (FARP).

After finishing the mission, we headed to the FARP for fuel before heading back to BIAP. I was lead, with my co-pilot as the air mission commander (AMC). We always had a great time flying together and enjoyed our casual atmosphere. In the other aircraft, the crew consisted of an instructor pilot and a captain in the front seat.

No sooner had I leveled off at 1,500 feet than I smelled something burning. I asked my co-pilot if he smelled a burning odor. He said, "No," adding this aircraft had burned a generator the day before. He explained that it was probably residue resulting from the previous generator. We both laughed and headed away from FOB Hammer. (First chance to land.)

Maybe another 10 minutes into the flight, I got another burning smell — this one more intense. I asked my co-pilot again if he smelled anything. He told me he didn't. I insisted there must be something burning. He brought up the residue again. We soon got a GEN 1 FAIL warning light and a dose of burning plastic odor in both crew stations. We talked about it briefly, deciding to shut down the burned generator rather than reset it.

My co-pilot turned off the generator and I made the course change to Al Rashid airfield, also called 11W. As we approached 11W, the smell had disappeared and the airframe had no other issues. Our wingman understood what was occurring and didn't see any smoke coming from our aircraft. As we crossed the Diyala River, my co-pilot and I asked each other if this was the best idea. We convinced ourselves that we had only a generator issue, the aircraft was still flyable and BIAP wasn't that far away. We both had been flying this aircraft the day before when the generator fire occurred and had landed at 11W. Due to lack of maintenance at 11W, we decided to return to BIAP. As we made the turn to head west, I saw 11W's long airstrip through our right door. (Second chance to land.)

We traveled another 10 minutes when grey smoke filled my cockpit. I passed the controls to my co-pilot because I couldn't see outside. We passed over Route Jackson, 20 km from BIAP. We could land at one FOB about 10 km to the north or at countless other small checkpoints; however, for the most part, we were in "bad guy" country. Regardless where we went, I had to get rid of the smoke. Somewhere around 134 knots true, I opened the cockpit door, holding it with two hands, and quickly vented the smoke. We pushed on to BIAP, leaving FOB Falcon behind. After all, it was now the closest secure place to land. (Third chance to land.)

As we entered BIAP airspace, a loud, grinding sound came from behind my seat. It was the sound of the generator coming apart on the transmission deck. We were entering on a base leg and I honestly thought the generator was going to come apart and start flailing around. Turning onto final, we requested fire crews to meet us on the ramp. I landed, making a big air assault flare, and quickly taxied to the ramp. I pulled the engines off and shut down the aircraft while my co-pilot unstrapped and jumped out. I was about four steps behind him. The fire crews were already around the aircraft. Once we were 100 feet away, we both turned around to look at the aircraft. There was no sign of smoke or fire. It turned out the generator had smoldered and ground itself to pieces. There was never any real fire, only smoke and grinding.

Lessons Learned

Our entire flight from FOB Hammer to BIAP was about 40 minutes. When I look back, every 10 minutes we had a chance to land the aircraft. Luckily, the smoke never turned into a real fire, but it could have easily done so.

Throughout our return trip, we could have done many things differently, starting with returning to FOB Hammer, followed by landing at 11W or later at the FOB Falcon passenger terminal. However, we made the choice to push on, based on prior maintenance, duty day issues, location and at least a dozen other things. What I learned from this flight is that pushing your fellow pilots, your airframe and yourself can sometimes be unwarranted. Was it worth the risk? We were returning home without a mission. What's a night at FOB Hammer or 11W compared to burning one in? I gambled that we could make it back to BIAP and won. However, I wouldn't roll the dice on something like that again.

Lost at Sea

CHIEF WARRANT OFFICER 3 JONATHAN HURT
B Company, 4th Battalion, 3rd Aviation Regiment
Hunter Army Airfield
Savannah, Ga.

Deep-sea fishing is one of my favorite pastimes. Whenever we get a chance, my friends and I like to rent a boat and head for open water. I thought we always took all the proper precautions before our excursions. However, a major oversight on one trip nearly made it our last.

The only problem with deep-sea fishing is you need a boat, which can be expensive. Fortunately, the outdoor recreation program at Hunter Army Airfield, Ga., allowed us to rent an 18-foot Sea Hunt boat for 24 hours for a price that didn't drain our E-5/E-4 wallets. The only requirement was for one of us to take a boating safety class.

Because fishing off the coast of Savannah, Ga., is a little different than fishing in our home state of Michigan, my friend, Chewy, and I decided we needed a few boating trips to become acclimated. With each trip, we added various safety precautions to help ensure our safe return. We brought a handheld global positioning system (GPS) to navigate our way in and out and eventually bought a depth finder to ensure we didn't get stuck on sandbars. We even brought an extra life jacket just in case we needed one.

The entire summer passed without incident, so we decided it was time to leave the channel fishing behind and venture farther into the Atlantic. I told my father and brother-in-law about our plans for a weekend escape with several friends, and they both wanted to tag along. In hopes of avoiding Mother Nature ruining our trip, we planned to head out in early November, which is the tail end of the Atlantic hurricane season.

Unfortunately, a good fishing weather forecast doesn't come around every day during the winter months, but we were optimistic. That optimism turned to defeat when, the day before our trip, the weather forecast called for a small-craft advisory. All we could do was hope the forecast changed before we launched the boat. To our surprise, the weather looked to be in our favor when we awoke the following morning. The forecast predicted high swells without white caps, and the small-craft advisory had been lifted. We rented two 18-foot Sea Hunt boats to carry our eight-man crew.

As we put the boats in the water and docked them at the pier, we had a brief conversation about the rough waters. We decided everything would be all right and set off on our journey, which would take us seven miles out into the deep blue yonder. As we made our way out of the sound, I said to myself, "The water is a lot rougher than I thought." The looks on my friends' faces revealed they were thinking the same thing. Still, we sailed on and made it out of the sound without incident. We had no idea what awaited ahead.

Entering the swells was breathtaking. As the first boat crested the top of a swell, it disappeared on the other side. In these conditions, turning around is the first thing that comes to mind. The problem was we couldn't. With swells that big, we knew we were likely to capsize while we were sideways to the swells during the turn. I looked at my father on the other boat and realized I might have punched both our tickets. The only thing we could do was truck on.

Breaking swell after swell, we finally made it out to our location, where the water was rough but bearable. Well, it was bearable for some of us. Chewy, my father and I were the only ones who weren't seasick. As we collected ourselves, I reflected on our ordeal. Was I as prepared as I thought? If the boats capsized, could we have survived? To ensure all future fishing trips end smoothly, I'll always follow these tips:

- Heed the first weather warning. No trip is worth your life.
- If the conditions on the water appear rough, return to the marina.
- Always have the proper personal protective equipment, such as Coast Guard-approved life jackets, available for each passenger and yourself.
- Bring a GPS locator so you can be found if your boat capsizes.
- Always tell someone on land your route, launch location and expected time/place of return.
- Purchase a marine and weather radio.

We should have planned for many things on this trip, but we didn't. That lapse in judgment could have cost us our lives. It left me with an important lesson learned, though: Being too eager can have deadly consequences. Always think before you act.

LEADERS SOLDIERS FAMILIES
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OUT ON THE WATER!

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Nuts and Bolts: Saved by the Belt

True Story

MAJ. RODNEY CARTER
Joint Force Headquarters
Georgia Army National Guard
Dobbins Air Reserve Base
Marietta, Ga.

It was 11 p.m. and I was headed home after work in Atlanta. It had rained earlier in the evening and the streets were slick with water and oil from the constant vehicle traffic. Being a downtown metropolitan area, one can only imagine the amount of oil that accumulates on the roads over the course of time. But I wasn't worried — it was a route I had driven countless times before.

I was looking forward to getting home and hitting the pit. I didn't have anything else I had to do, so I wasn't in a hurry as I drove. I was traveling west on Edgewood Avenue and attempting to turn left onto Pryor Street when my tires lost traction and my car went out of control. I saw a car, a building and a traffic light pole ahead. I thought I was about to die!

I struggled to regain control, but I'd locked my brakes and couldn't steer. As a result, I slid through the intersection and smashed into the traffic light pole. The impact pushed the engine back into the driver's compartment. At that point I thought, "How could this happen?" I wasn't going that fast.

Luckily, I wasn't seriously hurt and only suffered a few bumps and bruises, along with some minor neck and back pain. However, my vehicle didn't fare so well — it was a total loss. I did some research and found out I wasn't the only person to have a similar accident at that intersection.

After the collision, even though I wasn't visibly hurt, I was transported to Grady Memorial Hospital for observation and a CT scan. As I was lying on the gurney, I tried to imagine what would have happened had I not been wearing my seat belt. My mind jumped back and forth between the thought of being thrown through the windshield or being thrown from the car.

That night, I learned a lesson about driving on slick roads. Thanks to my seat belt, I'm still around to benefit from that lesson and share it with others. No one is a perfect driver. However, sometimes it's the simplest thing, like buckling up, that gives you a second chance at life.

WHAT DID YOU LEARN?

Take a look at the story to the left. Learn anything from it? Here are a few questions to help rattle a few brain cells. Some of these have more than one correct answer.

1. What can make driving on heavily traveled city streets particularly dangerous when it rains?

A. Water can mix with oil that has dripped from other vehicles to produce an extra slippery surface.

B. Spray from passing vehicles and oncoming cars can coat your windshield and temporarily blind you.

C. Kids love using rain-slicked streets for impromptu water slides.

2. How can you get into trouble doing something you've done many times before?

A. You can become complacent and fail to pay close attention.

B. You might be tempted to take some (maybe not-so-safe) shortcuts to save time.

C. Since you can do it with your eyes shut, you get cocky and decide to try it that way.

3. If you don't have ABS brakes, what is the best way to stop on a slick road?

A. Close your eyes, stomp on the brakes and hope for the best.

B. Pump the brakes lightly and steer into the slide.

C. Turn the wheel, floor the gas pedal and try power sliding.

4. When should you buckle your seat belt?

A. When you get into the car and before you pull onto the road.

B. When you see a cop who might ticket you for not wearing it.

C. At the last second when you're about to hit something.

Answers: 1. A, B; 2. A, B; 3. B; 4. A

The 4-Foot Fall

VICKI ARNESON-BAKER
Commandant of the Marine Corps-Safety Division
U.S. Army Combat Readiness/Safety Center
Fort Rucker, Ala.

Identifying fall hazards isn't always easy because appearances can be deceiving — often affected by our own perceptions. For example, if you're 6 feet tall, you're taller than a 4-foot-high platform, which makes it easy to assume the platform isn't a fall hazard. On the other hand, if you're standing on that platform, you are now looking down from a height of 10 feet. If you fall, even from 4 feet, you could be seriously injured.

The Occupational Safety and Health Administration (OSHA) recognizes falls from any height can be serious. As a result, OSHA requires protection for those working at heights at or above 6 feet for construction work or 4 feet for general industry. Under the general industry standard, stated in 29 Code of Federal Regulations (CFR) 1910, Subpart D, Walking-Working Surfaces, OSHA provides requirements for guarding floor and wall openings to prevent workers from falling. These standards also apply to the military when not in military-unique situations.

Protection for floor openings. Every floor opening must be protected against accidental falls by a guardrail system or cover. These openings include stairs having four or more risers, hatchways or chute floor openings, skylights in the roof, pits and trapdoors, manholes and any other floor hole greater than 1-inch wide. Another way to protect against accidental falls from floor openings is to provide a door or gate opening directly to the stairway. OSHA states that a platform shall be provided between the doorway and stairway with the swing of the door not reducing the effective width to less than 20 inches.

Protection for wall openings. Every wall opening, whether permanent or temporary, with a drop of more than 4 feet to the next lower level must be guarded by standard railings and toe boards where there is exposure below to falling material. (This is to keep tools and other materials from falling on workers below.) Toe boards must be a minimum of 4 inches high with less than a quarter-inch clearance above floor level.

Protection for open-sided floors, platforms and runways. Every open-sided floor or platform 4 feet or more above the next lower level or ground level must be guarded by a standard railing on all open sides except where there is an entrance to a ramp, stairway or fixed ladder.

Stairway railing requirements. As mentioned earlier, every flight of stairs with four or more risers must be equipped with standard handrails. OSHA states the following requirements for handrails:

- Stairways less than 44 inches wide with both sides enclosed must have at least one handrail, preferably on the right side descending.
- Stairways less than 44 inches wide with one side open must have a railing on the open side.
- Stairways less than 44 inches wide with both sides open must have a railing on both open sides.
- Stairways more than 44 inches wide, but less than 88 inches wide, require one handrail on each enclosed side and one stair railing on each open side.
- Stairways more than 88 inches wide require one handrail on each enclosed side or a stair railing on each open side and an intermediate stair railing located in the middle of the stairway.

Standard railing, stair railing and handrail requirements. There are specific requirements when constructing and installing standard railings. As seen too often, flimsy chains guarding an open pit in the maintenance bay do not meet the requirements for fall prevention. Standard railings must consist of posts, a top rail and an intermediate horizontal rail or other form of protection between the top rail and the floor. The vertical height shall be 42 inches from the upper surface of the top rail to the floor and the construction must be sturdy enough to support 200 pounds.

Stair railings protecting the open side of a stairway have the same construction requirements, except they shall not be more than 34 inches high or less than 30 inches to accommodate easy grasping. Handrails are similar to stair railings in that they must also be no more than 34 inches high or less than 30 inches and must withstand 200 pounds. It's also important to note that handrails must provide at least a 3-inch clearance to the wall and brackets will not be spaced farther than 8 feet apart.

Hazard Identification. Identifying fall hazards can be challenging and depends on the nature of your job and working environment. So where exactly are the hazards? Examples include loading docks, security towers, motor pool bays and maintenance activities for vehicles and aircraft. Assess all work performed at elevated heights and determine if fall protection is required. Look for all unprotected walkways, working areas, holes, leading edges, stairways and other walking/working surfaces higher than 4 feet.

For construction activities, the trigger height for fall protection requirements is increased to 6 feet above the ground or next lower level and 10 feet for scaffolding. According to OSHA's 29 CFR 1926 construction standard, the term "construction activities" refers to actual construction, alteration and/or repairs, including painting and decorating.

Conclusion

With all of the requirements for fall protection, it is easy to become overwhelmed and discouraged. However, always remember to protect individuals working or walking 4 feet above the ground or next lower level. Spending the time up front to conduct a thorough job hazard analysis and workplace assessment to identify fall hazards can save a lot of time and, possibly, even a life.

DID YOU KNOW?

The U.S. Bureau of Labor Statistics recorded in 2008 that private industry experienced more than 85,000 falls with injuries serious enough to require days away from work. More than 18,000 of those falls involved falling down a flight of stairs or steps.

FYI

Requirements for fall protection during construction activities extend beyond the requirements for general industry. For more information on fall protection for construction activities, consult your local safety office, 29 CFR 1926 standards and the U.S. Army Corps of Engineers' Safety & Health Requirements Manual (EM 385-1-1).

Accidents occurred between Jan. 1-31, 2010

LOST

AVIATION

AH-64D

CLASS B

- The crew received an NP FAIL/HIGH engine overspeed reading while at a hover, followed by failure of the No. 2 engine. Post-flight inspection revealed the No. 2 engine input driveshaft had failed.

CH-47D

CLASS B

- While attempting to land to an unimproved landing zone, the aircraft's front rotor system struck rising terrain, resulting in damage to three front rotor blades.

MH-47

CLASS C

- During post-flight taxi, the aircraft struck a light pole with the aft rotor blades.

OH-58C

CLASS C

- During engine start, the turbine outlet temperature reached 1,000 C for one second.

OH-58D(R)

CLASS C

- The crew experienced an engine/transmission overtorque condition during an approach.
- During run-up, the aircraft experienced an engine overspeed of 124 percent for two seconds.

UAS

RQ-7B

CLASS C

- The unmanned aircraft crashed during launch when the recovery chute deployed.

GROUND

AMV

CLASS A

- A Soldier was killed when he was ejected from an M1151 HMMWV that overturned on a wet gravel road.

Explosive/Fire

CLASS B

- The turret of an M2A2 Bradley was damaged when the vehicle's heater malfunctioned following installation and started a fire. The crew was able to extinguish the fire with a water hose.
- A Soldier lost portions of his fingers on both hands when a foreign explosive fuze detonated. At the time of the explosion, the Soldier was examining the fuze, reportedly using a set of pliers.

Personnel Injury

CLASS A

- A Soldier fell to his death from a cliff while hiking with another individual. At the time of the accident, the Soldier was attempting to retrieve gear he had dropped during a previous hiking trip.

ARMY AVIATION LOSSES

Fiscal 2010

as of Apr. 8, 2010

Class A/Fatalities	
ATTACK	0/0
RECON	2/4
UTILITY	4/4
CARGO	1/0
TRAINING	0/0
FIXED-WING	2/0
UAS	3/0
TOTAL	12/8

ARMY GROUND LOSSES

Fiscal 2010

as of Apr. 8, 2010

Class A/Fatalities	
AMV	8/4
ACV	7/6
PERSONNEL INJURY includes weapons-handling accidents	11/12
FIRE/ EXPLOSIVE	1/1
PROPERTY DAMAGE	0/0
TOTAL	27/23

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TRAVEL RISK TRiPS PLANNING SYSTEM

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- A Soldier suffered fatal injuries when he inadvertently discharged a round from his privately owned weapon as he attempted to clear it.

CLASS B

- A Soldier suffered a permanent partial disability injury when he was struck in the abdomen by a round from a shotgun another Soldier was handling.

DRIVING

POV

CLASS A

- A Soldier was driving home from morning physical training when he pulled off the road to assist a stalled motorist. As he helped push the vehicle, he was struck by a motorist in an SUV and crushed against the car he was pushing.
- A National Guard Soldier, home on Christmas leave from basic training, lost control of his car, struck a culvert and overturned three times. A fire ensued, consuming the vehicle and fatally injuring the Soldier, who was unbelted.
- A Soldier drove his pickup truck through a stop sign at a T-intersection, struck a berm, became airborne and then crashed. A passerby noticed the vehicle and notified authorities. The Soldier was pronounced dead at the scene.

POV DRIVING LOSSES Fiscal 2010

as of Apr. 8, 2010	Class A/Fatalities
CAR	21/22
SUV/JEEP	5/6
TRUCK	3/3
MOTORCYCLE	9/9
PEDESTRIAN	4/5
OTHER*	1/1

*Includes vans and ATVs

46 TOTAL DEATHS

Fiscal 2009: 56 3 year average: 59

READY FOR THE RISK?

GRAT GROUND RISK ASSESSMENT TOOL

https://safety.army.mil

GRAT-S http://safety.army.smil.mil

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AVOID THE HAZARDS

There is no question the Mine Resistant Ambush Protected (MRAP) family of vehicles provides increased protection for our Soldiers against improvised explosive devices, mines and small-arms fire. However, this increased level of protection does not come without some unique hazards and risks.

MRAP SAFETY AWARENESS

https://safety.army.mil/MRAP

Address the hazards associated with the operation of MRAPs. Implement effective composite risk management, comprehensive training, situational awareness and effective leadership to keep Soldiers safe and avoid loss and damage to equipment.

BE AWARE.

U.S. ARMY
ARMY STRONG

U.S. ARMY COMBAT READINESS/SAFETY CENTER

ARMY SAFE IS ARMY STRONG

A BAND OF BROTHERS & SISTERS

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KNOWLEDGE

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U.S. ARMY
ARMY STRONG.

THE BAND OF BROTHERS & SISTERS

KNOWLEDGE

OFFICIAL SAFETY MAGAZINE OF THE U.S. ARMY

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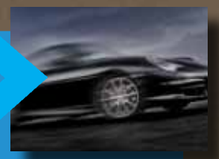

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Mission statement: The United States Army Combat Readiness/Safety Center (USACR/Safety Center) supports our Army by collecting, analyzing and communicating actionable information to assist Leaders, Soldiers, Families and Civilians in preserving/protecting our Army's combat resources.

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

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Knowledge provides a forum for Soldiers, Leaders and safety professionals to share best practices and lessons learned and maintain safety awareness. The views expressed in these articles are those of the author and do not necessarily reflect the official policy or position of the U.S Army, Department of Defense or the U.S. Government. Contents are specifically for accident prevention purposes only. Photos and artwork are representative and do not necessarily show the people or equipment discussed. Reference to commercial products does not imply Army endorsement. Unless otherwise stated, material in this magazine may be reprinted without permission; please credit the magazine and author.

FROM THE DASAF

For 235 years, our Army has been protecting this great Nation and the way of life we hold so dear. During a time of persistent conflict, our Band of Brothers and Sisters has evolved into one of the greatest combat forces on this Earth, committed to our core values and selflessly making extraordinary sacrifices for a better future for others.

Beyond these remarkable Soldiers are the Families and Army Civilians who provide steadfast support which allows us to carry on and accomplish our mission. Each of us should be proud to be part of a total Army Family that indeed makes America's Army: the Strength of the Nation.

As we celebrate our Army's rich history, we must also honor those Soldiers who have made the ultimate sacrifice in defense of freedom. They are truly the fiber of our legacy.

To all who wear the uniform today, those who have worn it in the past and the Families that give us the strength to continue, we extend our deepest gratitude and wish you all a Happy 235th Birthday!

Army Safe is Army Strong!

William T. Wolf
Brigadier General, USA
Commanding

FROM THE CSM

"Please **LET ME KNOW** what **YOU'RE SEEING** out there and **HOW** our USACR/Safety Center **TEAM CAN HELP.**"

TRAVELING THE ROAD TO SAFETY

It's hard to believe we're already more than halfway through this fiscal year. Our Army is as busy as ever, and our Soldiers are doing great work in places both near and far. During my travels over the past few months, it's been my pleasure to see our Soldiers in action.

This hard work shows in our accident statistics. To date in fiscal 2010, overall accidental fatalities are comparable with last year's historic numbers. We've done especially well regarding motorcycle fatalities, which remain slightly below the numbers logged for the same time frame in fiscal 2009.

As we move full swing into this summer's riding season, let's keep this trend going by encouraging Soldier responsibility and participation in the motorcycle training programs offered at installations across our Army. The Motorcycle Mentorship Program is one of the most successful of these initiatives, and it's a great way for commanders to promote safety awareness among motorcycle riders within their formations. For beginners and experienced riders alike, the MMP offers an opportunity for fun and camaraderie as participants build confidence and hone their riding skills.

One area that continues to be of concern is privately owned vehicle accidents involving sedans. While fatal POV accidents as a whole are down about 16 percent from fiscal 2009, we're seeing a slight trend in fatalities among unbuckled backseat passengers in sedans specifically. This finding proves that we, as first-line Leaders, must continue to reinforce the importance of seat belt use within our force, especially with younger drivers and their passengers.

The Army has tools in place to help both individual Soldiers and Leaders recognize potential driving hazards. I recently started a discussion on BCKS Safety Net regarding the TRiPS program, asking whether the process had become a paper drill or if it was still useful for Leaders to identify high-risk Soldiers. The overwhelming majority of responses emphasized the value of TRiPS, especially when first-line Leaders embrace the tool and actively use it to engage with Soldiers about their off-duty activities.

Without supervisor and Soldier buy-in, TRiPS is just a tool — but it becomes a game changer when it encourages dialogue between Soldiers and their supervisors. These conversations must include a discussion of all the hazards Soldiers and their passengers might face on the road and the importance of seat belts in saving lives. You don't have to wait until your Soldiers complete a TRiPS report before talking to them about safe driving practices, however. In fact, most of our POV fatalities are happening near home stations, so the need for timely guidance is ever present. Listen to what your Soldiers are saying, and always be on the lookout for those who might need additional experience or direction to become a safe and responsible driver.

This same emphasis on driving safety must translate to on-duty operations. Just recently, we lost three Soldiers within one week to separate MRAP rollover accidents. While investigations are ongoing, at least one of the fatalities — a vehicle commander — is reported to have not been using his restraint system.

Around the same time, another vehicle crew experienced a potentially devastating rollover into a canal, but everyone survived thanks to restraint use and quick execution of the trained rollover drill. This accident proves the importance of thorough pre-combat checks and inspections and the power of engaged leadership, even within the crew itself. The bottom line is it's just as easy for vehicle crews to follow the standard as disregard it, but the difference between the two is measured in lives saved.

Please let me know what you're seeing out there and how our USACR/Safety Center team can help. Take advantage of the ready-made Safe Summer Campaign available on our website (https://safety.army.mil) and also check out our tactical tools, including the new MRAP Safety Awareness video. These are great plug-and-play applications that will not only make your job a little easier, but also educate your Soldiers on the fundamentals of safety. And please join the conversation on our BCKS Safety Net and NCO Net, where you can find information on other great programs working within our Army today.

Have a great summer, and remember to always play it safe for our Soldiers, Families and Civilians.

Army Safe is Army Strong!

Mike Eyer
Command Sergeant Major
U.S. Army Combat Readiness/Safety Center

A Jump Too Far

COMPILED BY THE KNOWLEDGE STAFF

Editor's note: The ranks and names of the individuals mentioned in this story have been changed to protect their privacy and that of their Families.

The Sunday afternoon was shaping up nicely as Sgt. 1st Class Jeffrey Baker hopped into his pickup truck at his on-post quarters. He, his daughter and one of her friends were eager to ride their dirt bike and all-terrain vehicle (ATV) on the installation's off-road vehicle (ORV) area. Baker drove to the outdoor recreation office, signed out the key for the ORV area and then drove to an on-post storage area where a trailer held his dirt bike and his daughter's ATV. Within 45 minutes of leaving home, they were ready to ride.

The ORV area offered a main track designed by a professional dirt bike racer along with an ATV track and peewee track to cater to riders of various skills. On the main track, tabletops and other jumps gave riders a chance for some "air time" while several stadium-style berms allowed them a chance to keep their speed up in the turns.

It was almost 2 p.m. when Baker rolled his dirt bike off the trailer and put on his motocross personal protective equipment (PPE). A veteran motocross and off-road rider with 30 years' experience, he'd taken the Motorcycle Safety Foundation's Dirt Bike *RiderCourse*℠ five months earlier and ridden the course several times. Loving to race his Kawasaki KX250 on the course, he was in the process of starting a new dirt bike club at the post. However, after a few laps on the track, all that would change.

Sgt. Michael Cantor was also riding on the track and trailing Baker through the jumps. Cantor looked ahead at a tabletop jump with a 40-degree upward pitch. Baker had a handful of throttle as he climbed the incline and then launched from the tabletop, flying 74 feet before landing 37 feet beyond the obstacle. However, he had jumped too far and was now in serious trouble.

Some 50 feet ahead of Baker was a dirt berm. Instead of entering the berm through the corner, Baker went straight at it. The berm, at the point of entry, was 3½ feet tall and angled up at 60 degrees. When Baker hit

> "The simple **LESSON** is to **ALWAYS BE AWARE** of your true **LIMITATIONS** — the real **HAZARDS** — in the things **YOU** do."

it, he and his bike vaulted into the air and landed 48 feet on the other side. After the Kawasaki landed, Baker was thrown and ended up 21 feet away from his bike.

At some point during the accident process, Baker was thrown violently forward and struck his chest. His motocross PPE, effective in most crashes, could not protect him from the tremendous impact that broke his sternum and several ribs. Cantor saw the dust from the crash and rode to where Baker was laying face down in the dirt. As Cantor began administering first aid, he found Baker unconscious and not breathing. Cantor rolled Baker over and the injured rider began breathing again.

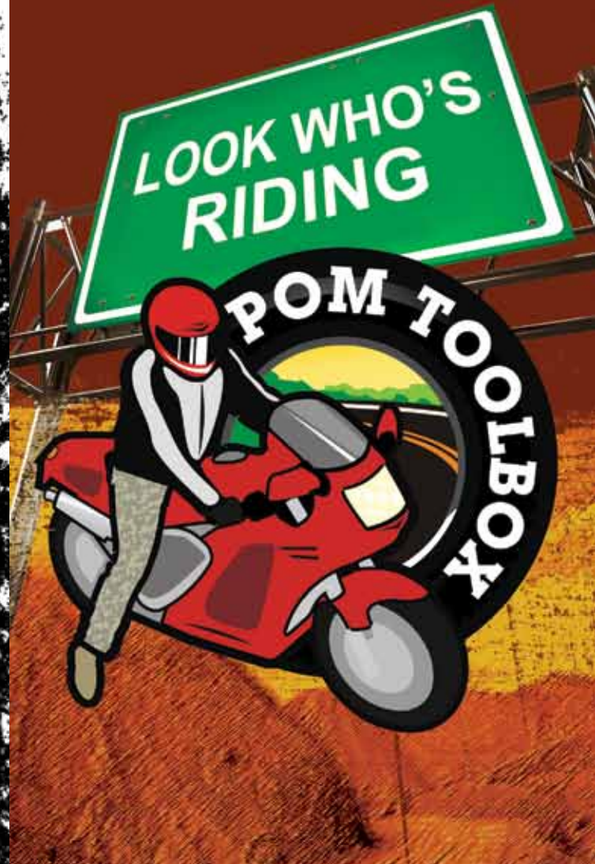
Sgt. Timothy Canny was riding his ATV on the track that afternoon. A member of Baker's unit, Canny quickly rode to the crash and assisted Cantor with providing first aid. Staff Sgt. Larry Kellogg, another dirt bike rider on the track, called 911 — but the call failed due to poor reception. Running to the landline phone at the ORV area's entrance, he called the 911 operator and reported the crash.

Emergency services personnel from the post's hospital reached the accident scene six minutes later. They prepared Baker for transport to the hospital, where he was taken to the emergency room (ER). The ER physician checked Baker and saw he needed treatment beyond what the hospital could provide. The doctor made arrangements to have him flown to another medical center.

But, sadly, Baker never made the flight. A little more than two hours after he crashed, his heart stopped beating. With that, both he and his hopes to start a new riding club died. To make this tragedy even more painful, his daughter was at the track when the accident happened.

Conclusion

Nothing can bring back this well-thought-of Soldier, husband and father. Perhaps he was overconfident on this particular day and pushed himself and his bike too far. Maybe it was a case of taking a different line through the tabletop and being surprised by how high and far he flew? He wasn't a reckless rider — his record shows that. But sometimes it only takes one mistake to end an otherwise outstanding life and bring tragedy to loved ones and friends. The simple lesson is to always be aware of your true limitations — the real hazards — in the things you do. If you don't, sometimes you won't get the chance to come back and ride that second moto.



The Privately Owned Motorcycle (POM) Risk Management Toolbox is designed as a tool for commanders, Leaders, supervisors and subordinates to use in their organizations. The toolbox contains best practice examples and lessons learned that can be used as accident prevention measures when developing a unit POM safety program.

Give it a Test Ride Today!

https://safety.army.mil/

There was nothing out of the ordinary or complex about this day's mission. While providing air movement security, an AH-64D experienced a failure in the No. 1 engine oil system. Minutes later, the aircraft crashed, killing one crewmember and seriously injuring the other. A post-crash fire consumed the aircraft.

A Deadly Turn

COMPILED BY THE KNOWLEDGE STAFF

"It is **ESSENTIAL** for **ALL PILOTS** to understand **WHAT POWER MANAGEMENT IS** and what it **INCLUDES.**"

In fiscal 2009, power management was a contributing factor in 20 percent of all Class A aviation accidents. Many Army aviators executing combat missions in power-limited mountainous environments find themselves with limited available power. When operating in high elevations and warmer temperatures, an aircraft's engine produces less power, reducing maneuverability and limiting the load it can carry.

What Happened?

The crews completed their preflight activities and individual crew briefs. The AH-64D was flying as the trail aircraft in a flight of three, providing air movement security for two UH-60L aircraft. The flight arrived at the initial forward operating base (FOB) to pick up the passengers, refueled and then departed for their destination.

Approximately eight minutes after takeoff, while flying at 1,500 feet above ground level, the AH-64D crew reported a No. 1 engine oil low-pressure segment light to the air mission commander in Chalk 2. The AH-64D crew then banked right and exited the formation, hoping to return to the FOB where they had just refueled. Going through their operator's checklist for the emergency procedure, the crew reduced the No. 1 power lever, but they were slow in jettisoning their external stores and adjusting airspeed. This caused the main rotor speed (Nr) to decrease. Three minutes (actual was 3 minutes, 20 seconds) after the low engine oil pressure warning, the helicopter crashed, killing the pilot in command (PC) seated in the back. The front-seat pilot crawled out of the mangled mess before the post-crash fire ensued.

Lessons Learned

It is essential for all pilots to understand what power management is and what it includes. An aspect of power management is knowing the amount of power required for continued flight as environmental conditions change and, specifically, single-engine capability for a dual-engine aircraft. When a crew loses one of their engines, they need to fully understand how the reduction in capabilities will affect the aircraft given the current ambient conditions. Not completing a performance planning card (PPC) and not knowing your single-engine airspeed for a given mission equates to playing Russian roulette every time we fly.

- **Review aircraft operating procedures that address power management when one engine is not available.** It is common for aviators to focus on committing aircraft limitations and emergency procedures to memory; however, a more comprehensive knowledge of the operator's manual is essential to safe flight. Training Manual 1-1520-251-10, AH-64D Operator's Manual, has a note in Chapter 9 that states: "When continued flight is in question, due to a loss of rotor RPM or reduction of available power (as a result of equipment malfunctions or environmental conditions), the immediate corrective action should be to adjust collective to maintain Nr within limits and jettison the aircraft wing stores. This should be done as the immediate means of reducing power requirement by approximately 1% torque per 200 lbs. of weight reduction."

Single-engine maximum torque available is the maximum torque output an engine is capable of producing prior to being limited by turbine gas temperature, fuel flow or engine gas generator speed output. Most pilots only worry about this value when forced into a single-engine situation, and therein lies the danger. Anytime you are operating at a torque value greater than 50 percent of single-engine max, you must be prepared to react instantly to a malfunction or failure. You must keep this number in mind anytime while in flight, even when operating with dual-engine power available. Upon failure of one engine, the remaining engine will pick up the load and its torque will instantly double. If you fail to reduce the power applied to the single-engine

max torque number, the rotor will droop rapidly and may become unrecoverable. Most Army aviators are continuously operating above this value in places like Afghanistan, whether flying security missions or simply landing or taking off. Hence, you must be prepared to execute either a "forced landing" or a "flyaway" plan.

- **Heighten aviators' awareness of terminology "when conditions permit."** When faced with an engine malfunction, it is essential for the crew to adjust their airspeed to remain within single-engine airspeed limits. The aircrew training manual says to select an airspeed that is between velocity safe single engine (the minimum airspeed) and single-engine velocity not-to-exceed (the maximum airspeed for this airspeed range) to prevent loss of rotor RPM and altitude. This airspeed provides the most reserve power for single- or dual-engine situations. If the aircraft cannot maintain altitude at this airspeed and you have applied maximum power available, you are committed to land.

The crew correctly identified the emergency and the correct emergency procedure: EMERG ENGINE SHUTDOWN when conditions permit, LAND AS SOON AS PRACTICABLE. However, the PC reacted by reducing the No.1 engine power lever to the idle position without a corresponding adjustment of his airspeed to single-engine airspeed limits. This resulted in the aircraft not having power to maintain altitude. This decision led to the eventual crash.

As with this crew, aviators in combat must make hard decisions when faced with emergency situations. The thought of landing in enemy territory must be weighed against the threat of further aircraft damage. In this case, with single-engine capability in question, the crew would have been better off using one of the following courses of action:

(1) Jettison external stores immediately and adjust airspeed to safe single-engine flight. This would have allowed the crew to safely return to the FOB or safely land as soon as practicable.

(2) Make the determination that both engines are still operating and return to the closest FOB. Although the No. 1 engine oil low-pressure caution light and corresponding audio warning alerted the crew, the engine was operating with no other resultant adverse indications, such as high oil temperature.

Conclusion

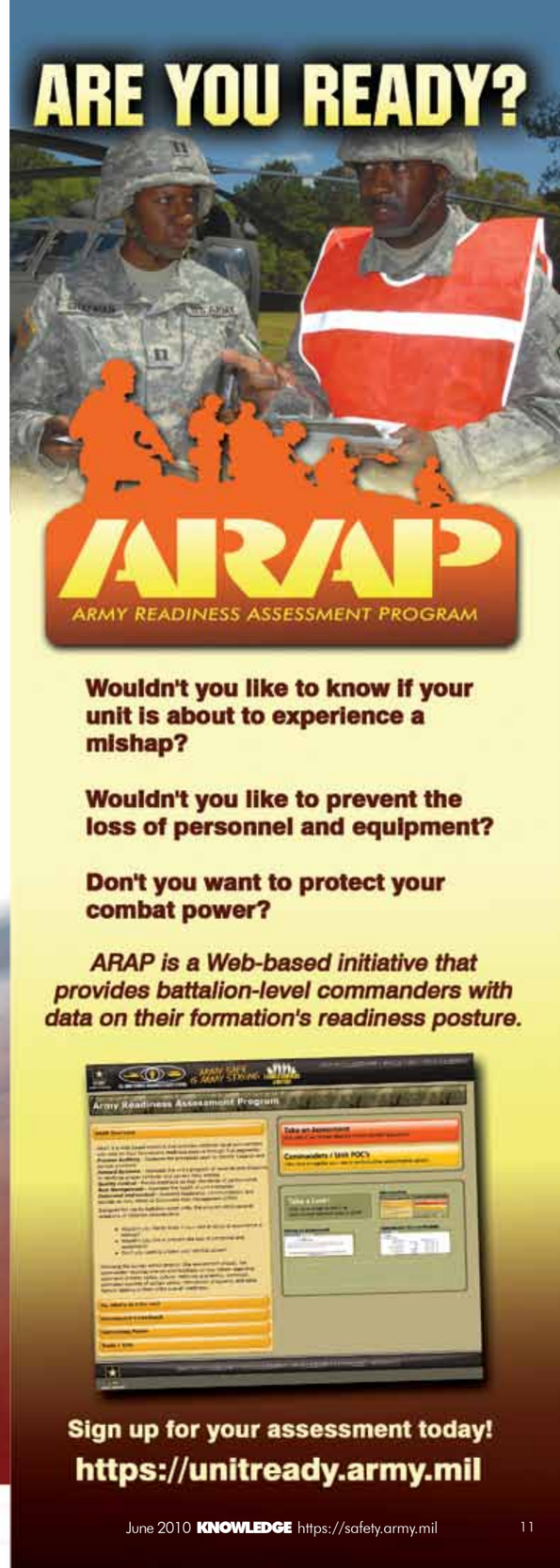
The AH-64D is arguably one of the most demanding, workload-intensive aircraft in the Army's inventory. Digitized aircraft and demanding flight environments require crewmembers to continually process and analyze an increasing load of competing mission tasks. Some of the element of surprise can often be removed if emergency procedures are contemplated and planned for, proper mission and performance planning is accomplished and effective aircrew coordination is conducted.

Oftentimes, crews operating in Afghanistan do not have single-engine capability even after jettisoning their wing stores. There is no single-engine envelope available, but there is an airspeed that will provide the lowest/least rate of descent and that's the maximum rate of climb and endurance airspeed. The crew is going to land, no doubt; but at least at that airspeed, with maximum power applied, they may be able to choose their forced landing site.

It is incumbent upon all aviators to know their aircraft, its operating limits and emergency procedures. No aviator wants to be on the "backside of the power curve," so you must know your machine, fly it to its capabilities and be cognizant of all external factors that might affect the mission. «

THINGS TO THINK ABOUT BEFORE HAVING A SINGLE-ENGINE FAILURE:

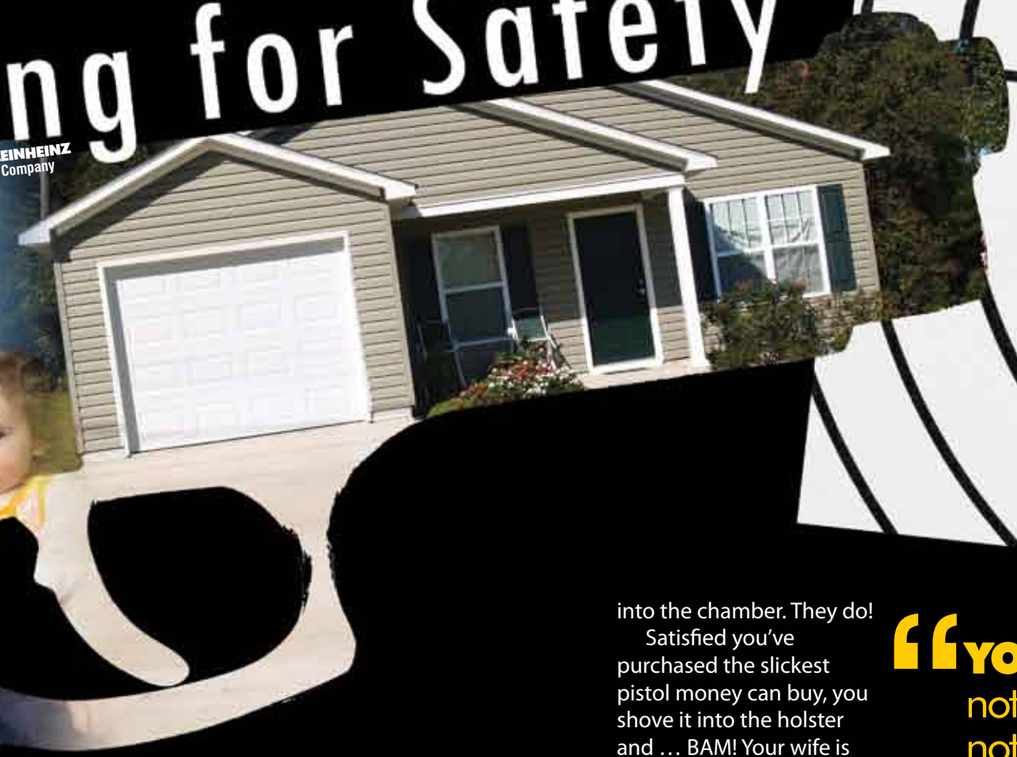
- **Crew coordination: It is imperative for crewmembers to quiz/rehearse "what if's" BEFORE having a single-engine failure. During the aircrew brief, discuss specific crew actions in the event of an actual emergency.**
- **Never place a power lever to IDLE if your torque will double beyond single-engine max torque available and the aircraft configuration does not allow single-engine capability.**
- **Make sure to crosscheck indications to verify if you have an actual engine emergency.**



Gunning for Safety

SGT. JAMES M. KLEINHEINZ
278th Military Police Company
Fort Gordon, Ga.

It never fails. You're at the range when a person walks up and says, "You're in the Army? You can help me with my gun!"



You hear it from people all the time. If you're in the military, people think you must be a weapons expert. Everyone wants your opinion and help. You even begin to believe you're an expert. However, just how much of an expert are you?

Let's go through a scenario. You just got home from a year or more overseas. You carried your issued weapon at all times. You went through all of the training and shot expert on all the ranges. Now that you're back home, you're ready to buy that beautiful Glock 23 or Kimber 1911 that you were eyeing in the pictures hanging on your battle buddy's locker. You decide it's time to make a trip to the local gun store.

At home you admire your new purchase. It's beautiful — a work of art. You were so focused on buying your new pistol that the advice the gun store employee gave you about it went in one ear and out the other. On goes your new high-speed holster. You load the magazine with the Hornady .40 S&W TAP (Tactical Application for Police) rounds you purchased, insert the magazine into the weapon and work the slide to see if the bullets feed smoothly into the chamber. They do!

Satisfied you've purchased the slickest pistol money can buy, you shove it into the holster and … BAM! Your wife is not going to be happy. You just shot a hole through the rug she just bought. After a few choice expletives — and making sure you have all your fingers, toes and no extra holes — you think to yourself, "How the heck did that happen?" Maybe you are not the expert everyone, including yourself, has led you to believe.

The real issue is not that you're normally unsafe. The issue is you just bought a weapon you're not familiar with. This is not the Beretta M9 you carried in theater. The operating controls are different, and that is part of what led to your negligent discharge. Luckily for you, it was only your wife's new rug and not her that was on the "receiving" end. Think of it like this, just because you drive a Ford F150 pickup to and from post every day doesn't qualify you to operate a light medium tactical vehicle. It is the same concept with firearms. Every year civilians and Soldiers alike fall victim to their own pride.

> **"YOU'RE a SOLDIER** and important to not only the **ARMY**, but your **FAMILY**. Do not take chances with **YOUR SAFETY**."

We have many options available to us to combat these problems. For example, the National Rifle Association (NRA) has an online link at http://www.nra.org/nralocal.aspx to help you locate your nearest NRA-certified firearms training program. Beyond that, many local gun ranges and clubs offer firearms safety training at their facilities. Indeed, that training is often a prerequisite for using the range or becoming a member of the club. Take the time to talk to the employees at these ranges and gun stores. Familiarize yourself with the weapon before you buy it, and continue to learn about it after you've made the purchase. Take advantage of these opportunities to further enhance your knowledge.

But don't stop there. Make sure your Family members are also knowledgeable about firearms handling and operation. Take them to the range with you and enroll them in the same classes. Firearms safety should not stop with you.

You're a Soldier and important to not only the Army, but your Family. Do not take chances with your safety. Stay alert. Stay alive.

During the first five months of fiscal 2010, the Army averaged a fatality or injury-producing negligent discharge each month. One Soldier was killed while he was attempting to clear a jam in his Glock handgun and discharged a round into his chest. Another Soldier suffered disabling injuries when a Soldier in his house was handling a shotgun and accidentally discharged it.

When Safety Fails

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

THINK

Leaders, drill home that your Soldiers must THINK weapons safety!

Treat every weapon as if it's loaded.
Handle every weapon with care.
Identify the target before you fire.
Never point the muzzle at anything you don't intend to shoot.
Keep the weapon on safe and your finger off the trigger until you intend to fire.

Three other Soldiers were injured in less serious accidents. In one, a Soldier forgot to clear his weapon before attempting to clean it and shot himself through the hand. An intoxicated Soldier was playing with a handgun inside a vehicle when he discharged it, injuring himself and another passenger. Another Soldier was handling a newly purchased Colt 1911 .45-caliber pistol when, unaware there was a round in the chamber, he pulled the trigger and shot his left hand.

Some Observations

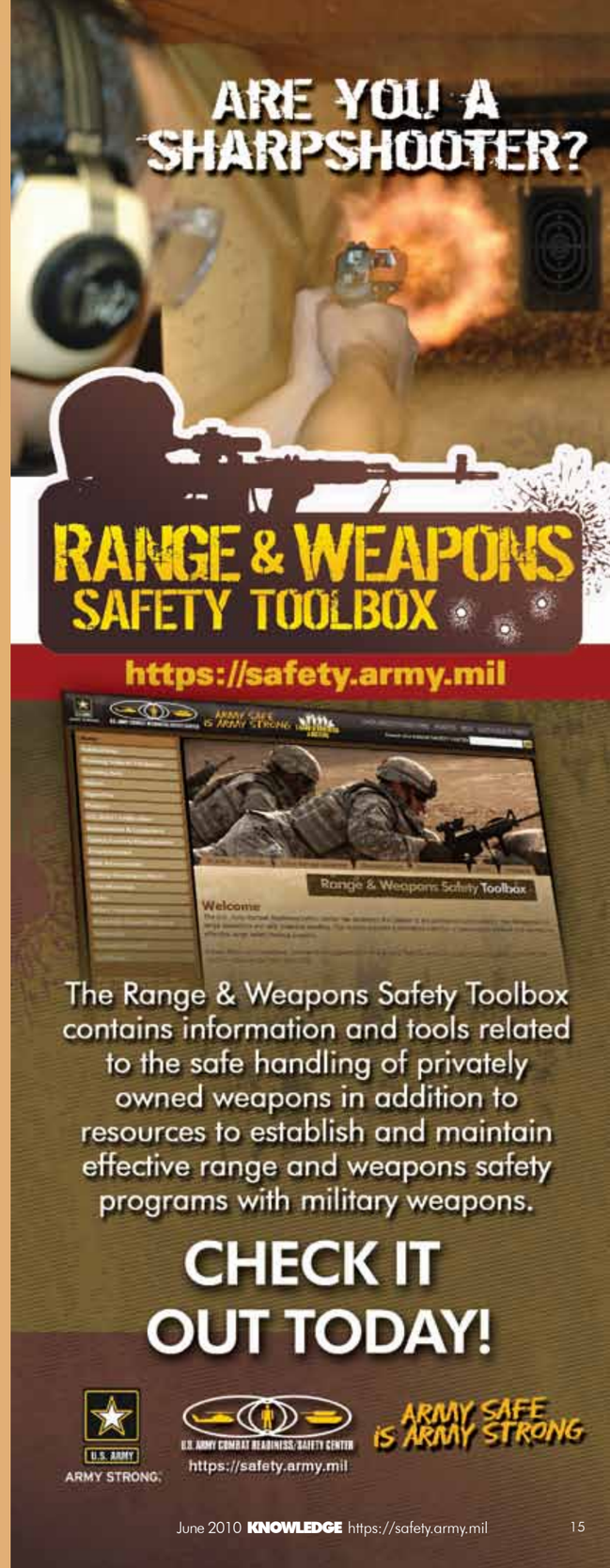
Two of the Soldiers involved in the accidental discharges were mishandling Glock pistols. These handguns lack the externally mounted manual safeties common on many other semiautomatic firearms. Instead, their safety is located on the trigger and is disengaged whenever the trigger is pulled. Because of that, shooters should never place their finger inside the trigger guard unless they intend to fire the weapon. That is essential advice when handling Glock pistols or any other type of firearm.

Clearing the chamber is also essential to firearms safety. The warning, "Always assume a gun is loaded," reflects the fact that people have shot themselves or others with what they thought were unloaded firearms. Never assume a gun is unloaded. Check the chamber every time you pick it up to handle it.

Finally, there is muzzle awareness. The old saying, "Never point a weapon at anything you don't intend to shoot," should be ingrained in every shooter's mind. Each Soldier in the cases above failed to ensure their weapons were pointed in a safe direction. As a result, one Soldier died, another suffered disabling injuries and three others experienced painful injuries.

DID YOU KNOW?

To assist you in raising privately owned weapons safety awareness and help prevent the next accident, the U.S. Army Combat Readiness/Safety Center (USACR/Safety Center) developed a safety training video entitled "No Second Chances." The video is designed for small-group discussion and based on an actual case in which a Soldier died after pointing a weapon at himself while intoxicated. It describes the events leading up to the accident and contains personal accounts from the Soldier's peers and Leaders, highlighting the impact his death on those left behind. "No Second Chances" is available at https://safety.army.mil/nosecondchances and can also be found under the Privately Owned Weapons tab of the Range & Weapons Safety Toolbox at https://safety.army.mil/rangeweaponssafety. We'd appreciate any feedback you may have. Please direct your comments or suggestions to the USACR/Safety Center's Ground Task Force at safe.groundtaskforce@conus.army.mil.



Editor's note: Self-confidence is a great thing, especially when it is based upon proven, successful performance. But self-confidence taken too far can lead to complacency, robbing you of situational awareness when you need it most. In last month's issue, the story "Recipe for an Accident" showed how complacency cost the Army an OH-58D. However, it's not just in combat where complacency can hurt you. In the story below, an off-duty Army civilian found out the price of complacency can be far more than you — or anyone else — would ever want to pay.

Crippling Complacency

BOB VAN ELSBERG
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Fort Rucker, Ala.

Danny Curry hit the ground beside his tractor with a thud. He'd been towing a bush hog, which is basically a giant lawnmower with a 5-foot-long blade, when his tractor's left-rear wheel hit a hidden stump. The sudden impact dumped him onto the ground just inches in front of the tractor's right-rear tire. His worst fear was that the tractor would tip over on him. There was nothing he could do. A paraplegic since he was 10 months old, he couldn't move quickly. Earlier, he'd lowered the tractor's rollover bar to mow under some low-hanging tree limbs. Now, without it, he was in danger of being crushed.

Mercifully, the tractor stayed upright, but his troubles weren't over. Years earlier, the tractor's seat-mounted, pressure-sensitive engine kill switch had malfunctioned and he'd rewired it, bypassing it. Until now, that hadn't been a problem. However, things were about to be much different. Before he could catch his breath, the tractor's right-rear tire rolled over his legs, breaking both of them. And the worst was yet to come.

The riderless tractor pivoted to the left around the stump and swung the bush hog directly toward Curry. The steel blade, designed to chop through heavy brush, instead chopped through Curry's upper and lower legs, tearing skin, muscles, arteries and bones. And, unlike most paraplegics, Curry still had normal sensation in both legs.

"I felt every bit of what happened to me," he said.

Miraculously, Curry was still conscious after the ordeal.

"When the bush hog came off of me, I sat up to see that

> "I was busy thinking about **OTHER THINGS** and **STOPPED THINKING** about the **HAZARDS** of the task at hand. I let **DOWN MY GUARD.**"

my right leg was gone below the knee," he said. He also saw his left leg was broken above and below the knee and part of his foot was missing. His situation was desperate.

"At that point I knew I only had a matter of minutes to make some things happen," Curry said. "My first reaction was to ask the good Lord above for some help. He responded to my request; I know that is the reason I did as well as I did."

Curry knew he'd soon bleed to death if he didn't get medical help. In a bizarre twist of events, as the bush hog tore off his right leg, it also filled the wound with grass and dirt, effectively slowing the bleeding. Severely injured, he considered his options. His wife was out of state, so he couldn't reach her for help. He could stay where he was and hope one of his neighbors would come down the dirt road and notice him — but with only two neighbors, his chances were slim. Although his mother lived in the house nearest his, she was 89 years old and suffered from a heart condition. Curry feared the shock of seeing him would be too much for her, provided he could even make it to her house. He decided his best option was to make his way to Florida State Road 2, which ran next to his property, and try to flag down a passerby. But getting there meant covering nearly 150 feet — a long distance in his condition.

"I just started scooting backward, pulling my injuries with me," he said. "As I was doing that, I was thinking, 'Stay in the shade — don't get in the sun. Stay calm and take deep breaths. This area has a lot of fire ants, so don't drag through an ant bed.' I had the presence of mind to retrieve one of my socks and carry it with me in case I needed a tourniquet."

Curry made it some 100 feet to a tree which offered shade and allowed him to see and be seen from the road. Within a few minutes a car passed by, but the driver, looking at the pasture across the road, never noticed Curry. Frustrated, he decided he'd drag himself to the road's edge if another car passed him by.

A few minutes later, another driver came down the road. Curry waved at her and she, thinking it was a friendly greeting, waved back. As she passed, however, something got her attention. Looking back, she saw Curry on the ground and realized he was injured and came back to help him. Neither she nor Curry had a cell phone to call 911. Fortunately, there was a fire station a couple miles away.

"I asked her to go and alert the onsite medic at the station that something had happened and to tell him who I was and where I was," Curry said.

The woman drove to the station and passed the information to the medic, who immediately drove to Curry's farm. While he couldn't transport Curry, he could render assistance and call for an ambulance. As he evaluated Curry's injuries, he passed the information to the ambulance and helicopter that were en route to the accident site.

Curry estimated it took the ambulance crew nearly 20 minutes to arrive. When they did, they evaluated him and checked for internal injuries. Stabilizing him, they loaded him onto a helicopter for a flight to the nearest Level I trauma center, located at the Tallahassee Memorial Hospital in Florida. After Curry landed, doctors X-rayed him to measure the extent of his injuries. In addition to the damage done to his legs, they found his pelvis had been fractured in four places. After the examinations were complete, the doctor gave Curry his diagnosis.

"He looked at me and said, 'I'm going to have to take your right leg off above the knee, what do you want to do with the left leg?'"

Curry answered, "Well, it really doesn't serve a purpose and I'd hate to carry it around with me the rest of my life — take it off even with the other."

The surgery went well and Curry soon began physical therapy. He set himself several goals. First, he wanted to get off the bed and into his wheelchair. Second, he wanted to go from the wheelchair to the restroom and then get back into his bed. Finally, his ultimate goal was to be able to get back into his truck and return to work at Fort Rucker, Ala. He'd spent 28 years supporting Army aviation programs and Soldiers. Doing that was, and remains, his life's passion.

Curry's recovery went remarkably well and he was back to work in a little more than two months. However, he was a changed man — and not just physically. He'd learned the hard way that complacency can exact a terrible cost. He'd felt so confident that morning on his tractor he'd neglected to use his seat belt and rollover bar — two safety devices that could have prevented his injuries. He'd also ignored the danger of not having a functioning engine kill switch. Had he repaired the switch, the tractor would have stopped running, saving him from being mutilated by the bush hog.

Finally, in his complacency, he ignored the threat posed by the tree stump near the end of the fence. He'd never hit it before, so why should it be any different that day? That morning, Curry let his mind drift from his work and, in the process, sacrificed his situational awareness. Self-confidence and complacency wove a chain of events he couldn't escape. And he knows he was responsible.

"If I had to say what caused my injuries, it was my complacency and not paying attention to what I was doing," he said. "I was busy thinking about other things and stopped thinking about the hazards of the task at hand. I let down my guard."

From his painful experience, Curry offers the following advice to those who might be tempted to let self-confidence degenerate into complacency.

"Avoid becoming complacent — pay attention to what you're doing," he said. "Life is fragile — it can quickly be taken away from you."

THE *Best Pilot* IN THE UNIT

RETIRED LT. CMDR. LAWRENCE DOWNS JR.
Norfolk, Va.

As the commander continued the eulogy, I reflected on his statement and stared at the flag-draped casket in front of the altar. That mahogany box contained all that was left of "the best pilot in the unit" — precious little, since the accident site was a smoking hole in the side of a local mountain. He had missed clearing the ridge by only 10 feet.

Rumor had it that the cause was pilot error, but I couldn't buy that. Pilots of his caliber don't just fly into mountains. There had to be something else — an engine failure or loss of tail rotor. I was sure he had wrestled with the aircraft every inch of the way, trying to get it airborne and save his crew. If he couldn't save that helicopter, no one could.

He thrived on challenge. He did things I could only dream about. We both flew formation, but he could fly tighter. When flying low-level, he flew lower. He flew longer hours and took off in weather that kept me on the ground. His briefs and debriefs were just that — brief.

"Nobody ever learned about flying from talking about it," he said. He didn't believe in preflights — except on checkrides.

"This aircraft has had its daily, right?" he once asked me. "If it flew in, it'll fly out."

The XO was speaking now, recounting the time six months ago when the late pilot had won a medal for serving as officer in charge of a short-notice surge operation. He won all the accolades when he managed to target the high-value "enemy" unit without being detected. It had been a black, moonless night, and he had closed to within two miles by flying at 40 feet and 120 knots. I had flown earlier that night, but I wouldn't trust myself or the autopilot below 125 feet. It was all I could do to relax my death grip on the cyclic. But then, I wasn't him.

"Heck," I remember him saying later, "I could have gone 10 feet lower, but I thought my co-pilot would have a heart attack."

I also knew he had flown more than 50 hours during that five-day period; he had even launched on an eight-hour mission without having slept in the previous 30 hours. However, everyone knew he could handle it. When he wasn't flying, he was directing the action. He was that type of guy. He liked to manage everything. That's why he was always considered for the difficult tasks and why he always got the medals.

No one was going to miss him more than our maintenance officer. He had a reputation for getting the bird up no matter what. If the numbers were close, the plane was up.

"It's all in how you look at the gauges," he said. "Besides, some engineer has added a fudge factor."

Many times, he completed a functional check flight well after official sunset.

"It's not really nighttime while it's still pink," he claimed.

He was sure the commander would give him a waiver if he asked for it. It's not that he broke any rules. He just "bent" them a little.

Then there was the Air Medal. He launched in zero-zero weather — he had a special instrument card — to rescue an A-7 pilot who had ejected 15 miles off the coast. As it turned out, a Coast Guard cutter got there first and made the rescue. However, his basic flight instruments went "boots up" and the airmanship he demonstrated in getting back earned him the Air Medal. He later confided to me that in the rush to launch, he had skipped the checklists that would have probably caught the problem. Checklists were for people like me. He didn't need them.

I glanced at his wife in the front row, stoically listening to the service. His young son and daughter sat beside her, neither seeming to grasp the fact that they would never see their father again.

> "**CHECKLISTS** were **FOR** people like **ME**. He **DIDN'T NEED** them."

In the end, it was a day visual flight rules hop that got him. He always flew a little too low and a little too fast in the valleys up the mountains. He was "training" for his upcoming deployment to a hot overseas area. Never mind that nap-of-the-earth was not our mission.

"When the balloon goes up," he always said, "your mission is whatever they tell you it is. You've got be ready for anything."

That day, power required exceeded power available, the most basic of truths. He had pushed the envelope a little too far this time and didn't make it. He made a nugget's mistake — him, the best pilot in the unit.

"Ashes to ashes, dust to dust," the chaplain said. "From dust we came and to dust we shall return."

Could I have prevented this? Could anyone? All the signs were there. What could we have done?

It suddenly occurred to me that the comment the commander had made in his eulogy was all wrong. The deceased was not the best pilot in the unit. The best pilot is the one who knows his limitations and doesn't push them. The best pilot understands the rules are for everybody, not just the other guy. The best pilot in the unit is the one who adds that little margin of safety instead of taking it away.

The best pilot in the unit is the one who is still with us.

Editor's note: This article was adapted from Approach magazine.

WHY THE RUSH?

DR. PAT LEDUC
Human Factors Task Force
U.S. Army Combat Readiness/Safety Center
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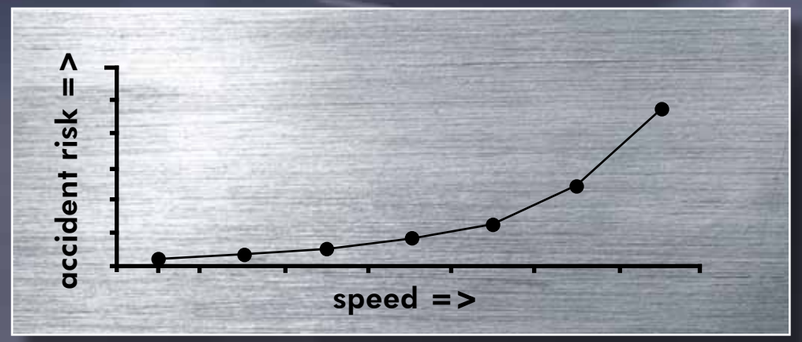
For those of us who have ridden in a New York City cab, it seems only fitting that our country's first arrest for reckless driving was a New York cabbie. By most accounts, Jacob German was the first person in this country to be arrested for speeding. He was stopped by a bicycle patrolman on May 20, 1899, for driving the exorbitant speed of 12 mph on Lexington Avenue in Manhattan (the speed limit at the time was 8 mph). Mr. German was booked and held in jail for a time, but no points were added to his license (New York didn't begin issuing driver's licenses until 1901) and his insurance rates didn't rise. Those times, however, are long gone. Nationwide connectivity of computer systems makes it difficult to escape a ticket or the havoc it wreaks on your insurance rates.

Advances in motor vehicles, much like our computer systems, have grown by leaps and bounds since that first speeding arrest. By today's standards, the first cars were little more than a box with tires and a steering wheel. Now we have air bags, seat belts, anti-skid and anti-roll protection, global positioning system navigation, satellite radio, DVD players and a host of other modern amenities. Despite all those added safety features, are we actually safer now than we were then? You might be surprised to hear that the answer is "not necessarily."

Back in 1899, the top speed was 12 mph. With enough money, we can now buy production cars that top 250 mph and motorcycles that reach nearly 200 mph (when tested by Guinness World Records in 2007, the SSC Ultimate Aero reached 257 mph and the Suzuki Hayabusa reached 196 mph, respectively). Unfortunately, this increase in speed has resulted in an exponential increase in accident rates. Why? People need time to process information — to decide both how and when to react. High speeds affect this process by lengthening the distance covered while the driver reacts. This effectively shortens the driver's response time.

A human's ability to analyze, interpret and react to changing conditions remains fairly constant as long as no distractions are present. However, add in other issues such as fatigue, alcohol, texting or talking on a cell phone (hands-free or not) and our ability to react quickly and correctly significantly decreases. Slowed processing and reaction times, coupled with high speed, means the distance we travel from the time we decide to hit the brakes until we actually stop is much, much farther. Basically, when too much happens in a short period of time, we are often unable to handle it all without making errors. Add to this the simple fact that humans are typically very bad at judging time and space changes and it doesn't make for a pretty picture.



It should be pretty obvious by now that speed and accidents have a strong correlation. Accident rates increase exponentially when speed is increased, as shown on the chart above.

The National Highway Traffic Safety Administration (NHTSA) lists speeding as a major factor in almost one-third of all traffic fatalities nationwide. Safety gains made with higher seat belt use and less drunk driving are being offset by increased fatalities due to higher speeds. Experts are becoming more concerned because accident risks when speeding are similar to those seen with drunk drivers. Traveling 10 to 20 percent faster than the speed limit (just 4 to 8 mph in urban areas with speed limits of 35 to 40 mph) can increase accident risks equal to drivers with a blood alcohol concentration (BAC) of 0.05 to 0.08. Driving about 25 percent faster than the posted speed limit increases your accident risks as much as someone with a BAC of 0.12. That exceeds the legal limit in every state.

While the vast majority of us would never think about getting behind the wheel or jumping on a motorcycle with a BAC of 0.12, how many of us actually feel guilty about driving 50 in a 40-mph zone? Truth is, most of us probably don't. Despite posted limits, our driving speed is strongly influenced by what seems appropriate to us at the time. In addition, our fear of being caught, or our lack of it, also factors into the picture. Just remember, most accidents are caused by human error (mechanical failure accounts for less than 5 percent of all accidents worldwide). People misinterpret situations, make poor decisions and end up overstepping the boundaries of safety. Most of us are not as competent behind the wheel as professionally trained race car drivers.

Have you ever thought about what you are saving by speeding? If you lived exactly 10 miles from work, speeding up from 50 to 60 mph the entire length of the 10 miles would only get you home two minutes faster. Realistically, most of us have never driven to or from work without having to slow for lights, other cars or pedestrians. Is the increased risk of having an accident really worth the two minutes? That is probably less time than it takes you to walk out and check your mailbox. The next time you head out on the road, before you stomp that gas pedal, ask yourself, "Is the rush really worth the risk?"

Think Before You Sink

U.S. COAST GUARD
www.uscgboating.org

Now that the warm summer months are upon us, many Soldiers will be drawn to some form of water, whether it's a river, pond, lake or ocean. Regardless where you choose to cool off this summer, if you plan to operate a boat, canoe, WaveRunner or other personal watercraft, leave the alcoholic beverages on shore.

DID YOU KNOW?

- A boat operator is likely to become impaired more quickly than a driver, drink for drink.
- The penalties for boating under the influence can include large fines, revocation of operator privileges and serious jail terms.
- The use of alcohol is involved in about one-third of all recreational boating fatalities.

Dangers of BUI

Boating under the influence (BUI) is just as dangerous as drinking and driving, so every boater needs to understand the risks of BUI. According to Coast Guard statistics, in 2008, there were 387 boating accidents in the United States in which alcohol use was listed as a contributing factor. These accidents resulted in 153 deaths and 346 injuries. The most common accident vehicle was an open motorboat, which accounted for 198 accidents.

Alcohol affects judgment, vision, balance and coordination. These impairments increase the likelihood of accidents afloat for both passengers and boat operators. Coast Guard data shows that in boating deaths involving alcohol use, more than half the victims capsized their boats and/or fell overboard.

Alcohol is even more hazardous on the water than on land. The marine environment — motion, vibration, engine noise, sun, wind and spray — accelerates a drinker's impairment. These stressors cause fatigue that makes a boat operator's coordination, judgment and reaction time decline even faster when using alcohol. Alcohol can also be more dangerous to boaters because they are often less experienced and less confident on the water than on the highway. Recreational boaters don't have the benefit of gaining experience by operating their boats on a daily basis. In fact, boaters average only 110 hours on the water per year.

Alcohol Effects

Alcohol has many physical effects that directly threaten safety and well-being on the water. When a boater or passenger drinks, the following occur:

- Cognitive abilities and judgment deteriorate, making it harder to process information, assess situations and make good choices.
- Physical performance is impaired — evidenced by balance problems, lack of coordination and increased reaction time.
- Vision is affected, including decreased peripheral vision, reduced depth perception, decreased night vision, poor focus and difficulty in distinguishing colors (particularly red and green).
- Inner ear disturbances can make it impossible for a person who falls into the water to distinguish up from down.
- Alcohol creates a physical sensation of warmth, which may prevent a person in cold water from getting out before hypothermia sets in.

As a result of these factors, a boat operator with a blood

FYI

It is illegal to operate a boat while under the influence of alcohol or drugs in every state. The Coast Guard also enforces a federal law that prohibits BUI. This law pertains to all boats (from canoes and rowboats to the largest ships) — and includes foreign vessels that operate in U.S. waters, as well as U.S. vessels on the high seas.

alcohol concentration (BAC) above 0.10 percent is estimated to be more than 10 times more likely to die in a boating accident than an operator with a BAC of zero. Passengers are also at an increased risk for injury and death — especially if they are also using alcohol.

Enforcement and Penalties

The Coast Guard and every state have stringent penalties for violating BUI laws. Penalties can include large fines, suspension or revocation of boat operator privileges and jail terms. The Coast Guard and the states cooperate fully in enforcement to remove impaired boat operators from the water.

In waters that are overseen solely by the states, the states have the authority to enforce their own BUI statutes. In state waters that are also subject to U.S. jurisdiction, there is concurrent jurisdiction. That means if a boater is apprehended under federal law in these waters, the Coast Guard will (unless precluded by state law) request that state law enforcement officers take the intoxicated boater into custody.

When the Coast Guard determines that an operator is impaired, the voyage may be terminated. The vessel will be brought to mooring by the Coast Guard or a competent and sober person onboard the vessel. Depending on the circumstances, the Coast Guard may arrest the operator, detain the operator until sober or turn the operator over to state or local authorities.

Tips for Avoiding BUI

Consider these alternatives to using alcohol while afloat:

- Take along a variety of cool drinks, such as sodas, water, iced tea, lemonade or nonalcoholic beer.
- Bring plenty of food and snacks.
- Wear clothes that will help keep you and your passengers cool.
- Plan to limit your trip to a reasonable time to avoid fatigue. Remember that it's common to become tired more quickly on the water.
- If you want to make alcohol part of your day's entertainment, plan to have a party ashore at the dock, in a picnic area, at a boating club or in your backyard. Choose a location where you'll have time between the fun and getting back into your car or boat.
- If you dock somewhere for lunch or dinner and drink alcohol with your meal, wait a reasonable amount of time (estimated at a minimum of an hour per drink) before operating your boat.
- Having no alcohol while aboard is the safest way to enjoy the water. Intoxicated passengers are also at risk for injury and falls overboard.
- Spread the word on the dangers of BUI. Many recreational boaters forget that a boat is a vehicle and that safe operation is a legal and personal responsibility.

Boating, fishing and other water sports are fun in their own right. Don't let alcohol turn a great day on the water into the tragedy of a lifetime.

CONTROLLING
Power Management Errors

HAATS COMMAND AND INSTRUCTOR PILOTS
High-Altitude Army Aviation Training Site
Colorado Army National Guard
Gypsum, Colo.

The trend over the last year demonstrates power management errors are occurring more frequently. With deployments into power-limited mountainous environments becoming the main effort, Army aviation must train to a higher power management standard. It is imperative we maintain the capability to conduct full-spectrum aviation operations while deriving maximum utility from every airframe in theater, all while protecting our greatest national treasure — our Soldiers and crews on board. The environmental enemy is ever-present in power-limited mountainous terrain. This patient and lethal enemy can be defeated through tough realistic training.

As aviation commanders, we are challenged to protect Soldiers and aircraft while effectively balancing risk to achieve victory on the battlefield. The demand on Army aviation as a full-spectrum enabler and member of the combat arms team will continue well into the future. We must understand our role in preparing our aviation formations to defeat the human enemy, as well as the environmental enemy. The following should prompt discussion between you, the commander, and your pilots based on observed trends from rated student pilots of all components attending the Colorado Army National Guard's High-Altitude Army Aviation Training Site (HAATS).

Know Your Limits — Personal, Aircraft and Environmental

Each aviator should be conscious of power margin needs at every point of flight. Arguably, if we operate within our personal, aircraft and environmental limits, we should have very little chance of having an accident. Let's begin with the basics. In today's complex environment, we must push aircrews to master the visual meteorological conditions approach while at home station, regardless of pressure or density altitude (DA). Mastery of this maneuver is the foundation of power management. When aircrews can smoothly land their aircraft, using +/- 1 percent from hover power and within +/- 3 feet of their intended landing spot, they have begun to manage power.

Furthermore, by predicting translational lift points while using no more than hover power during takeoff, they begin to develop a maximum gross weight mentality. (Most aircrew training manuals have simulated maximum gross weight tasks.) When conducted over varying terrain with variable winds and gross weights, every takeoff and landing becomes a real-world simulation for maximum gross weight operations. Mastering vertical and horizontal speed and power to a specific point on the ground will virtually eliminate brownout/whiteout (BOWO) accidents, which are linked to power management accidents.

Current simulators can aid in this regimen; however, none of our simulators produce wind and terrain interaction. Practiced frequently in BOWO conditions, the simulator can be a useful tool for initiating changing wind direction, speed and aircraft gross weight in a timely manner. Use every flight and flight environment to lock this data into each crewmember's cerebral hard drive for future reference. Practice these same maneuvers to other than in-ground effect (IGE) locations to learn when and how to bridge power for out-of-ground effect (OGE) and partial-OGE landings.

An engaged commander will encourage his aircrews to grow beyond the rote memorization of the performance planning card (PPC). Demonstrate how correlative learning must be inculcated into the performance planning process. This basic building block goes a long way in establishing aircraft and environmental limitations and provides safety in predictive measurement. For example, when conducting a near maximum gross weight landing into a mountainous area where the maximum torque available will be 84 percent and landing numbers are 82 percent, you don't have much room for error, so good situational awareness is essential, meaning everything else must be perfect. Crews cannot fail to accurately assess the wind and terrain and have a high degree of mastery for managing speed and power (remember the aforementioned +/- 1 percent). Power profligates have no hope of conducting this scenario safely if they cannot land at sea level within +/- 5 percent, nor will they take off safely if they always use +10 percent above hover power for every takeoff. Aircrew skills at sea level are predictive of their ability at altitude; perfect practice builds competency and will keep them within limits and prevent accidents.

Lashed together — precise execution and performance planning (tabular data) — the training process quickly helps match personal limitations with aircraft limitations. To complete the triad, practice in a mountain training area where crews can learn the most complex component, environmental mastery in mountainous terrain. Orography, better known as wind and terrain interaction, requires both science (performance planning, aerodynamics) and art (interpretation, extrapolation and pilot technique) to understand and master power management.

Power management is not only knowing how much power is available; it's knowing when and how to use the power available at the correct time. High DA and complex winds are pervasive in the mountains, and Leaders must train aircrews to understand and mitigate the deadly duo's detrimental effects. Approach angles, speed and escape routes all become the normal lexicon of the mountain pilot. The insidious environmental enemy challenges and conspires against all aviators through the fickly nature of wind speed and direction variation. While most simulators can provide adequate visuals for mountain-type landings, oragraphic interaction and true DA relationships cannot be replicated. This doesn't mean simulators have no value. If aircrews cannot attend formal training at

the HAATS, where challenging and varied landing zones range from 6,500 feet to more than 14,000 feet, the simulator can help commanders develop training exercise periods that focus on approach angles, speed and escape route planning while perfecting speed and power management. Use simulators when aircrews cannot operate in a truly power-limited mountainous environment to begin building new concepts and crew confidence about nonlinear approaches that are required to maintain safe escapes when the environment doesn't afford a safe, straight-in approach.

Army aviators self-inflict power management accidents when they demand more from the aircraft than the power plant can produce. Whether through aggressive combat maneuvering or lack of situational awareness, exceeding power available (Note: This is not settling with power) will cause crews to crash. When this happens, the environmental enemy claims another aircraft and the human enemy claims victory without a shot fired.

Restating the PPC alone does not teach power management. The PPC and tabular data are predictive planning tools. Without environmental mastery and pilot execution, no level of planning or risk assessment worksheet (RAW) will prevent accidents. Continual integration of PPC and tabular data with dogmatic training are Leaders' most effective weapons to prevent losses to the environmental enemy.

The PPC and tabular data are not used exclusively for takeoff and landing. This data is extremely relevant for en route operations. Numerous aircraft and crews have been lost during en route operations for a myriad of reasons. Again, the environmental enemy is patient and omnipresent. If a pilot flying en route encounters bad weather with rising terrain, his innate tendency is to slow down using aft cyclic while unintentionally increasing torque. Crews flying at altitude frequently find they have neither OGE nor IGE capability. In essence, they have become an airplane. If they slow below effective translational lift, they stall and crash. This condition is exacerbated when the aircraft is in a turn or tailwind condition. UH-60s lose 16 to 18 percent power with the anti-ice on, and crews are frequently surprised when the low rotor audio announces the environmental enemy's presence!

Leaders and mission briefers can help develop a better understanding of PPC results by asking pilots about power requirements while reviewing their mission brief. Ask to see what they have computed, talk about the changes in mission, talk about the 14,000-foot pass they must cross, ask if they have the power to land at that altitude if needed and for all environmental conditions. Having all the answers isn't necessary; the correct solution is attained as a team. Nonetheless, critical learning will take place for everyone.

Only through a thorough knowledge of aircraft limitations and the aerodynamics of maneuvers, coupled with how to use a PPC and tabular data, can a pilot make an effective decision when presented with a power-critical situation. Understanding how wind, descent rate, temperature and turbulence affect those numbers is also important.

Crew coordination is a critical enabler at high altitude. Crews must cross-monitor performance and cockpit indications, as well as protect airspeed, especially when power available does not afford an IGE landing.

It is impossible to explain the vast array of techniques used to defeat the environmental enemy in the length of this article. HAATS has published several power management articles in Knowledge and Flightfax magazines to help expand the concepts associated with these techniques. Those articles can be found in the U.S. Army Combat Readiness/Safety Center's multimedia archive at https://safety.army.mil/.

Risk Assessment Worksheets

In Operation Enduring Freedom, we learned that limiting operations to OGE weight plus 500 pounds minimum or a ceiling of 6,000 feet PA is not a realistic or effective way for commanders to manage risk. If used correctly, the RAW has become a great way to assess the cumulative risk of recurring factors affecting aviation safety. Leaders need to continue to emphasize learning points from this tool and not let it become another paper task before flying.

Aviators have many requirements, all of which are necessary. But the best way Leaders can help with power management concerns is to prompt them to think of issues they might have missed. The RAW helps aviators think about these issues and their consequences. If a low power margin risk factor is included on the RAW, ensure pilots use the worst-case scenario for the duration of the flight. What risk value do you assign a low power margin? As commanders, we have freedom to assess the risk using our best judgment; but consider how much room for error a 3 to 4 percent power margin leaves. Also, consider the crew mix for this mission. Does this change the amount of risk you, as the commander, are willing to accept in a power-limited environment?

HAATS stands ready to provide the practical application needed to fully understand and conduct safe power-limited mountain operations. Contact HAATS at http://www.coloradoguard.army.mil/webpages/haats.htm.

Un-Muffling Hearing Loss

BILL WILLIAMSON
Safety Division-Marine Corps Base
Quantico, Va.

We live in a noisy world. Combat military weaponry, personal and vehicle stereos and high-powered machinery are just a few of the noises Soldiers are exposed to every day. Excessive noise disrupts sleep, produces stress, impairs communication and, in high enough doses, causes significant noise-induced hearing loss (NIHL).

Roughly 25 percent of all American military veterans age 65 and older suffer hearing loss above and beyond the natural aging process. Much of the hearing loss these veterans suffered is largely due to preventable, noise-induced wear and tear on the auditory system that happened earlier in their lives.

Soldiers are required to have an audiogram conducted each year to monitor hearing loss. If the test reveals sufficient hearing loss, the medical staff attempts to identify and educate the Soldier on hearing conservation to prevent further hearing loss. Often the education process is nothing more than the issuance of combat earplugs and a pamphlet that explains how to conserve your hearing. The Soldier may attempt to arrest the hearing loss for a few days, possibly even a few weeks. Eventually, though, many fall back on their old ways until the next annual audiogram — at which time the cycle is repeated.

Numerous sources of noise in the environment have the potential to produce NIHL. Because shooting is so prevalent in our military culture, it poses the greatest risk to many Soldiers' hearing. Clinical reports chronicling hearing loss after exposure to shooting have been documented since the 1800s. Reported peak sound levels from weapons have ranged from 132 decibels (dB) for small-caliber rifles and pistols to more than 172 dBs for high-power rifles and shotguns. But what does this decibel scale mean to the Soldier?

It is difficult to grasp how much acoustic energy is in a single gunshot. The acoustic energy in a single report from a high-power rifle, pistol or shotgun is equivalent to almost 40 hours of continuous exposure at 90 decibels adjusted (dBA). In other words, one bullet equals one week of hazardous occupational noise exposure according to the Occupational Safety and Health Administration and Department of Defense standards. Because shells are often packaged in boxes of 50, shooting an entire box without hearing protection is equivalent to working in a 90 dBA environment for a full year! A Soldier qualifying on a target range without hearing protection can produce an entire year's worth of hazardous occupational noise exposure in just a few minutes.

Currently, the only way to detect functional hearing loss is through routine hearing tests. Unfortunately, by the time functional hearing impairment is detected, injury to the auditory system is usually at an advanced stage. Therefore, the key to prevention is education.

Leaders can assist Soldiers at risk for hearing loss by teaching them to avoid exposure to unwanted noise and how to become more sensible when exposing themselves to desired sounds. For example, Leaders can recommend Soldiers avoid other noisy activities the day of and day before firing weapons or exposure to firing on a target range. Research has shown that rest periods interspersed with an otherwise hazardous exposure to noise can greatly reduce auditory damage.

In situations where noise cannot be eliminated, Soldiers should be advised to wear hearing protection. The most commonly used types of protection are earplugs or earmuffs, which come in a variety of styles and sizes. The advantages of earplugs include their small size, low cost and relative comfort. On the other hand, earmuffs fit over the ear, are heavier and provide more protection than earplugs. When kept in good condition, earmuffs can also be considerably cheaper than disposable earplugs. However, a seal must be made between the earmuff cushion and the side of the head. Any break in the seal renders the earmuff useless.

Most Soldiers will find foam earplugs the protection of choice because they are inexpensive, comfortable, disposable and commercially available. While each is effective and wearing both is often recommended, the most effective type of earplug or earmuff is the one that is actually used.

Although there is a lot of published information on NIHL, it is usually undetected until the damage is already done. While efforts have been made to reduce noises at their source, educating Soldiers on the importance of preserving hearing into their old age is the best method for conservation. Leaders can help Soldiers understand the importance of preserving their hearing for their golden years by becoming involved and taking precautionary steps to prevent NIHL.

DECIBEL EXPOSURE TIME GUIDELINES

The following are the accepted standards for permissible exposure to noise, according to the National Institute for Occupational Safety and Health and the Centers for Disease Control and Prevention. For every 3 dB over 85 dB, the permissible exposure time before possible damage can occur is cut in half.

Continuous dB	Permissible Exposure Time
85 dB	8 hours
88 dB	4 hours
91 dB	2 hours
94 dB	1 hour
97 dB	30 minutes
100 dB	15 minutes
103 dB	7.5 minutes
106 dB	3.75 minutes (< 4 minutes)

CAN YOU HEAR ME NOW?

When you notice a difference between loud sounds and quiet ones, your ears are perceiving changes in sound pressure level. Intensity (or volume) is measured in decibels (dB). Zero dB is the softest sound that can be heard. Although pain is subjective, to the average person, levels above 125 dB are painful. To others, levels below 125 dB may be painful. Here are the decibel levels of a few sounds Soldiers might encounter.

Rustling leaves	20 dB
Quiet whisper (3 feet)	30 dB
Normal Conversation	60 dB
Automobile (25 feet)	80 dB
Motorcycle (30 feet)	88 dB
Subway (inside)	94 dB
Power mower (3 feet)	107 dB
Jet Plane (100 feet)	130 dB
.410 shotgun with 28-inch barrel	150.01 dB
12-gauge shotgun with 28-inch barrel	151.50 dB
20-gauge shotgun with 28-inch barrel	152.50 dB
.45 Colt	154.7 dB
.223/5.56, in 18-inch barrel	155.5 dB
.44 Special	155.9 dB
.308/7.62, in 24-inch barrel	156.2 dB
.45 ACP	157.0 dB
9 mm	159.8 dB
.357 Magnum	164.3 dB

Nuts and Bolts: Road-rageous Driving!

SHIRLEY M. PATTERSON
Marine Corps Recruit Depot
Parris Island, S.C.

As an American Automobile Association-certified instructor leader, I have taught driver improvement and remedial driving programs to many servicemembers, civilian employees and Family members. During those sessions, their descriptions of their own aggressive driving were almost unbelievable. Many of them were unaware they had emotional problems that were contributing to their acts of road rage. They thought it was all right to tailgate, honk the horn to force other drivers to move over, pass in a center turn lane and yell and make gestures when passing slower vehicles.

Road rage is defined in the Merriam-Webster dictionary as "a motorist's uncontrolled anger that is usually provoked by another motorist's irritating act and is expressed in aggressive or violent behavior." No matter where you live, road rage and aggressive driving are important to understand. It is up to you to do your best to prevent road rage situations and the damage, injuries and fatalities that can result. It's also important to understand your own emotions and how to channel them elsewhere than toward other drivers. If you don't, you can easily be caught up in an extremely dangerous situation.

If some of the following items sound familiar when you drive, you may be an aggressive driver in need of a behavior change:

- Expressing frustration by cursing, yelling and gesturing toward other drivers
- Frequently changing lanes
- Running red lights
- Speeding

Here are some helpful tips on how to avoid road rage incidents:

- Understand your own emotions
- Identify situations that upset you
- Plan your trips
- Expect others to make mistakes on the roadway
- Don't underestimate the other driver's capacity for mayhem
- Understand that emotions are contagious
- Direct your emotions to actions, not to other individuals
- Delay driving when upset or ask someone else to drive
- Do not make eye contact with an aggressive driver
- Do not make obscene gestures
- Avoid blocking the right-hand turn lane
- Do not take more than one parking space
- If you are not disabled, do not park in a disabled space
- Do not allow your door to hit the parked car next to you
- Do not tailgate

Of the nearly 6 million crashes recorded by the National Highway Traffic Safety Administration during 2008, how many were caused less by out-of-control cars than by out-of-control drivers? How many of them now wish they'd stayed cool, not let their emotions rule?

FYI

There is a legal difference between aggressive driving and road rage. Aggressive driving is a traffic offense; road rage is a criminal offense.

TOPSY-TURVY TRUCKS

INSURANCE INSTITUTE FOR HIGHWAY SAFETY
www.iihs.org

Pickups have an image of being sturdy, hard-working vehicles that can "take a licking and keep on ticking." But as tough as they are, they can have an Achilles' heel — roofs that crush down upon occupants during rollover crashes. This is an important safety issue because pickups have a higher center of gravity than passenger cars and are more likely to roll over in a crash.

Recently, the Insurance Institute for Highway Safety (IIHS) tested five compact pickups to see how well their roofs would protect passengers. The trucks tested were the 2010 models of the Nissan Frontier, Ford Ranger, Dodge Dakota, Toyota Tacoma and Chevrolet Colorado. Of that group, only one, the Frontier, earned a "good" rating. By comparison, the Ranger earned an "acceptable" rating, while the Dakota, Tacoma and Colorado earned "marginal" ratings.

The IIHS tests involved pushing a metal plate against a corner of the pickup's roof at a constant speed while measuring how much pressure was needed to crush the roof downward. The resulting measurement was expressed as a ratio of how many times the vehicle's weight it took to crush the roof 5 inches during the tests. To earn a good rating, a roof must withstand a force four times the vehicle's weight. For an acceptable rating, that ratio changes to 3.25. A ratio of 2.5 is considered marginal, and anything lower is rated as poor.

Here are the ratings for the five trucks tested:

- Nissan Frontier: 4.11
- Ford Ranger: 3.32
- Dodge Dakota: 3.23
- Toyota Tacoma: 3.08
- Chevrolet Colorado: 2.86

For information on how these vehicles fared in other types of crash tests, visit the IIHS's website at http://www.iihs.org/ and look under the More Headlines tab.

Accidents occurred between Feb. 1-28, 2010

AVIATION

AH-64D

CLASS B

- During taxiing into the refuel point, the aircraft initiated a spin during braking and the tail boom contacted the refueling boom. Both the refuel boom and the aircraft tail-wheel assembly were sheared by the impact.

CLASS C

- The maintenance crew detected smoke coming from the target acquisition and designation system assembly during the auxiliary power unit (APU) run-up procedures. The crew shut down the APU without further incident.

MH-6M

CLASS B

- During training, the pilot felt feedback from the controls, followed by a loss of control. The aircraft incurred a hard landing and rolled on its side, resulting in damage.

CLASS C

- The aircraft struck wires during confined area training. All main rotor blades (MRB) sustained damage.

OH-58C

CLASS C

- The crew experienced an uncommanded right yaw during an out-of-ground-effect hover at 250 feet above ground level (AGL), followed by a loss of tail rotor effectiveness. The aircraft rotated five times before touching down. The overtorque reading was 118 percent for five seconds.

OH-58D(R)

CLASS A

- The crew declared a full-authority digital electronic control emergency and crashed during landing to the forward operating base runway. Both crewmembers suffered fatal injuries upon impact.

CLASS C

- The crew experienced a bird strike during terrain flight training. The post-flight inspection revealed MRB damage.

UH-60A

CLASS A

- The flight crew was conducting an instrument approach while operating under instrument flight rules when the aircraft suddenly disappeared from the radar. After radar contact was lost, other aircraft in the vicinity were alerted and identified the crash site. All three personnel onboard suffered fatal injuries.

UH-60L

CLASS B

- The aircraft main rotor system struck a parked Mine Resistant Ambush Protected vehicle while landing. All four MRBs sustained damage.

CLASS C

- The crew experienced an engine failure during short final. The aircraft subsequently entered a rapid descent and struck the ground, resulting in damage to the aircraft fuselage and landing gear.

RC-12K

CLASS C

- The crew experienced smoke in the cockpit at 26,000 feet AGL, followed by loss of the No. 1 engine torque. Inspection revealed engine oil leak.

ARMY AVIATION LOSSES

Fiscal 2010

as of May 6, 2010

Class A/Fatalities	
ATTACK	1/1
RECON	2/4
UTILITY	5/5
CARGO	1/0
TRAINING	0/0
FIXED-WING	2/0
UAS	3/0
TOTAL	14/10

ARMY GROUND LOSSES

Fiscal 2010

as of May 6, 2010

Class A/Fatalities	
AMV	9/5
ACV	7/6
PERSONNEL INJURY includes weapons-handling accidents	13/14
FIRE/ EXPLOSIVE	1/0
PROPERTY DAMAGE	0/0
TOTAL	30/25

UAS

MQ-1C

CLASS C

- The unmanned aircraft (UA) struck an RC-12N during taxi, resulting in damage.

MQ-5B

CLASS A

- The UA crashed shortly after launch and impacted the ground due to loss of control input.

RQ-7B

CLASS C

- The aircraft operator experienced RPM fluctuations and the UA was programmed to return to home base. The engine failed and the UA impacted the ground.

GROUND

ACV

CLASS A

- Several Soldiers in a three-vehicle convoy movement were injured when their M1126 Stryker lost control on a snow-covered improved tank trail and slid nose-first down a ditch into a creek bed. The trail vehicle then rear-ended the second vehicle. Two of the vehicles sustained Class A damage.

AMV

CLASS A

- A Soldier was killed when the M978 HEMTT fuel tanker he was riding in shifted on uneven terrain and overturned. The driver of the vehicle, who was wearing a seat belt, suffered minor injuries.

Personnel Injury

CLASS A

- A Soldier was found unresponsive at the bottom of a hotel pool. Attempts to resuscitate the Soldier were unsuccessful.

DRIVING

POV

CLASS A

- A Soldier was speeding with another Soldier riding as a passenger when their vehicle went off the road, struck a guardrail and became airborne. The unbelted driver was ejected and landed on a dirt embankment. The car then landed on top of him, trapping him beneath its burning engine compartment. The driver and passenger were transported to a hospital, where the driver later died. His seat-belted passenger suffered non-life-threatening injuries.
- A Soldier moved into the oncoming lane to pass a tractor-trailer and was unable to return to his lane before colliding head-on with an oncoming tractor-trailer. The unbelted Soldier was thrown from the vehicle and killed.
- A Soldier was riding as a passenger in a vehicle driven by a civilian when they were struck head-on by another vehicle that crossed into their lane of travel. The accident resulted in the Soldier's death.
- A Soldier was traveling northbound on an interstate when he veered off the road and struck the rear of a tractor-trailer parked on the side of the road. The Soldier was wearing his seat belt, but died from his injuries.
- Two Soldiers died when the vehicle they were riding in crossed the road and struck another vehicle head-on. The Soldier-driver survived, but his two Soldier-passengers died. All Soldiers were wearing their seat belts.
- A Soldier died when he rear-ended a stopped tractor-trailer on the side of the road. The tractor-trailer was transporting propane, and the collision sparked a fire that engulfed the Soldier's car.
- A Soldier was driving a borrowed car when he was broadsided by a drunk driver at an intersection and killed. The Soldier was wearing his seat belt.

POM

CLASS A

- A Soldier was riding his motorcycle at an excessive speed when he collided with a minivan in a T-type intersection. The Soldier, who is reported to have been wearing his helmet, eye protection and gloves, survived the initial impact but died 11 days later while under medical care. The Soldier had not received Motorcycle Safety Foundation (MSF) training.
- A Soldier was riding his new sport bike in the company of another rider when he lost control, struck a guardrail and was thrown from his motorcycle. The Soldier had taken MSF training 18 months before the accident and was wearing his full personal protective equipment (PPE).

POV DRIVING LOSSES Fiscal 2010

as of May 6, 2010

	Class A/Fatalities
CAR	23/24
SUV/JEEP	5/6
TRUCK	3/3
MOTORCYCLE	15/15
PEDESTRIAN	7/8
OTHER*	1/1

*Includes: vans and ATVs

57 TOTAL DEATHS

Fiscal 2009: 62 3 year average: 67

AVOID THE HAZARDS

There is no question the Mine Resistant Ambush Protected (MRAP) family of vehicles provides increased protection for our Soldiers against improvised explosive devices, mines and small-arms fire. However, this increased level of protection does not come without some unique hazards and risks.

MRAP SAFETY AWARENESS

Address the hazards associated with the operation of MRAPs. Implement effective composite risk management, comprehensive training, situational awareness and effective leadership to keep Soldiers safe and avoid loss and damage to equipment.

https://safety.army.mil/MRAP

BE AWARE.

U.S. ARMY
ARMY STRONG

U.S. ARMY COMBAT READINESS/SAFETY CENTER

ARMY SAFE IS ARMY STRONG

A BAND OF BROTHERS & SISTERS

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KNOWLEDGE

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U.S. ARMY

ARMY STRONG.

A BAND OF BROTHERS & SISTERS

KNOWLEDGE

OFFICIAL SAFETY MAGAZINE OF THE U.S. ARMY

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U.S. ARMY COMBAT READINESS/SAFETY CENTER

ARMY SAFE IS ARMY STRONG

https://safety.army.mil

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Mission statement: The United States Army Combat Readiness/Safety Center (USACR/Safety Center) supports our Army by collecting, analyzing and communicating 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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THE FIGHT AGAINST INDISCIPLINE

FROM THE DASAF

"While I am **PROUD** our Army has made **GAINS** on **LAST YEAR'S** historic **REDUCTION** in **FATAL** accidents, we cannot be **CONTENT** with only minor progress in **OUR FIGHT** to **SAVE** lives."

This month, Americans will celebrate 234 years of our nation's independence and honor the courage of brave men and women who have kept our nation free.

Today, the entire Army team plays an important role in keeping our country free and sustaining the principles that make the United States a truly great nation. We could not succeed in this vital mission without the support of every Leader, Soldier, Family member and Civilian, and this is why we need our entire team to stay safe in everything you do. Whether working patrols in Afghanistan, enjoying some down time at home, running an electrical line at your local installation or enjoying time on the lake, your constant dedication to risk management honors those who have come before you and makes a difference in the success of all our efforts around the globe.

The Army team's strong commitment to safety has ushered us into a summer where we are seeing slightly fewer accidental deaths among our ranks, despite a startling increase in fatal privately owned vehicle and motorcycle accidents in May. While I am proud our Army has made gains on last year's historic reduction in fatal accidents, we cannot be content with only minor progress in our fight to save lives.

Although there are exceptions, the vast majority of our fatal POV and motorcycle accidents involve indiscipline, ranging from speeding, neglecting to wear seat belts and personal protective equipment or failing to get required motorcycle training. We've even had some accidents where all three of these factors were involved.

Sadly, indiscipline in the form of speed was involved in two of our most recent POV fatalities. One Soldier was a passenger in a sports sedan driven by another Soldier when the vehicle spun out of control on loose gravel and rolled over into an embankment. In the second accident, a Soldier lost control of the sports sedan he was driving and crashed into a stand of small trees. Both Soldiers were scheduled to deploy overseas within just a few days of their deaths.

In the past, we've put a lot of emphasis on Leader engagement in enforcing standards, and every reduction in fatal accidents is proof engaged leadership works. Since our Soldiers may be on duty for only a few hours a day, the role of our entire team becomes that much more important. Getting the message across that indiscipline in any form is unacceptable isn't just a Leader thing; it's also an issue for our fellow Soldiers, Families and Civilians.

Peers, whether inside the Soldier's unit or outside, have tremendous influence on their friend's actions. Reaching all of our Soldiers and making them a part of the solution is extremely important in building an Army culture where safety is a way of life, not an on-the-job regulatory requirement. It's important to remember that peer pressure can be a positive thing, and that's the kind of environment we need to keep fatal accidents from happening.

Families are perhaps the most important stakeholders in Soldier safety. In recent years, our Army has done a great job in engaging spouses and their Families through Family Readiness Groups and Family Readiness Support Assistants with safety tools such as the Family Engagement Kit. But we cannot forget that young, single Soldiers comprise a large portion of our force, and their Families — parents, siblings and other close relatives — play just as important a role in risk management as military spouses. We must also tap this valuable resource if we want to keep all our Soldiers safe and in the fight.

Finally, we can never underestimate the power of our Civilian workforce. In an Army where change is certain, Civilians provide vital continuity for Leaders and Soldiers alike. They have a primary role to play in looking out for the entire team, including our Soldiers. One vital part of the Civilian workforce is our Civilian safety professionals at the installation and operational levels. They possess unparalleled knowledge and firsthand experience of the risks their Soldiers may encounter. Please take advantage of the continuity and experience of all our Civilians, but, most importantly, these safety professionals. Harness their expertise and let them help you in your fight against preventable accidents.

Every Soldier deserves a chance to serve their country honorably and safely. Whether you're a Leader, a Soldier, a Family member or a Department of the Army Civilian, please do your part to keep the Soldiers in your life safe. The USACR/Safety Center has some great tools to get you started, so check out our website (https://safety.army.mil) and let us know how we can better serve you.

Thank you for what you do every day for our Band of Brothers and Sisters. Enjoy this summer while it lasts. Play hard, but always play it safe.

Army Safe is Army Strong!

WILLIAM T. WOLF
Brigadier General, USA
Director of Army Safety

FIVE DEADLY WORDS

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During my two years at the National Training Center (NTC) as the senior aviation trainer, I saw many units train under extremely harsh conditions. After a brief period, it became obvious that most individuals were making the same mistakes.

During one particular rotation, the same unit incurred three aviation accidents. My curiosity was piqued. Why were these accidents occurring? I thought the answer might be in past accident reports. I gathered and read numerous reports from the NTC happening over an extended period. The accidents were both ground and air. As I read the material, I noticed certain words appeared repeatedly in the safety investigators' write-ups. These words described the cause of accident.

I began to highlight the words until it was obvious that five words were used consistently to describe why the accidents happened. Keep in mind, these were several different accidents — air and ground — and investigated by different officers. Even so, the same words described each accident most often. The words were:

1. **Untrained**
2. **Unsupervised**
3. **Undisciplined**
4. **Overconfident**
5. **Complacent**

Shortly after I finished my tour at the NTC, I was fortunate to take command of the 10th Aviation Brigade and we deployed to Afghanistan. I used the "five words" as my safety philosophy and challenged my leadership to be on the lookout for these five words in their units. I am convinced that every unit is in stages where one or more of the safety words could describe their current safety condition. I believe deeply that no matter how good or safe you think you are, your unit could be described by these five words. The challenge for Leaders is recognizing these potential hazards, mitigating the risks as much as possible and controlling the rest.

Conditions are constantly changing. This month, your unit may be untrained; however, six months from now, overconfidence or complacency might be your biggest problem. This is especially true of our great troops deployed to Iraq or Afghanistan. A Leader must recognize and take action to deal with these deficiencies before an accident happens. The answer is simple and as old as the Army itself: Leaders take care of their Soldiers. That duty is all encompassing, touching almost every aspect of our personal and professional lives.

A Leader's responsibility for safety includes establishing an organizational culture emphasizing the importance of safety. This is more than just safe-driving lectures. A safety culture is, instead, a continuing educational process that seeks to stimulate an attitude of true safety consciousness in every member of the unit.

A Leader must also supervise and take immediate and effective action against deviations from established standards. Inherent to authority is the obligation to issue and enforce policy. Too frequently, accident investigations reveal a fateful deviation from regulations. Supervision and enforcement can prevent many such occurrences. Be responsible and accountable for your Soldiers. Take a hard look inside your unit, assess the hazards and then give directions to fix them. Accomplishing this can't be done by sitting in an office. You set the tone and standards for your unit. "Walking the talk," means getting out and walking the flightline or motor pool and having that essential "eye-to-eye" commander involvement with Soldiers.

Furthermore, recognizing the five words in your unit shouldn't be shameful. Point out those deficiencies to your subordinates and superiors. Conversely, to deny the fact that your unit is untrained, unsupervised, undisciplined, overconfident or complacent is a dereliction of duty. The result can be disastrous if you don't fix those problems.

There are Leaders who fail to either recognize or believe their unit is unsafe. I saw this firsthand on several occasions. Here is an example. During a meeting with my subordinate Leaders, I conveyed my findings of our brigade assessment and gave direction to fix certain aspects. It was my nature to conduct the assessment and provide my evaluation, letting them correct the issues.

During the meeting, one of my noncommissioned officers (NCO) challenged me, saying his unit did not fall into any of those five-word categories. I disagreed and told him I would look at his unit and point out the mistakes. He respectfully invited me into the unit with the date and time coordinated.

On the way to the unit location, we positioned the aircraft for fuel at the forward arming and refueling point (FARP). As the aircraft went to idle, a refueler approached the aircraft. He was not wearing a shirt, gloves, helmet or eye protection. It was standard procedure in every unit to wear personal protective equipment in the FARP. The refueler proceeded to refuel the aircraft that he "knew" his brigade commander was occupying. Of course, I stopped him, shut down the aircraft and demanded the NCO who challenged me on my philosophy to report to the FARP to witness this breakdown in professional discipline and standards. It was not my intent to gloat but to merely point out how dangerous denial can be. I wasn't even looking for a deficiency at the time; however, there it was, an accident waiting to happen. If described in the accident report, it would have said, "The Soldier was undisciplined, overconfident and complacent in his duties."

I encourage every Leader to understand the risk management process and ensure safety awareness is ingrained in everything your Soldiers do. As commanders and supervisors, we are responsible for establishing and enforcing effective safety programs. My "five words" philosophy is a simple way to communicate the point. Don't hesitate to use the same idea. I hope my experience can help you be a more successful Leader and, better yet, save lives. If you can think of a better way, do it!

WHERE'S YOUR NEXT ACCIDENT?

(AND WHAT ARE YOU DOING ABOUT IT?)

CAPT. MATTHEW TURCOTTE
2nd Battalion, 349th Regiment,
188th Infantry Brigade, First Army Division East
Fort Stewart, Ga.

Good composite risk management (CRM) can set the stage for safe and successful post-mobilization training operations. This was true for the 2nd Battalion, 349th Regiment, 188th Infantry Brigade, First Army Division East, as they integrated CRM and military planning during three weeks of training. The unit conducted more than 220 accident-free convoys, most of which were during hours of darkness, that involved more than 3,500 vehicles.

The battalion commander's intent regarding safety was given before deploying from Fort Stewart, Ga., to Camp Shelby Joint Forces Training Center (CSJFTC), Miss. His goal was to foresee and effectively mitigate risks to prevent accidents during the 278th Armored Cavalry Regiment's (ACR) post-mobilization training.

The 2nd Battalion ("Ready Support!"), 349th Regiment, joined other battalions in the 188th Infantry Brigade in planning, resourcing and validating post-mobilization training for National Guard and Army Reserve formations supporting the First Army Division East Army Force Generation process. The goal was to ensure combat commanders received fully trained, combat-ready forces for Operation Iraqi Freedom, Operation Enduring Freedom and Kosovo Force. During 2010, First Army Division East will mobilize, train and deploy roughly 93,000 Soldiers, Sailors and Airmen, as well as Department of State and Department of Agriculture professionals.

During the 278th ACR's post-mobilization training at CSJFTC, the 188th Infantry Brigade's objective was to provide theater-focused training for the Soldiers of the 278th ACR in the conditions and scenarios they will likely encounter in Iraq. The "Ready Support!" battalion was tasked with conducting movement control center operations, which included traffic circulation and control around Camp Shelby. The battalion used the five steps of CRM — identify hazards; assess hazards to determine risk; develop controls and make risk decisions; implement controls; and supervise and evaluate — to ensure the 278th ACR safely conducted its post-mobilization training.

Identify and Assess Hazards

The battalion is an "away team," which means it travels to various mobilization training centers and is not always familiar with those installations. Upon receiving the operations order for the 278th ACR mission, the battalion deployed on several reconnaissance missions to CSJFTC. Becoming familiar with the training facilities and areas, the battalion's members worked closely with CSJFTC garrison staff, the 177th Armor Brigade (the home team), military police, the Mississippi Highway Safety Patrol and Mississippi Department of Transportation (MDOT) personnel.

The brigade and battalion began identifying hazards as they mapped out the training areas and routes on which convoys would be conducting operations. Convoy operations would consist of a minimum of five escort vehicles and a maximum of 20 vehicles, including tractor trucks (M1088s) with 20-foot trailers, during the three mission readiness exercises.

The most significant hazard identified by the battalion was an intersection that wasn't controlled by a traffic signal that led from Mississippi Highway 98 onto the Camp Shelby East Gate road entrance. To enter the CSJFTC training area, convoys of 20-plus vehicles would have to cross two lanes of oncoming traffic traveling at 65 mph. Several other crossing points along the highway were also identified and assessed as hazards.

Develop Controls and Make Risk Decisions

The battalion identified and assessed hazards on the civilian highways and determined there was an initial high level of risk. Controls were then developed and applied to lower those risks.

To develop the controls, the battalion discussed CRM options at the identified hazardous points with CSJFTC military police and 177th Armored Brigade. Unfortunately, CSJFTC doesn't control the traffic flow on Mississippi highways and hadn't established a standing operating procedure (SOP) to mitigate heavy traffic flow through these areas. Upon learning this, the battalion contacted MDOT for assistance.

In response, MDOT personnel came out the following day to review the dangerous intersection and placed two message boards along

Highway 98 stating, "CAUTION: CONVOY CROSSING." MDOT also set up a secondary message board to warn traffic that they were approaching the hazard, as well as barrels with rotating amber warning light systems (RAWLS) along the crossing point to further identify the area.

Once CRM controls along the highway were in place, MDOT personnel provided about two dozen more traffic barrels to identify crossing points on Highway 29. Unfortunately, MDOT was unable to supply more message boards for the highway due to other requirements, so the battalion developed its own message boards. Using two large map boards, the battalion placed signs at the north and south end of Highway 29 stating, "CAUTION: CONVOY CROSSING," in large text. In addition, RAWLS were then added to emphasize the signs. These combined efforts between the battalion and MDOT reduced the risk level from high to moderate.

Implement Controls

Risk management controls were then implemented by including them into a written order, mission briefing and SOP. The battalion published the Traffic Circulation and Control Annex to the mission operations order and provided it to all units involved in the training mission. The annex included movement operations, guidelines, overlays, convoy route descriptions, hazards and control measures along the routes, as well as key safety issues for the convoy commander's safety brief. The plan was established and disseminated throughout the ranks.

Supervise and Evaluate

By the time the exercise was ready to commence, the battalion had used CRM to mitigate the risks and fulfill the commander's intent. The final step was supervising and evaluating the training operations to ensure the controls were being enforced to standard. This provided the means to validate the effectiveness of the CRM controls in supporting the exercise's objectives and desired outcomes.

The operational task the battalion faced was bringing in the 104th Transportation Company (TC) from Fort Benning, Ga., to assist in the 278th ACR mobilization training. The transportation company's mission was to portray contracted and military truck drivers escorted by military forces as they move supplies around Iraq. The 104th TC convoyed from Fort Benning to Camp Shelby in multiple serials of 20 or more vehicles. Foreseeing the risks to the 104th TC at the intersection of Mississippi Highway 98 and the Camp Shelby East Gate entrance, the battalion requested the Mississippi Highway Safety Patrol monitor the intersection and escort the 104th TC safely onto CSJFTC. The mission was a success, and the control measures proved effective.

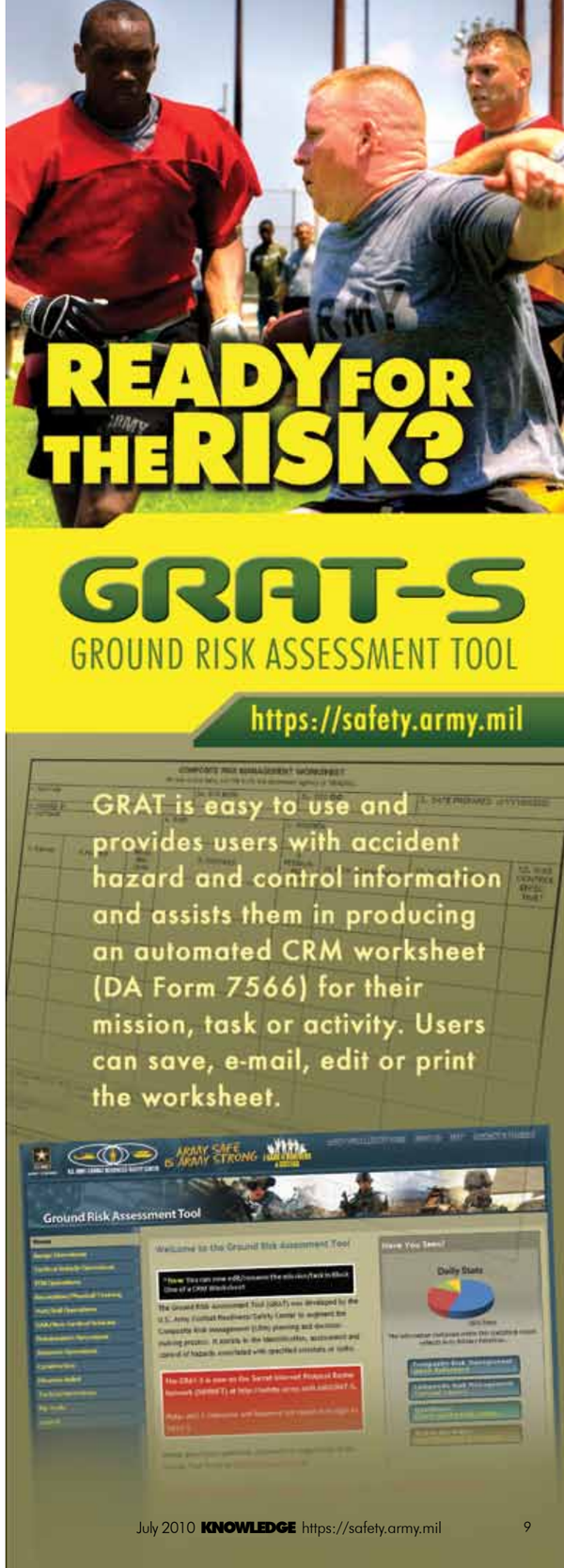
Upon their safe arrival, the battalion briefed the 104th TC on the concept of operations, the traffic circulation and control procedures, safety and the CRM control measures in place. After the operations brief, the battalion led the 104th TC through a number of rehearsals, including reporting procedures, breakdown procedures, mission operations and route reconnaissance. The 104th TC then began internal planning and rehearsals to familiarize themselves with the hazards they were going to encounter on a daily basis. In addition, RAWLS were issued to each vehicle and strict motorpool SOPs were established.

Prior to every mission, the convoy commander would provide his Soldiers with an operations brief followed by an up-to-date risk assessment and safety brief. The brief included performing preventive maintenance checks and services before and after movement, current road condition status and hazards, weather reports, speed limit changes and the planned route. The briefing also ensured everyone had the medical evacuation, movement control team (MCT) and maintenance unit contact information.

The battalion practiced CRM daily, revising the risk assessment according to operational and weather changes and conditions. In addition, the battalion conducted numerous after-action reviews to identify any hazards that were not identified in the initial assessment or new hazards that evolved during the operation. The battalion also assessed the effectiveness of the control measures at eliminating hazards and reducing risks.

The Payoff

"Ready Support!" successfully completed the steps for CRM during this training. With the assistance of the 104th TC, the MCT conducted 228 convoys with more than 3,500 vehicles during the three weeks of training. Coordination with MDOT and the highway patrol successfully mitigated the risks, resulting in accident-free training. The commander's intent was met and the 278th ACR was prepared to deploy to Iraq. The success of CRM in planning, preparation, execution and assessment led to follow-on units implementing the same risk management controls for follow-on operations. «



HAS YOUR CAR HAD ITS CHECKUP?

CHIEF WARRANT OFFICER 2 ROBERT MORRIS
C Company, 2-159th Attack Reconnaissance Battalion
Stork Barracks, Illesheim, Germany

A well-maintained vehicle is a safer vehicle on the open road. As a company safety officer for my unit, I'm sometimes asked if vehicle inspections have been properly completed. My typical response is "yes and no." While it says on paper that they have been done, I know in the back of my mind that many were "pencil-whipped."

Fortunately, in the last three years I have been in this unit, we have not had a privately owned vehicle (POV) fatality. Unfortunately, I am concerned that may have created a false sense of security. So, as the safety officer, I do my best to provide reason and applicability to why we are required to practice safety as we do.

The first step in proper vehicle maintenance is to have it serviced according to the schedule in your owner's manual. At different mileage intervals, certain maintenance actions should be performed on your car by trained technicians. In addition, should you be stationed in a foreign country like my unit, there may be other inspections your vehicle must pass before it can be registered or driven. Beyond these things, however, there are simple checks you can do to help keep your vehicle safe on the road. By simply using your senses and checking the area around your vehicle for leaks, noticing unusual odors or listening for strange noises, you can often detect common vehicle problems.

For example, look at the area beneath your vehicle. Small stains or an occasional drop of fluid under your car may not mean much, but wet spots or puddles deserve attention. You may be losing coolant, engine oil or transmission or brake fluid.

Some problems just "smell" like trouble. Here are some examples:

- The smell of burnt toast — a light, sharp odor — often signals an electrical short with burning insulation. To be safe, do not drive the vehicle until the problem is diagnosed.
- The smell of rotten eggs — a continuous, burning, sulfur-like smell — usually indicates a problem in the catalytic converter or other emission-control device. Do not delay getting the problem diagnosed and repaired.
- The smell of gasoline vapors after a failed start could mean you have flooded the engine. However, if the odor persists, chances are there is a leak in the fuel system. This is a potentially dangerous problem requiring immediate attention.
- A sweet, steamy smell typically indicates a coolant leak. If the odor is accompanied by a hot, metallic scent and steam is coming from under the hood, your engine has overheated. Pull over immediately, as continued driving could cause severe engine damage.

Your car can "sound" like trouble too. Here are some common noises and what they could mean:

- **Squeals** — shrill, sharp noises usually related to engine speed — can indicate loose or worn power steering, fan or air-conditioner belts. Also, some vehicles have belt tensioners that can wear out and cause squealing.
- **Screeches** — high-pitched, piercing metallic sounds that usually occur while the vehicle is in motion — are often caused by brake wear indicators letting you know it's time to have your brakes serviced. Some brake systems are designed to make a clicking or chirping sound as the brakes get to the point of needing maintenance.
- **Rumbles** — low-pitched, rhythmic sounds — could point to a defective exhaust pipe, catalytic converter or muffler, or could indicate a worn universal joint or other driveline component.
- **Heavy knocks** — rhythmic, pounding sounds — can indicate a worn crankshaft, connecting rod bearing(s) or a loose transmission torque converter.
- **Clunks** — random thumping sounds — could indicate a loose shock absorber or other suspension component. Clunks may also indicate a loose exhaust pipe or muffler.

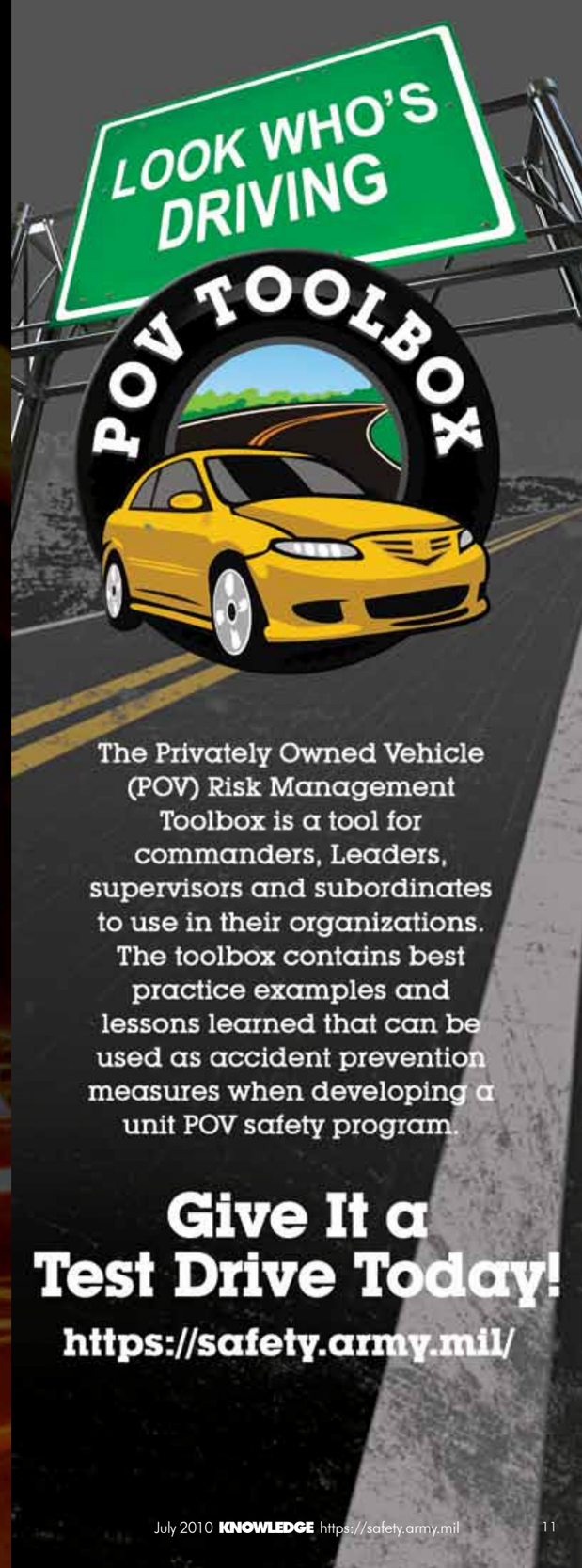
You might be saying to yourself, "I'm not a mechanic." Despite that, the list below contains some things you can periodically check to keep your vehicle running safely. Hint — looking up these in your owner's manual will help you spot what to look for.

- Engine oil level and cleanliness under the hood
- Antifreeze/coolant level
- Brake and power steering fluid levels
- Transmission fluid
- Belts

Typically, you'll find the fluid reservoirs for the radiator, power steering and power brakes inside the engine compartment. Most will have fill-level lines marked on them. Ensure the fluid levels don't fall below the minimum line or go above the maximum line. Also under the hood you will find the dipsticks for the engine oil and automatic transmission fluid. It is important to read the instructions in your owner's manual on how to check these fluids. Also, keep an eye out for any leaks or worn tubes or hoses.

Other things to be watchful for include loose electrical connections, worn or exposed wires, warped or frayed accessory belts and damaged or loose hose clamps. You should also check your battery periodically for corrosion and to see when it should be replaced. The typical life of most batteries is three to five years. However, that can be shortened if you live in an area with extremely cold temperatures or if most of your commutes last less than 20 minutes.

You don't have to be a trained mechanic to keep your car in good running condition. A big part is just taking a little extra time to make sure your "wheels" get an occasional checkup.



STAR-SPANGLED Bummer

JEFF MILLER
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Every July Fourth, Americans gather at parades, barbecues and other events to celebrate our nation's independence. Traditionally, fireworks are the highlight of these celebrations. All too often, though, the night ends badly due to someone's carelessness. Unfortunately, I speak from experience.

DID YOU KNOW?

The Consumer Product Safety Commission reports there were seven fireworks-related deaths in 2008. Two people were killed in incidents involving aerial and display fireworks; one person died in a fire where a firework was the ignition source; three people were killed in incidents involving homemade fireworks; and one person, who was on oxygen, suffered serious burns and later died after a firecracker exploded near his face.

It was early in the evening and my friends and I were searching for something fun to do. We sent out text messages inviting other friends to come over to the house and eventually had a large crowd. So now what? We decided small explosives were the answer, so several of us piled into the car and headed to the nearest fireworks stand.

The fireworks at this particular stand were relatively inexpensive, which meant we were going to get a lot of bang for our buck. Almost $500 later, we realized it was time to head back to the party. We decided our neighborhood wasn't a good place to set off our stash, so we moved to a nearby field. (Side note: There was no alcohol involved up to this point.) A friend pointed out that the field grass was really dry, so this also might not be the best location for our celebration. Regrettably, "management" gathered and decided we'd stay, and a small clay pit in the field would be our launching pad.

We started with the smaller fireworks, but the crowd was eager for us to bring out the big guns. This is where our problems started. The weather on this particular night was clear, but the wind was steady and beginning to pick up. At one point, the fireworks sparked a small grass fire, but we easily extinguished it. Afterward, we should have used composite risk management, picked up our fireworks and found a safer location, but, once again, management decided we would stay.

The next few rounds of fireworks went off without a hitch. Then a friend lit a firework that looked like a big sparkler. The sparks from the firework started another grass fire that quickly grew larger than anything we'd previously encountered. We tried to douse the flames with bottled water, but the fire continued to spread. To make matters worse, there were houses just 200 feet away. Long story short, my night ended with the sound of sirens, a burnt jacket, an ashy face and two lungs filled with smoke.

Fortunately, no one was injured and no property was damaged. Thanks to our carelessness, though, our night was ruined. We should have heeded our friend's advice and moved to another location, preferably one free of weeds, shrubs, grass and other flammable materials. We also should have ensured we had a garden hose handy in case an errant firework sparked a fire.

Remember, when you play with fire, you might get burned. This Independence Day, use common sense and think about what you are doing. Fireworks are fun, but they can be dangerous if not properly used.

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.

Listen up, big brother

CHIEF WARRANT OFFICER 4 SCOTT WITZ
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When I was a kid, I always looked up to my older brother, Steve. I respected him, and he always liked assuming the role of "big brother." Later on, when I got old enough, I joined the Army and was assigned in Germany with the 1st Brigade, 16th Infantry Regiment (part of the "Big Red One"), as a 91B combat medic.

Growing up, I never wore my seat belt because I felt it was uncomfortable. In fact, before going to Germany in 1984, no one ever stressed the importance of wearing seat belts. However, while I was in Germany, I had to go through the gate every day to get to work. The military police would check my ID and ensure everyone was wearing their seat belts. In the beginning, I would put my seat belt on before going through the gate and immediately remove it afterward. Eventually, I changed my view on seat belts and it became second nature to wear them.

When I returned from Germany, I had a new Saab 900 waiting for me in a crate in Virginia. I was very proud, as this was my first new car. I picked up the car from the port and drove it home to Kentucky to show it to my Family. Everyone was very impressed with my success in the Army and my new car. Of course, I immediately gave the keys to Steve and said, "Let's go for a drive!" He got into the driver's seat and cranked the engine.

Steve put the car in reverse and was about to back out of the driveway when I said, "Hey, put on your seat belt." He stopped the car and answered, "Listen, I don't wear seat belts." I had always respected him and followed his instructions, but that was before I joined the Army. I hadn't seen my brother for three years and I had grown up considerably.

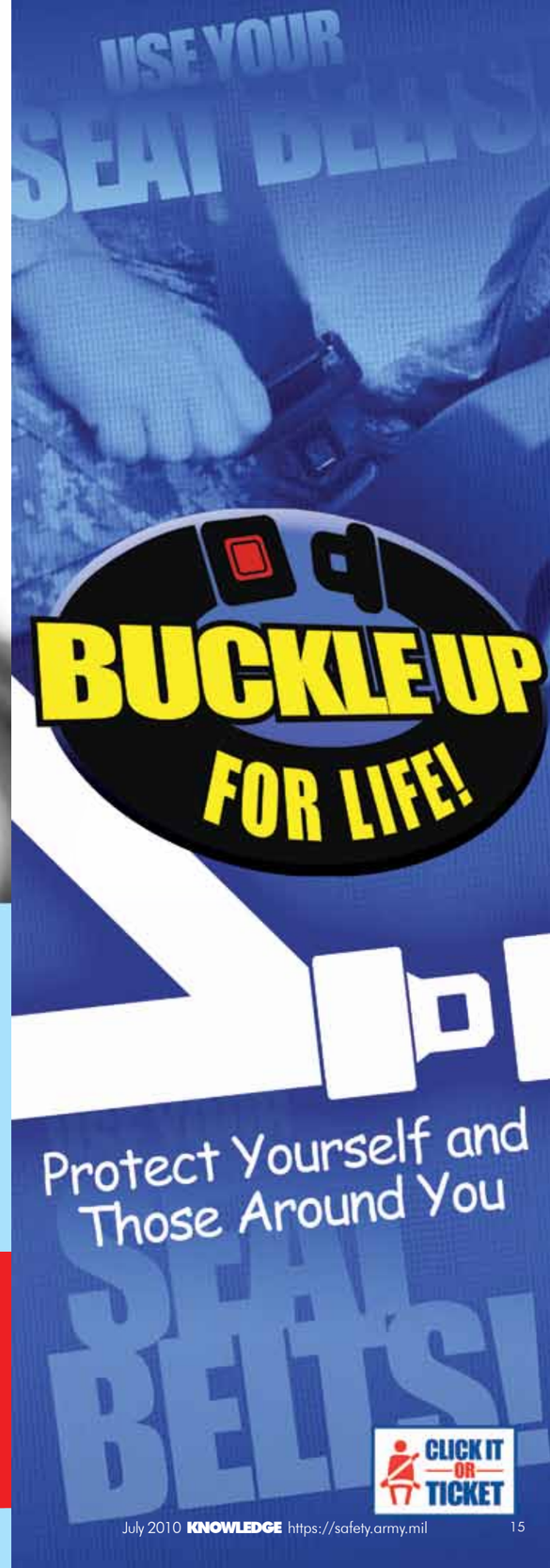
I told Steve I would feel much better if he buckled up. He made it clear to me that he didn't wear seat belts — period! I grabbed the emergency brake and told him if he didn't wear his seat belt, the ride in my new car was over. After an angry debate, we both exited the Saab. I tried to explain to him my reasoning — that one never knows when they're going to be involved in an accident — but he didn't want to hear it. He was about to wish he had.

Three weeks later, Steve ran straight into a telephone pole. It was his first car accident. He wasn't wearing his seat belt and he hit the steering wheel with his chest and his head struck the windshield. Steve was badly injured and placed in intensive care — almost losing his life. After his stay in the hospital, he needed plastic surgery to repair the facial injuries caused when he hit the windshield.

My brother finally told me I'd been right about seat belts. Now he won't even move his car without first buckling up. It was a hard lesson for him to learn, but I'd finally earned the right to say to him, "Listen up, big brother!"

FYI

During 2007, the National Highway Traffic Safety Administration estimates the use of seat belts in motor vehicles saved an estimated 15,147 lives.



IN THE CLOUDS

CHIEF WARRANT OFFICER 4 JAMES P. BOHANON
A Company, 7th Battalion, 158th Aviation Regiment, 244th Aviation Brigade
Fort Hood, Texas

The night I learned the most about flying was back in the early 90s when I was a new warrant officer pilot in command (PC) in an OH-58C/S (remember those?). I was flying with a more experienced chief warrant officer as co-pilot. Our mission was to perform night navigation with a twofold objective of gaining more knowledge of the local flying area and building the co-pilot's time toward the 50 hours required for making PC.

The co-pilot was new to Fort Hood, having recently transferred to our unit from Germany. He had planned the flight route to go north for about 15 minutes, then west for about 30 minutes, south for about 30 minutes and then return home. The route roughly paralleled several lightly traveled two-lane state highways.

The weather forecast that night included a 2,000-foot overcast sky. We were briefed to not go below 500 feet above ground level (AGL), so we thought it was going to be an easy, low-risk night vision goggle (NVG) flight. However, a few minutes after turning to the west, we noticed the ceiling had dropped and visibility was less than predicted. As we continued to the west, the ceiling and visibility continued to decrease, forcing us to descend to maintain minimum cloud clearance requirements. I mentioned to the co-pilot a couple of times that I was uncomfortable with the degraded weather conditions, which were getting worse. He tried to reassure me by answering, "This is nothing; I've flown in a lot worse than this. In Germany, it was like this or worse the entire winter."

However, as we moved farther to the west, the ceiling and visibility continued to decrease. We frequently discussed the weather. Before the planned route turned south, the ceiling dropped and the visibility became so low that we decided to turn around and return to the airfield. As a more experienced pilot and navigator, the co-pilot wanted to use this opportunity to teach me how to use the NVG spotlight to illuminate the reflective markers along the centerline of a southbound highway running east of the original route. We turned to the south and flew low above the highway with the NVG spotlight turned toward the reflectors on the road below.

We had been using the lights from the built-up areas to the north and west to illuminate the bottom of the clouds, but when we turned to the south, we turned away from those lights into a much darker, more rural area. I was on the controls, and the co-pilot continued to navigate as we followed the highway south. By this time, we couldn't see much to the sides or front, but we could still see the highway and the reflectors.

It was so dark that it was difficult to see the bottom of the clouds. As I looked out ahead of the aircraft, I kept thinking to myself, "Why can't I see any lights out there? Wearing goggles, I should be able to see lights. Maybe there's a ridgeline ahead of us; I'd better watch the road closely in case it rises quickly." I was surprised when I saw a small cloud pass underneath the aircraft. I instantly announced on the integrated communications system, "There's a cloud passing under the …" then everything outside the aircraft suddenly became bright gray. I immediately experienced spatial disorientation and transferred the controls to the co-pilot.

The co-pilot entered a climb and began a deceleration to the aircraft's maximum rate of climb airspeed as I conducted other steps of our local inadvertent instrument meteorological conditions (IIMC) procedures. During the climb, the co-pilot continued to decrease the airspeed until it was below our targeted airspeed. More than once I mentioned to him we needed to increase our airspeed to maintain the maximum climb airspeed. He continued to slow the aircraft and I again reminded him about the airspeed as I pushed forward on the cyclic. After that, everything was fine.

Those first few seconds in the clouds were some of the most "interesting" in my life. It seemed like an eternity, but we finally broke through the clouds at about 6,000 feet mean sea level. After what we'd been through, seeing the nearly full moon illuminating the cloud tops was an incredibly beautiful sight. Air traffic control gave us vectors to the airfield and we flew an airport surveillance radar approach down through

> "After what **WE'D BEEN THROUGH**, seeing the nearly full **MOON ILLUMINATING** the **CLOUD TOPS** was an **INCREDIBLY** beautiful **SIGHT**."

the clouds. This was uneventful compared to what it was like when we first entered the clouds.

Although some Army pilots have flown thousands of hours without encountering IIMC, I'm not one of them. However, I've met many other Army pilots who have lived through and learned from the experience. I know we made a lot of mistakes that night before we encountered IIMC, and I thank God and my co-pilot that we were able to respond as a crew and help each other out when it really counted.

When I went through the OH-58 track in flight school, we were told not to encounter IIMC and to keep the aircraft out of the clouds. There were several reasons for that, but the primary reason was that back in the early 90s, roughly one in three Army helicopters was destroyed after the crew entered IIMC. So, most crewmembers felt a lot of pressure to stay out of the clouds. Although OH-58s were capable of flying in IMC, the aircraft were not rated to do so.

I wouldn't wish going into IIMC on anybody; however, I believe the lessons I learned that night made me a better pilot. Throughout the years, I've flown Army and civilian helicopters, performed many medevac missions and even encountered IIMC again. I've lived to experience other interesting situations, but I've never had a better "learning experience."

Lessons Learned

The following are the most important lessons I learned that night:

It sounds simple, but if you're wearing NVG and you find yourself wondering why you can't see any lights ahead of your aircraft, it could be because there's a cloud between those lights and your aircraft. Trust your instincts and communicate your concerns to your co-pilot. If things are looking lousy and you're uncomfortable, it's possible things are going to get worse, so prepare yourself mentally to transition to instrument flight while you're still flying in visual meteorological conditions.

Many aircrews entering IIMC have done it while wearing NVG. Some decided to return to base and were quickly surprised to find themselves in the clouds. When things look bad and you're trying to get home but the weather is not cooperating, be mentally prepared for entering IIMC. That should help you relax somewhat. The clouds aren't going to hurt your crew or the aircraft, but the ground will.

The weather "guessers" occasionally do not know what the weather is doing 20 miles away, and sometimes localized areas can be quite different than what you've been briefed. Regardless of what you've been briefed, your weather is what's outside your window. Most of the weather guys are good, but, occasionally, you can get a new guy who might be slightly vague. If the weather outside your aircraft isn't reasonably close to the forecast you received, and you're flying lower than you are comfortable with to maintain cloud clearance, it's probably time to turn around. When you do, resist the temptation to fly a "better" route.

If you're fortunate enough to be flying an aircraft that has a third or even fourth crewmember on board, talk with your crew. If you're making someone else uncomfortable, it might be time to stop. Don't allow stress to build in the cockpit, and always leave yourself an out. If the weather continues to get worse, talk with your co-pilot and plan what to do if you enter the clouds. If you're not on the controls when your aircraft enters IIMC, make sure your co-pilot is OK before you do anything else and continue to monitor the instruments until you're back on the ground.

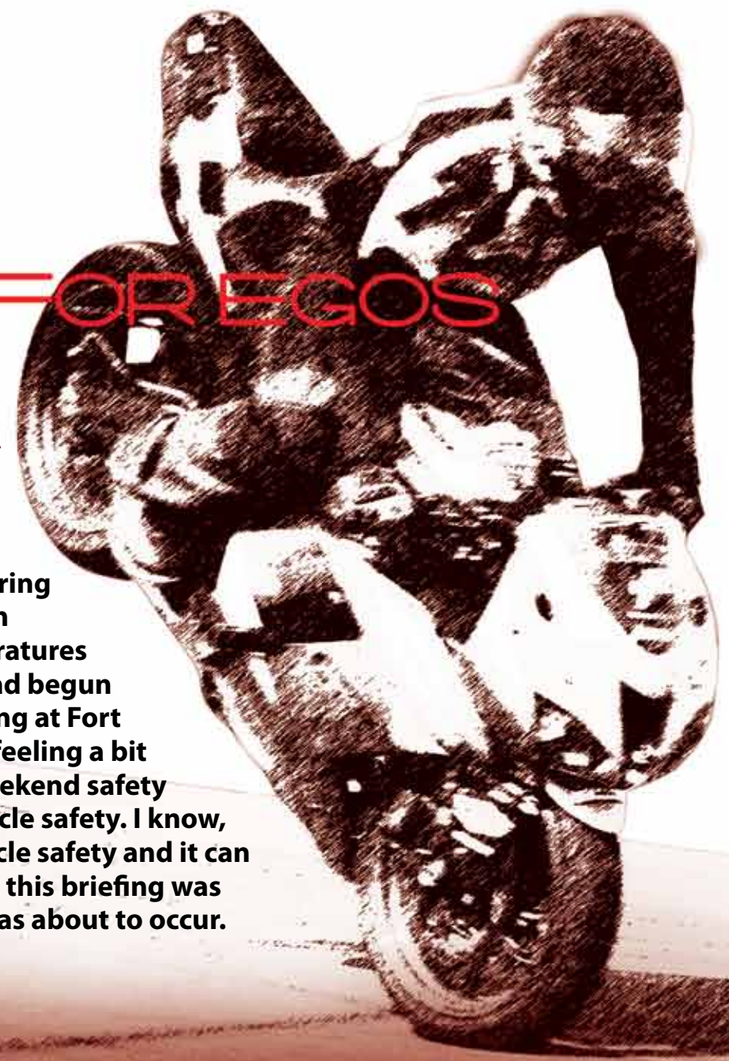
If you've never been in IIMC, expect to encounter significant acute stress and spatial disorientation the first time. If you're on the controls and you experience spatial disorientation, let your co-pilot know immediately. Trust your instruments and continue to fly if you are able to; but if you decide to transfer the controls, continue to back up your co-pilot. He could become just as stressed and disoriented as you were, which could affect his instrument scan. Don't worry too much about the radios until the aircraft is under control; just make sure your aircraft doesn't fall out of the clouds. Additionally, it's a good idea to avoid, whenever possible, having a crew mix of two young pilots both trying to build hours.

Lastly, remember that after entering IIMC, crewmembers have a tendency to get tense and continue to slow down during the climb. Within a couple months of our IIMC encounter, another aircrew from Fort Hood entered IIMC within a few miles of where we did. They leveled their aircraft and started a climb. Unfortunately, they allowed their airspeed to drop to zero at about 3,000 feet AGL. Later that same year and a few miles to the west, another Fort Hood aircrew entered IIMC and started a climb by pulling back on the cyclic and continued holding it back until the aircraft was going backward and descending. Sadly, both cases resulted in Class A accidents. During the climb, continue to monitor your instruments — especially airspeed — and be ready to assist your co-pilot.

If you find yourself IIMC and you make it through the first three minutes of ensuring the essentials are completed (i.e., leveling the aircraft, adjusting power to climb, adjusting and maintaining airspeed to climb, heading away from known obstacles, transitioning to instruments and overcoming spatial disorientation), the odds are you'll live to see your Family later that night and have a new appreciation for life!

NO ROOM FOR EGOS

SHANNAN BOGGS
Radiation Safety Office
White Sands Missile Range, N.M.



My friends and I were enjoying a gorgeous spring day in Alabama. The sun was shining and temperatures were hovering in the upper 70s. I had begun my Career Program-12 safety training at Fort Rucker the previous week and was feeling a bit overwhelmed. We'd just had our weekend safety briefing, which focused on motorcycle safety. I know, everyone has heard about motorcycle safety and it can seem like beating a dead horse, but this briefing was particularly appropriate for what was about to occur.

The class had dispersed for the weekend and groups of people gathered to carpool and run errands. I was in one of those groups, and we went to a local store to pick up some supplies for class. We were discussing some of the things we'd learned in class — comparing it to what we'd seen some motorcycle riders doing.

We were casually crossing the parking lot and were only about 20 feet from our car when we heard a loud noise. It was the sound of a rider gunning his motorcycle's engine as he rode by, showing off while going through the parking lot. The sound was so loud that it got everyone's attention, which is what I suspect was the rider's intention. Had I not turned to see what the noise was, I would have missed what happened next.

Almost as if in slow motion, I watched him gun the throttle and try to do a "stoppie" (make his bike stand on the front wheel). The rear wheel lifted off the pavement, but then he lost control. He made a valiant effort to jump off the bike before it flipped over, but didn't quite make it. He landed on the ground, remaining motionless for a few seconds as if trying to comprehend what had just happened. He then jumped to his feet, quickly realized he'd injured his left leg and hopped away from the bike. The crowd watched and offered help, but he said he was OK as he went around trying to recover pieces of his bike. He was clearly hurt, but, for some reason, wouldn't admit it.

He had another rider with him who stopped his bike and began helping pick up the broken motorcycle pieces. This accident happened in front of a group of Army safety professionals who offered aid, but it was vehemently rejected. When asked what happened, he said his front wheel locked up, causing the crash. He and his buddy were wearing helmets, jeans, sneakers and T-shirts — not exactly the recommended personal protective equipment for riders. Proper footwear would have at least better protected his ankle. Perhaps getting proper riding training and taking to heart the safety practices he should have learned as a Solider-rider would've enabled him to avoid the accident. Or, perhaps, checking his ego at the door before getting on his bike would've been the crucial factor in preventing this accident.

While I will always remember this accident because of its uncanny timing and relevance to our safety briefing, it is the attitude of the rider I remember most. His utter disregard for safety played a key role in this accident's chain of events. His invincible attitude — along with his denying his own role in the accident — were what concerned me most. Even with all the safety briefings, classes and pamphlets available, how do you get through to a rider who won't accept responsibility?

The point is, even if you're confident in your riding skills, you may not always be able to predict what your bike will do. Be responsible, maintain your motorcycle and use safe-riding skills so you can finish your ride on your bike — not your back. Remember, it's up to you to choose to ride safely and responsibly.

> "Be **RESPONSIBLE**, maintain your motorcycle and **USE SAFE-RIDING SKILLS** so you can **FINISH** your ride on your **BIKE** — **NOT YOUR BACK.**"

WANT A "HOT" TIP, SOLDIER?

Here's a tip to boost your "riding" IQ. Go online to https://safety.army.mil/ and click on the "POV & Motorcycle" button. Under "Motorcycle Information" on the left side of the page, select "Surviving Riding Book." You'll get good info on handling difficult or dangerous situations along with maintenance tips and other topics designed to help make riding a pleasure — not a pain.

FYI

Want to sharpen your motorcycle skills in the company of other dedicated, enthusiastic riders? Check out the Army's Motorcycle Mentorship Program at https://safety.army.mil/MMP/.

LICENSE TO GRILL

CHIEF WARRANT OFFICER 3 KELVIN L. MILLER
UAS Platoon, B Company, 4-3 Brigade Special Troops Battalion
Fort Stewart, Ga.

I have always taken safety seriously. However, after 18 years of sitting through the same safety classes over and over again, they tend to become mundane. In fact, it had gotten to the point where I could predict what the presenter was going to say. So why continue to sit through these classes? I'm an old guy, I've been married most of my career and I do not fall into any of the high-risk categories. I've learned, however, that you're never too old or experienced to do something stupid.

It was a four-day weekend — and about two days after the customary holiday safety briefing. I was in my backyard, preparing my grill to barbeque some steaks and chicken. I arranged all of the charcoal into a little pyramid at the bottom of the grill, added lighter fluid and lit it with a lighter. The coals started to burn well and it looked like I had a good fire. I then placed the lighter and lighter fluid a safe distance from the grill and went into the house to check on the meat. When I returned, the coals were turning white and the needle on the grill's temperature sensor was rising. Pretty soon I'd be cooking … or so I thought.

I bounced back and forth between checking the grill and getting the meat ready. After about 20 minutes, though, I noticed the grill was losing heat. I checked the coals and they were not burning like they should. I decided they needed lighter fluid, so I gingerly added more. I thought the coals would immediately ignite the lighter fluid, but they didn't. For some unknown reason, I closed the top of the grill and reached for the lighter.

At first, I could not find the lighter, but then remembered I had placed it away from the grill. After about two minutes, I opened the cover on the grill and attempted to light the coals. But the lighter would not light. After a quick check, I tried again. I was about five feet away from the coals when the lighter ignited. What happened afterward reminded me why I should have paid more attention to those grill safety classes.

I could see the vapor from the evaporated lighter fluid in the air about a second before I started the lighter. Unfortunately, the conscious part of my brain did not send the, "Hey, stupid, don't do that!" signal to the rest of my body in time. The flame from the lighter immediately ignited the vapor, creating a huge fireball. Although the conscious part of my brain had failed me, the subconscious part did not. It was instinct that caused me to close my eyes, turn my head to the right and dive backward away from the fire.

Luckily, the fireball disappeared as fast as it appeared. I laid on the ground in shock over what had just happened. The lower part of my arms, my eyebrows and all of the hair on top of my head turned white. I looked liked a frostbitten old man. I quickly gathered my senses, checked the fire and called my wife outside to help (and give me a lecture).

I was lucky. Besides the temporary loss of hair, I received only mild first-degree burns similar to sunburn. I also learned that just because I've barbequed for more than 25 years (since I was 12) that I'm never too old or experienced to have an accident. Now, I actively participate in holiday safety briefings and fire-prevention classes. I share my story with both older and younger Soldiers.

Lessons Learned

I learned a valuable lesson that day: Never be complacent around flammables. The temperature from the coals, the outside air temperature, the elapsed time and the confined space caused a dangerous buildup of lighter fluid vapor. Once a spark was added, a fireball was almost a definite result.

It is best not to use lighter fluid to start your coals. There are cheap alternatives to lighter fluid that are safer for you and better for the environment. However, if you must use lighter fluid, wear the proper personal protective equipment. Goggles will help protect your eyes, and a long-sleeved, nonflammable shirt can shield your arms. Most importantly, always have respect for fire. Complacency is a sure-fire way to send your barbecue, and possibly more, up in flames.

BOOST YOUR BARBEQUE IQ

Outdoor grilling can be fun, but there is a risk for serious injury and property damage for those who are careless. The following guidelines provided by the Home Safety Council can help you minimize your risk.

- **Stay by the grill and pay close attention the entire time food is cooking.**
- **Designate the grilling area a "No Play Zone," and keep kids and pets well away until grill equipment is completely cool.**
- **Before using, position your grill at least 10 feet away from other objects, including the house and any shrubs or bushes.**
- **Before using a gas grill, check the connection between the propane tank and the fuel line to ensure it is working properly and not leaking.**
- **Never use a match to check for leaks. Instead, rub the hose line with a dishwashing liquid and water solution. If you see any bubbles or detect a leak, immediately turn off the gas and don't attempt to light the grill again until the leak is fixed.**
- **When lighting a charcoal grill, do it right the first time. Choose pre-treated charcoal or carefully follow directions on the charcoal starter fluid can. Once you have lit the charcoal, never add more lighter fluid, as it may cause the can to explode. Use paper or kindling to help a slow-starting grill.**

Visit the U.S. Army Combat Readiness/Safety Center's Safe Summer campaign website at https://safety.army.mil/ for videos, posters and other multimedia products highlighting more than 20 popular off-duty summer topics.

From Truck to Trash

CHIEF WARRANT OFFICER 2 JOSEPH A. ZUMWALT
Delta Company, 2nd Battalion, 10th Aviation Regiment
Fort Drum, N.Y.

I was a young buck sergeant at Fort Irwin, Calif., in 2004 when I purchased my first four-wheel-drive vehicle, a 1986 Chevy Blazer. The Blazer had a 10-inch lift kit and I was running 39-inch mud tires. I thought it was the greatest truck in the world. I felt invincible behind the wheel. After all, I now owned a "monster" truck and could go anywhere.

Three weeks after I bought the Blazer, I decided to take it rock crawling in the hills just outside the installation. I didn't do any planning or coordination — I just hopped into my truck and headed out. I turned onto the first dirt road I found because it looked like a good place to start. At first, it was easy — just small rocks and flat terrain. As I got farther down the road, the rocks got bigger and I encountered some challenging hills.

I was having a great time when I came upon a washed-out creek bed full of large boulders and loose rocks. While the climb was steep and scary, I decided nothing was going to stop me. I hit the gas and made it about two-thirds of the way up before I had to slow down for a big rock. My experience was limited to what I had seen on TV. That told me I'd need to give the engine plenty of gas to get over the rock, so I floored the pedal and hit the rock with a bit of speed.

Upon contact, my truck's front end jumped up and cleared the rock. Unfortunately, when it came down, my truck's driveline slammed down hard onto the rock and, in a split second, my transmission and transfer case exploded into pieces! I shut down the truck immediately as a thousand "what-do-I-do-now?" thoughts went through my head. I was alone in the mountains, unsure how I was going to get out of the mess I was in, but, ultimately, I did.

It's now six years later and I often think of my accident when I see young Soldiers driving lifted jeeps and trucks. I wonder if anybody has taught them the do's and don'ts of off-roading. I wonder if their trucks are up to the challenge and pray they won't get stuck like I did. I did many things wrong that day and had to learn the hard way. So you can save yourself the grief I went through, here's a list of things to consider before you go off-roading.

> "Had something **BAD HAPPENED**, it would have been days — **IF EVER** — before anybody **FOUND ME.**"

Don't

- Go off-roading alone. Always go with a group, preferably accompanied by as many trucks as possible. If you get stuck, you'll have someone to help you.
- Assume your truck is indestructible. What you don't see on TV are the pit crews standing by in case anything breaks.
- Head into the hills without a map or planning where you are going. Exploring is fun, but doing it blindly is stupid.
- Make vehicle modifications unless you are qualified and know you can do them safely.

Do

- As a minimum, carry water, food and a first aid kit along with a sleeping bag and emergency flares.
- Carry tools and spare parts for things that commonly break.
- Carry a global positioning system navigation aid along with maps and a reliable way to communicate. In the hills, cell phones often don't work, so a CB radio can be a great backup.
- Join a local off-roading club and learn from their experiences. Chances are they have done everything you want to do and can help you learn safely.
- Tell somebody where you are going. Show them on a map and let them know when you expect to be back.
- Ensure you have safety equipment such as a fire extinguisher, roll cage and functional seat belts.
- Assume something could go wrong and have a plan in place to work through it.

In my case, everything worked out well in the end. I was lucky and made it out with a bruised ego and an expensive repair bill. However, it could have been much worse. I could have rolled down that hill, gotten lost in the back country or succumbed to a heat-related injury or other hazard I hadn't considered. Worst of all, I went out alone without letting anyone know where I was going. Had something bad happened, it would have been days — if ever — before anybody found me.

Off-roading should be fun — not fatal. If you apply the "do's and don'ts" I listed, you'll be laying a good foundation for safely enjoying your sport.

After three deployments to Iraq, I saw a trend developing in my unit. During the last 30 days of each deployment, we had an accident. What was causing this to happen — complacency, nerves, ego or just plain bad luck?

TREND SITUATIONS

CHIEF WARRANT OFFICER 3 CARLOS L. PATTERSON
Flight Company, 2nd Battalion, 29th Infantry Regiment, 197th Infantry Brigade
Fort Benning, Ga.

My first deployment to Operation Iraqi Freedom (OIF) was a learning experience for all of us, from the commanders down to the aircrews. The risk assessment and approval process didn't exist and we lacked the more sophisticated communications systems that we now have in theater. We were frequently based at remote sites and could not readily contact our command elements. This resulted in crews flying tactical missions, training flights and passenger movements unapproved and, oftentimes, unmonitored.

The workload was low for most of the deployment; however, the stress level was moderate due to the initial poor living conditions and not knowing when the unit would redeploy to home station. When we finally received word that we would be redeploying, everyone was relieved that we had less than 30 days remaining in the desert. However, due to complacency, improper planning and/or command involvement, one of our aircraft had a wire strike while flying over a low ridge during this time. The aircraft was damaged, but no one was injured.

My next unit deployment was in support of OIF III. Our unit had an overall concern because we had only nine months dwell time. Fortunately, many things that had been evident during my first deployment had vastly gotten better this time. Communications had improved throughout the areas of operation (AO) and our unit employed a risk management process that ensured each mission was properly briefed and approved at the appropriate level.

Individual crews from the unit were based at forward operating bases for two to three months at a time. We operated as a team, maintaining crew integrity and flying together during these long times away from our command. I received my pilot-in-command (PC) status three months into the deployment and picked up an additional duty as the company unit movement officer.

On one mission during our last 30 days in country, I had to remain at our base site while my crew flew a mission to a remote site. Another PC was selected to fly the mission. He was very experienced with 1,500 more flight hours than I had. In fact, he was my PC when I was learning the mission and AO. The crew received their mission brief at 0200 and departed for the remote site. While landing, the crew experienced brownout conditions and crashed the aircraft. Fortunately, no one was injured or killed. Now we had two incidents where an aircraft accident occurred during the last 30 days of our deployment.

My third deployment was in support of OIF 07-09. Things had drastically improved over time and we had a great risk assessment and approval process. We received weekly training through pilot's call, and the unit was able to conduct training flights on a routine basis. This time our deployment was for 15 months, which created concerns because of the length of the tour. We were worried about people getting burned out and becoming unsafe. Ironically, the first 14 months went exceptionally well. The unit conducted weekly pilot's call, S-2 briefs and safety updates to make sure each crewmember stayed in the game. We conducted all missions and

training flights in a safe and professional manner.

During the safety portion of our training, I stood up and explained to the unit how the last 30 days of our previous two deployments had ended with a helicopter incident. The company safety officer also reinforced my announcement, stating that complacency and overconfidence often took the place of caution and good judgment.

We were then in that 30-day window of redeploying and I will never forget awakening early in the morning to a call notifying me to recover a crew that had a bad landing. Luckily, no one was seriously injured, but, once again, the accident gremlins were at work and we experienced an incident during our final 30 days in country.

I tried to figure out the root cause of these incidents. The unit had very disciplined aviators who received weekly training while in combat on all three deployments. They all performed above the standard. So what happened during those last 30 days? Did complacency come into play? Did the pilots become overconfident? Was there a chronic fatigue factor that creeps up on our pilots?

Any of the above could influence how our pilots act and let our minds wander. Yes, you are flying a multimillion-dollar aircraft and the enemy could be anywhere; but your mind is already on block leave.

My unit has outstanding pilots. They have a good crew mix, receive approval at the appropriate level, conduct risk assessments and crew briefs, and know their aircraft and its operator's manual. They perform brownout landings without fear. They already know they can land the aircraft because they have performed the maneuver numerous times. So, why aren't their minds in the game?

There has to be a way to keep people focused on the mission at hand. We all have conversations on those long flights. However, we never seem to talk enough about the mission, the risk, the enemy or what if this or that would happen. We have become complacent — perhaps overconfident. Chronic fatigue may also be a factor. We can't let our minds be "gone fishing" while other lives are at stake. It seems the seriousness of our jobs is noticed only when something bad happens.

I figured it was a trend after the second deployment. That was the main reason why I stood up in the safety meeting and said something to my fellow aircrews about staying focused on the mission.

Despite my concerns, we still had another incident. I can honestly say I tried, but what else could we have done? We can teach a class on remaining focused, but we don't really have a compiled list of incidents, nor do we know how to keep someone focused. There currently isn't a risk assessment for the last 30 days of a deployment. However, you are automatically a medium or high risk when you first get into theater for the first 30 days or so.

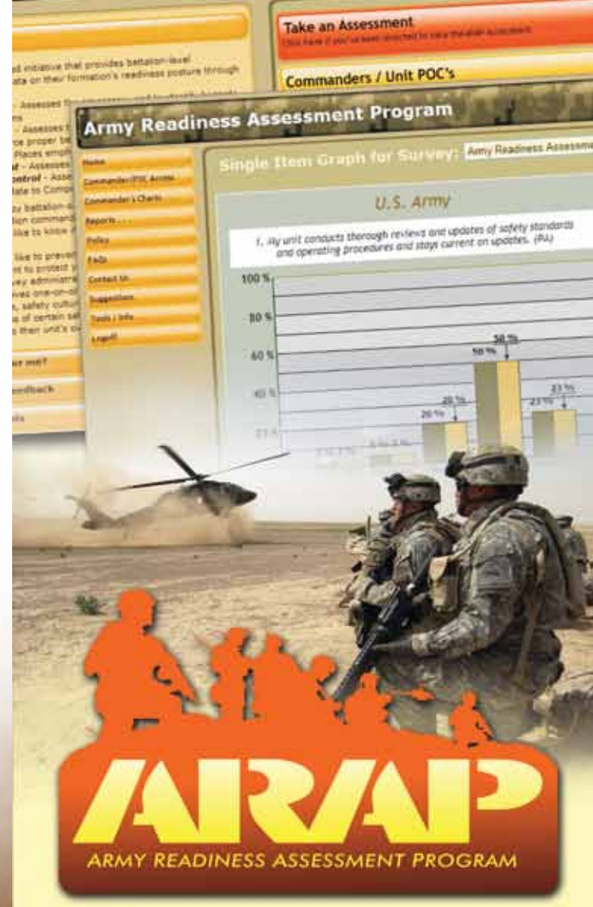
Lessons Learned

Complacency and overconfidence are major problems throughout the Army. Here are some suggestions that might be beneficial.

- Strong leadership at every level is required to reinforce the hazards of complacency and overconfidence.
- Good communication and a healthy flow of information foster teamwork, both up and down the chain. Before all missions, discuss the "what-if's" or "what-could-go-wrong" scenarios.
- Repeated success can lead to complacency; however, complacency can lead to failure. Set new goals for every mission and practice those beforehand.
- Commanders need to ensure mission briefers take a close look at crew mix. Aviators must fight the tendency to let their guard down when flying with experienced crewmembers. There are elements in all missions out of our control. Ensure the crews are set up for success.
- Individuals at all levels have to be acutely aware of the fatigue issue and look for the signs among those in their charge. Fatigue doesn't only put you in a life-threatening situation, but also those around you. Make sure all crewmembers are well rested and made aware of the hazards of acute and chronic fatigue and how those factors can affect a crewmember's judgment and thought process. And remember, while the amount of sleep is important, the quality of sleep is as equally vital.

You are in the fight every minute of every day until you are home. Remain focused on the mission or else you may never make it home!

"The company safety officer also **REINFORCED** my announcement, stating that **COMPLACENCY** and **OVERCONFIDENCE** often took the place of **CAUTION AND GOOD JUDGMENT.**"



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The bicycle has come a long way since its early days. Today's frames are stronger, yet lighter, and the wheels and tires are more durable. What hasn't changed is the need for cyclists to obey the rules of the road.

Rules of the Road

GEORGE WYATT
Installation Safety Office
Fort Campbell, Ky.

Despite what some may think, there is no special exemption to the law just because you're on a bicycle. In fact, many accidents occur because a cyclist failed to stop at a stop sign, did not signal at an intersection or ran through a red traffic light. Just as cyclists expect motorists to abide by traffic laws, they, too, expect you to follow them.

Where you ride in the lane is also important. Riding just right of the center of the lane gives you a better profile for visibility to other vehicle operators. It also keeps you away from parked vehicles on city streets, which can be an extreme hazard if someone opens a door in your path. Riding just right of the center of the lane also allows you to better maneuver to avoid pot holes and other imperfections in the road and will keep you away from ditches, curbs and parked cars. Assertively maintaining your position just right of center lane will force drivers to pass properly while giving you a margin of safety from those who don't.

Riding your bicycle against traffic may give you a sense of security in that you can see oncoming vehicles. However, motorists don't expect you to be there, and it may be difficult to react to you, especially if you're on a two-lane road and the motorist must deal with you plus oncoming vehicle traffic. When you ride on the wrong side of the road, you approach intersections at angles and positions other motorists are not accustomed to seeing, which means they may not act or react as you anticipate. In some states, it's also illegal to ride against traffic, so check the bicycling laws in your area.

DID YOU KNOW?

According to Army Regulation 385-10, when bicycling on Department of Defense installation roadways during hours of darkness or reduced visibility, bicycles will be equipped with operable head and taillights, and the bicyclist will wear a reflective upper outer garment.

> **"UNDERSTANDING** the fundamentals of driving will help **KEEP** children **SAFER** on their bikes and might even **MAKE** them **BETTER DRIVERS** when **THEY'RE OLDER."**

Riding on sidewalks may be legal in your area; however, it is not considered a "best practice" method of bike riding. Riding on the sidewalk introduces a new hazard — the pedestrian. In most cases, pedestrians don't expect to see a cyclist riding on a sidewalk and may have difficulty reacting. And like riding against the flow of traffic, when you intercept a road intersection from a sidewalk, you do so at angles and positions that motorists are not used to seeing. If it is safe to ride on sidewalks because the density of pedestrian traffic is low, at least consider stopping at each road intersection to make sure it is clear before proceeding. If vehicle traffic is heavy, think about walking your bike through the crosswalk.

Listening to music on your iPod is also a bad idea when you're on a bike, and it's prohibited on Army installations when riding on or adjacent to roadways. Your sense of hearing is important anytime you're riding. Even on a parallel bike route, if you don't see a bad situation developing, you might be able to hear it if you're alert and if your hearing is not obscured by portable listening devices. Remember that intersections, side street accesses and driveways are not normally protected on parallel bike routes, so you must remain alert and be able to see *and* hear your environment.

Younger Riders

Motorists should always anticipate children on bicycles near schools and in residential areas. The speed limits are usually slow in these areas to reduce the risk of vehicle and pedestrian/bicyclist conflicts. Children can be unpredictable when riding, so it's the driver's responsibility to remain alert and avoid accidents.

Parents can also help prevent accidents by teaching their children the rules of the road as soon as they start riding bikes. The state driver's manual is a good place to start. Understanding the fundamentals of driving will help keep children safer on their bikes and might even make them better drivers when they're older. Be proactive in answering the child's questions when they don't understand the technical jargon of the driver's manual. As their bike-riding skills develop, so should their knowledge of the rules of the road.

Off-road Biking

Off-road biking is a popular sport and, in most cases, eliminates the conflict between riders and motor vehicles. But it isn't free of hazards. It is important for the novice off-roader to take it slow and easy on off-road trails and bike routes until they've gained some experience at negotiating rough terrain. Experienced off-roaders may have a tendency to occasionally push beyond their own or their bike's limits and take a spill as a result. Avoid overdoing it in areas where even a small mistake could send you and your bike sailing into a ditch, ravine, tree or boulder or even off a cliff.

Pedestrians also enjoy walking or jogging on off-road trails. Be cautious and courteous of others along the route to avoid mishaps. Also, be aware that you're probably in wild animal, reptile and insect country. They may not have a high tolerance for sharing their turf with you. Respect all wildlife and give them a wide berth.

Protective Equipment

On military installations, all bike riders, regardless of age, are required to wear a Consumer Product Safety Commission-approved bike helmet. Some installations also require riders to wear a reflective belt diagonally across the body. Although state and local laws regarding helmets differ, it makes good sense to always wear one. A helmet can mean the difference between surviving and dying in an accident. Ensure your helmet meets or exceeds the impact standards of the American National Standards Institute or Snell Memorial Foundation.

As a cyclist, you should also go out of your way to be visible. Bright clothing (reflective at night) says a lot about your seriousness in sharing the road safely. Your bright or reflective shirt should be long sleeved so others can see your hand signals.

If you bicycle at night, a headlight is another important safety feature and, in some states, a requirement. Self-generating light systems are not the best option. While they shine bright when you are riding with some speed, they dim when riding slowly and go out when you stop. Consider purchasing a battery-powered light system at your local bike shop, preferably one with a tail light.

Bicycle riding is an activity that's fun for the whole Family. When done correctly, it's also safe. Make sure you follow the rules of the road whenever taking your Schwinn for a spin.

FYI

For more information about bicycle helmets and state laws, visit the Bicycle Helmet Safety Institute website at http://www.helmets.org/index.htm.

Nuts and Bolts:

Now You See 'Em ...

SGT. 1ST CLASS JOHN WINGFIELD
D Company, 8th Battalion, 229th Aviation Regiment
U.S. Army Reserve
Fort Knox, Ky.

The duty day was finally over as I exited the gate at Fort Knox, Ky., vaguely paying attention to a sign warning drivers to watch out for motorcycles on the roads. As I drove in the misty-gray weather, I thought anybody riding a motorcycle in these conditions had to be slightly nuts.

The trip was largely uneventful as the mist developed into full-fledged rain showers about halfway home. As I drove, I glanced ahead at the taillights of a tractor-trailer and noticed something didn't seem quite right. As I got closer, a dark shape took form. In less than a heartbeat, I realized I was approaching a motorcyclist clothed in black from head to toe. The only thing that caused me to notice him was his motorcycle's barely visible taillight.

Fortunately, I had time to slow down and give him some space. If it hadn't been for his taillight, I wouldn't have seen him because he and the rest of his bike blended into the rear of the semi's trailer. This incident drove home the point about always making yourself visible, especially in less-than-optimal driving conditions. It also showed how important it is to be vigilant when driving in bad weather, and to look even farther ahead for signs of trouble.

Until this incident occurred, I never really paid attention to the issue of riders wearing reflective material. Sure, I always wore at least a reflective waist belt when riding on post, but I almost never wore it when riding off post for fear of looking like a geek in all my leather gear.

Well, that's changed since this incident. I now have a strip of reflective material sewn across the front and back tops of my vests and a strip of reflective tape across the rear of my helmet. I might look like a geek, but when visibility is less than perfect, I'll stand a better chance of being seen by drivers who may not be paying full attention to the road and others around them.

AUTOMOTIVE ALERTS

NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
www.nhtsa.gov/

With all the attention being directed toward Toyota, it is important to note that other manufacturers are also recalling vehicles. A thorough check of the current National Highway Traffic Safety Administration (NHTSA) recalls shows some problems owners need to be aware of.

The most notable example involves the air bag inflators in the 2001-2002 Honda Accord; 2002 Honda CRV and Odyssey; 2002-2003 Acura 3.2 TL; and 2003 Honda Pilot and Civic. These inflators can rupture during air bag deployment and send metal fragments through the air bag cushion material, potentially injuring or killing occupants. If you have one of these vehicles, contact Honda Automobile Customer Service at 1-800-999-1009.

Other vehicles that made it onto the recall list include the 2007-2008 Honda Fit for water intrusion affecting the master power window switch; 2010 Toyota Camry for potential wear-related perforation of the left-rear brake tube; 2010 Toyota Tacoma for propeller shaft cracks; 2004 Saab 9-3 sedan for malfunctioning front seat belt retractors; 2010 Hyundai Tucson for accidental air bag deployment; and the 2010 Mitsubishi Galant for potential automotive transmission fluid leaks.

Do you own one of the vehicles on this list? If so, here are some important contact numbers for you: Toyota, 1-800-331-4331; Saab, 1-800-620-7668 or contact online at www.gmownercenter.com; Hyundai, 1-800-633-5151; and Mitsubishi, 1-800-222-0037.

Didn't see your car on this list but want to visit NHTSA's online site to check your particular make and model? Go online to http://www-odi.nhtsa.dot.gov/ and check under "Defects and Recalls." Remember, if you are not the vehicle's original owner, you may not have received recall notices from the manufacturer.

Accidents occurred between March 1-31, 2010

AVIATION

OH-58D(I)

CLASS C

- The aircraft incurred an engine power turbine speed of 120 percent during run-up for flight.

UH-1H

CLASS C

- The flight crew encountered loss of tail rotor effectiveness during a pinnacle landing. The aircraft experienced an overtorque.

UH-60L

CLASS A

- The flight crew encountered brownout during takeoff from the forward operating base and crashed.

C-12R1

CLASS A

- The aircraft experienced a hard landing during which the right landing gear separated. The aircraft sustained extensive damage to the fuselage, props and wings.

GROUND

ACV

CLASS A

- A Soldier was killed when his Stryker overturned during a convoy operation, pinning him underneath the vehicle. The driver and another Soldier were treated at a medical center. The driver's leg was amputated as a result of his injuries, and the passenger suffered pelvic injuries.
- Two Soldiers were killed when their Mine Resistant Ambush Protected (MRAP) vehicle rolled over during a six-vehicle combat logistics patrol convoy. The driver of the MRAP was attempting to pass a civilian dump truck when she lost control, rolling it multiple times. The gunner and driver were pronounced dead at a medical center.
- A Soldier was killed when he was ejected from an MRAP that overturned. At the time of the accident, the driver of the vehicle was negotiating a steep, winding road and lost control, causing the vehicle to roll multiple times. The vehicle commander was evacuated to a medical center, where he was pronounced dead.

Explosive/Fire

CLASS A

- A Soldier died from smoke inhalation following a fire at his off-post residence.

Personnel Injury

CLASS A

- A Soldier suffered fatal injuries during a static-line airborne operation when his parachute drifted and became tangled in power lines. He was evacuated to a medical facility, where he later died.

ARMY AVIATION LOSSES

Fiscal 2010

as of June 6, 2010

Class A/Fatalities	
ATTACK	1/1
RECON	2/4
UTILITY	5/5
CARGO	1/0
TRAINING	0/0
FIXED-WING	2/0
UAS	3/0
TOTAL	14/10

ARMY GROUND LOSSES

Fiscal 2010

as of June 6, 2010

Class A/Fatalities	
AMV	10/5
ACV	7/6
PERSONNEL INJURY includes weapons-handling accidents	15/16
FIRE/ EXPLOSIVE	2/1
PROPERTY DAMAGE	0/0
TOTAL	34/28

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DRIVING

POV

CLASS A

- Two Soldiers suffered fatal injuries when their vehicle collided with a trailer towed by a pickup truck, turned broadside and was then struck by an oncoming tractor-trailer. At the time of the accident, the roads were snow-packed and icy.
- A Soldier was driving home from drill when he crossed into the oncoming lane and collided head-on with an approaching van. The Soldier, who was not wearing his seat belt, was ejected and suffered fatal injuries. Three people in the van were also killed in the accident.

POM

CLASS A

- A Soldier was riding his motorcycle when he was cut off by a vehicle crossing four lanes of traffic. The Soldier, who was wearing his helmet and personal protective equipment, collided with the rear of the vehicle and was killed.

Pedestrian

CLASS A

- A Soldier was running alongside a state route when a car went off the road and struck him from behind, causing fatal injuries. The Soldier, who was wearing a reflective belt, was running in the same direction as traffic.

POV DRIVING LOSSES Fiscal 2010

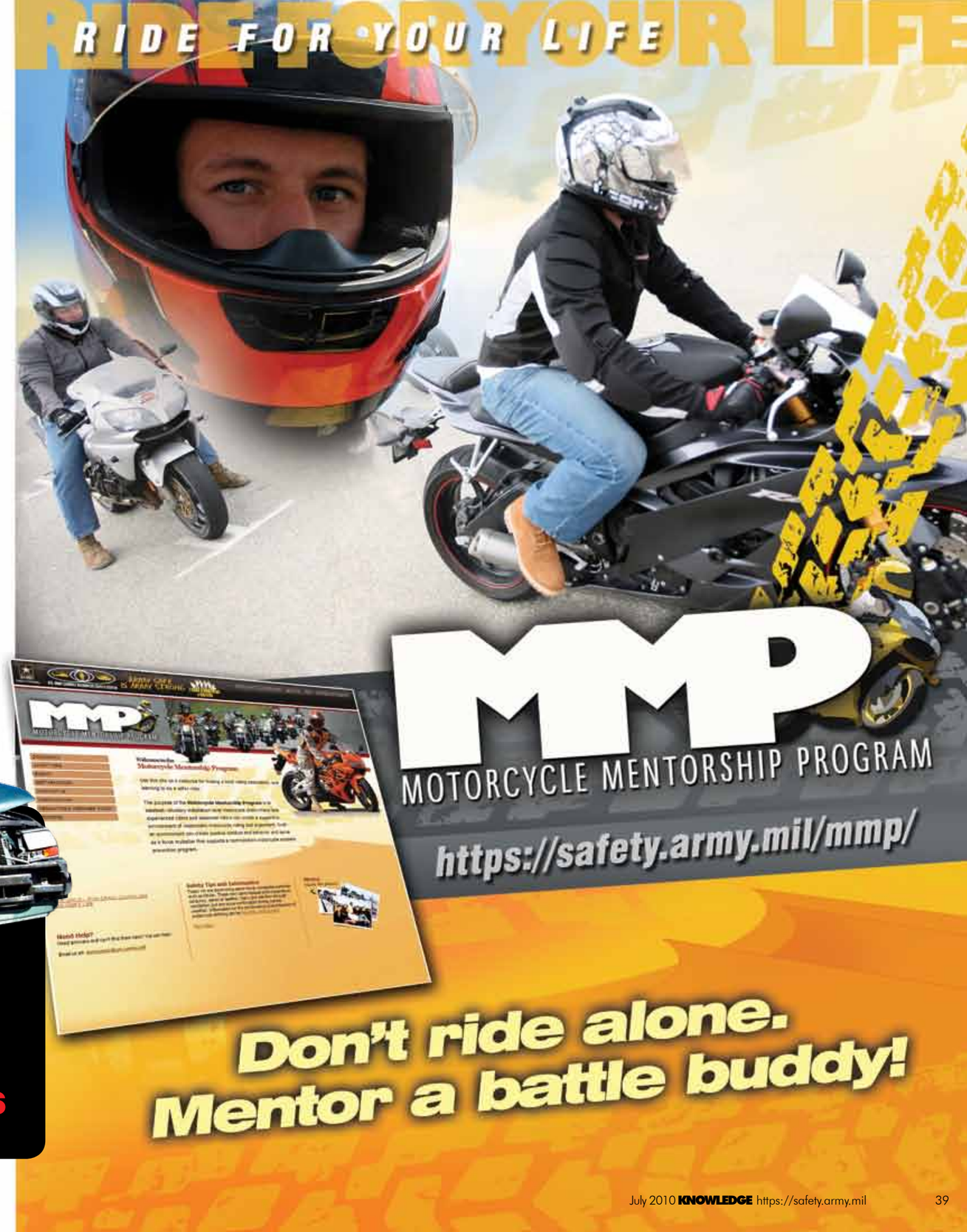
as of June 6, 2010

	Class A/Fatalities
CAR	28/29
SUV/JEEP	6/7
TRUCK	4/4
MOTORCYCLE	19/19
PEDESTRIAN	8/9
OTHER*	2/2

*Includes vans and ATVs

70 TOTAL DEATHS

Fiscal 2009: 74 3 year average: 76



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ARMY SAFE IS ARMY STRONG

A BAND OF BROTHERS & SISTERS

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VOL 4 AUGUST 2010

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KNOWLEDGE

OFFICIAL SAFETY MAGAZINE OF THE U.S. ARMY

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FROM THE DASAF

"LOOK out for THE subtle HAZARDS, and REMEMBER that no RISK is ever too SMALL to merit CONSIDERATION."

KEEPING SAFETY IN SIGHT

The end of summer is drawing near, and many of our Soldiers and Families will be busy these next few weeks with last-minute vacation plans, back-to-school activities or, for some, preparations for another rotation to theater. During these hectic days, every minute counts — but we can't let our guard down when it comes to safety.

It's a well-known fact that off-duty vehicle crashes claim more of our Soldiers every year than any other accident cause, and this year's trend is no exception. Over the four-day Memorial Day weekend, our Army lost five Soldiers to off-duty vehicle accidents: three on motorcycles, one in a pickup truck and one on an all-terrain vehicle. Unfortunately, our other trend, indiscipline, was a primary factor in these accidents as well, specifically regarding speed and failure to wear seat belts or personal protective equipment.

As important as POV accident reduction is, however, we can't lose sight of the often subtle hazards that inevitably claim a few Soldiers annually. It's hard to believe that as we near the end of fiscal 2010, more Soldiers have died in sports accidents than in all of 2009. We've also seen an increase in fatal pedestrian accidents this year, the last occurring when a Soldier on the way to sick call stepped in front of a vehicle in a parking lot. And among other accidents, we've lost five Soldiers to drowning, one in a fall while hiking and two to privately owned weapons discharges.

Such uncommon accidents are happening in theater too. Just recently, we experienced a tragic accident when a Soldier who was installing flooring in a dining facility suffered fatal burns after the glue he was working with caught fire. Additionally, three Soldiers have died from crush injuries this fiscal year, with two pinned between tactical vehicles and the third killed when a rolling gate malfunctioned and fell on top of him.

In our Army, a loss is a loss, no matter how it happens. While we will continue to work hard through Leader and Family engagement to permanently reduce POV accidents, we must consider just as seriously the other hazards that can take our Soldiers out of the fight. There's no such thing as a mundane mission or just another day off — safety is a full-time responsibility, and it's our job to protect the Soldiers entrusted to our care.

There are several ways we can remain vigilant in our fight against all accidents, even those that seem the most unlikely. First, always listen to what your Soldiers are saying. The most valuable eyes and ears you have are the Soldiers who work side by side every day and the NCOs who lead them. If someone is taking unnecessary risks, it's almost certain somebody else knows. Never underestimate the creativity of your Soldiers either; they just might have a solution for your most frustrating safety problems. Take an interest in everything your Soldiers are doing, and foster a culture where communication flows freely and composite risk management is the first block checked before a team heads out on a mission or the unit leaves for the weekend.

Another vital resource for Leaders is the Army Readiness Assessment Program (ARAP). No matter how hard they try, commanders are often unaware of every hazard their Soldiers face. Through ARAP's anonymous and confidential surveys and follow-up briefings, commanders can get a true sense of their Soldiers' concerns and their unit's safety climate. The program continues to receive overwhelmingly positive feedback from commanders and has become a highly trusted and valuable tool for our Army's Leaders.

Finally, I encourage you to take advantage of the expertise of the safety professionals within your command. All our Army's safety personnel — Civilians, aviation safety officers and additional duty safety officers — have been trained to help you reduce risk and fight accidents. They also have access to our most up-to-date safety information, including preliminary loss reports and daily accident statistics that break down current fatality data by category and duty status. Their knowledge is power for both you and your Soldiers.

Oftentimes in safety, the devil truly is in the details. Look out for the subtle hazards, and remember that no risk is ever too small to merit consideration. Thank you for what you do every day for our Soldiers, Families and Civilians!

Army Safe is Army Strong!

WILLIAM T. WOLF
Brigadier General, USA
Director of Army Safety

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Mission statement: The United States Army Combat Readiness/Safety Center (USACR/Safety Center) supports our Army by collecting, analyzing and communicating 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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Knowledge provides a forum for Soldiers, Leaders and safety professionals to share best practices and lessons learned and maintain safety awareness. The views expressed in these articles are those of the author and do not necessarily reflect the official policy or position of the U.S. Army, Department of Defense or the U.S. Government. Contents are specifically for accident prevention purposes only. Photos and artwork are representative and do not necessarily show the people or equipment discussed. Reference to commercial products does not imply Army endorsement. Unless otherwise stated, material in this magazine may be reprinted without permission; please credit the magazine and author.

"The **MOST IMPORTANT** aspect of **SAFETY** is to ensure units **ADOPT A CULTURE** in which they do not take **UNNECESSARY RISKS.**"

PREPARE AND PREVENT

RETIRED COMMAND SGT. MAJ. DAVID R. HENDERSON
82nd Airborne Division
Fort Bragg, N.C.

All Leaders are concerned with the well-being of the personnel under their command. This is especially true in a combat environment. The loss of just one Soldier in combat due to a preventable accident is devastating. I say preventable because that is exactly what most accidents are — preventable. The most important aspect of safety is to ensure units adopt a culture in which they do not take unnecessary risks. While it is important in garrison operations, it is imperative this "safety culture" extends to the combat theater.

Many of the safety concerns that exist in both Iraq and Afghanistan are similar. This article focuses on some of the safety issues that are appropriate in the Iraqi theater and, in my opinion, important for operations in Afghanistan.

Vehicle Safety

Driving too fast for conditions and failing to wear restraining devices continues to play a major role in accidents and serious injuries. Improper stowage of equipment is also surfacing as a concern. The following are some of the more prominent safety issues.

- **Mine Resistant Ambush Protected (MRAP) vehicles.** The MRAP is the primary vehicle used in Afghanistan to counter the improvised explosive device threat. The terrain in the Afghan theater is extremely mountainous with steep, unimproved roads. Consequently, numerous rollovers occur due to roads giving way and drivers going too fast for conditions. Soldiers deploying to Afghanistan need as much training as possible on safe driving to fit the conditions. All Soldiers operating in the MRAP

family of vehicles must rehearse rollover drills in the MRAP Egress Trainer. Soldiers also must rehearse, not just discuss, rollover drills before moving on all convoys. This will reinforce muscle memory, which will aid in the instantaneous execution of proper rollover procedures.

- **MRAP recovery.** For the reasons previously mentioned about the terrain, recovery of a disabled MRAP is a challenge that presents its own safety concerns. One of the primary means for recovery is the M984 Heavy Expanded Mobility Tactical Truck and, in some cases, the Interim Stryker Recovery System. Some recovery situations are very complex because of the terrain at and around the recovery location. Due to the terrain and the size of these vehicles, recovery often is not possible or extremely dangerous. The M1089 wrecker is not an option, as the weight of the MRAP far exceeds the capability of the wrecker. Failure to use the proper recovery vehicle may have catastrophic effects. Leaders and Soldiers involved in planning and executing MRAP recovery need to review Chapters 1 through 5 of Field Manual 4-30.31, Recovery and Battle Damage Assessment and Repair. There is currently an operational needs statement to develop an MRAP recovery vehicle.
- **Driver's training.** One of the causal factors that surfaced during vehicle accident investigations was untrained drivers. This usually results from units not having enough trained personnel to account for attrition due to injury or leave. With this in mind, units should ensure there are numerous backup personnel trained on the vehicles they will operate.
- **Other injuries.** We have seen an increase in injuries during operations pertaining to up-armored vehicles. These injuries include pinched fingers, legs, arms and hands. Additionally, there are leg and ankle injuries due to Soldiers jumping from vehicles instead of climbing down.

Base Camp Safety

Many of the forward operating bases and combat outposts throughout Afghanistan are in extremely austere locations and environments. Therefore, there are concerns in the areas of fire and electrical safety and preventive medicine. Units should consider training certain personnel in sanitation, plumbing, electrical and fire safety. Many of the contract agencies do not travel to these locations on a regular basis. Enforcement of health and hygiene standards focused at the platoon level is critical in the development of standards and good practices for the elements in outlying locations.

Negligent Discharges

There is an ongoing problem with negligent discharges. In the past, the majority of negligent discharges involved the M9 pistol and M4/M16 rifle. The major cause of these incidents is not following the proper clearing procedures (e.g., not dropping the magazine). There has been an increasing number of negligent discharges involving belt-fed weapons. The majority of these incidents involved untrained personnel. Units must ensure personnel practice proper clearing procedures using the standards referenced in the Weapons Handling Procedures pamphlet found on the U.S. Army Combat Readiness/Safety Center website at https://safety.army.mil/.

Aviation Safety

Afghanistan presents its own challenges to aviation operations. The high altitude and high temperatures, coupled with the increased weight of combat loads, increase risks during aviation operations. We recommend units attend the High-altitude Army Aviation Training Site in Colorado to prepare for aviation operations in Afghanistan. The mountainous, rocky terrain in Afghanistan makes landings hazardous. Units must take extreme care when selecting helicopter landing zones, and pilots and crew chiefs must use caution during all landings.

Conclusion

Soldier safety is vital to the successful completion of a unit's mission. As we all know, this takes buy-in and support for the command at the highest level. More importantly, safe operations depend on the first-line supervisor enforcing standards. This buy-in and enforcement of standards is essential to safe operations in Afghanistan.

Editor's note: The author served two tours in Iraq and is currently on his third deployment to Afghanistan, where he is the Combined Joint Task Force-82 safety director.

TO LIVE ANOTHER DAY

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

Sgt. Joseph P. Magee enjoyed watching the green trees and fields slip by on either side of his 2002 Oldsmobile Alero as he cruised down Interstate Highway 20. He'd left Fort Bragg, N.C., earlier that day on a long weekend pass to visit his brother at their cousin's place in Atlanta. A road sign alerted him that Augusta, Ga., was only about 20 miles away. He was a good two-thirds of the way through his trip.

The drive had gone beautifully up to that point. It was the Friday going into the Memorial Day weekend and the skies were clear and blue. He still had a couple hours or so to go, but he'd make Atlanta early enough to enjoy some time out that evening with his brother and cousin — or would he?

Sarah McNair (not her real name) was also headed westbound on I-20 that afternoon. As she drove down the road, she wasn't interested in the scenery. At the moment, she was busy trying to put in one of her contact lenses as she sped down the road at 70 mph in her SUV. Focused on the contact on her finger, she wasn't paying attention to the scenery or Magee in the lane to her left.

Out of the corner of his eye, Magee noticed the SUV was starting to drift toward his lane. At first, he wasn't worried; but when she kept coming, he glanced at the driver.

"I saw her putting her finger to her eye and then, three seconds later, I was getting pushed into the median, where there were steel cables running down the middle," he said. "I didn't want to hit them, so I tried to brake, but I couldn't get traction on the grass."

The Alero fishtailed as it went into the median. Magee fought for control and finally got the car headed back onto the road. He was going to pull back into his lane, but he wasn't out of trouble yet. McNair had lost control of her SUV and cut him off, colliding with his car and sending it spinning across the westbound lanes. Gray smoke billowed from the wheel wells as the Alero's tires skidded across the highway. As he spun more than 360 degrees, Magee caught a glimpse of the silver SUV in time to see it turn sideways in the road. It overturned several times and then went onto the shoulder in a cloud of dust.

Magee was in big trouble. The Alero was still going some 65 mph as it careened out of control off the highway. As it ran onto the shoulder, the speeding car went down an incline and smashed straight into a tree. For Magee, the impact was horrendous.

"I hit so hard it (the impact) lifted me off my seat — only my seat belt held me back," he said. "The air bag didn't deploy, so I hit my head on the steering wheel."

Magee remained conscious, turned off his ignition and reached for his cell phone. As he did, smoke began to fill the car, burning his eyes. He pushed on his driver-side door.

"I was so scared the door wouldn't open, I was going to smash the window real fast because there were sparks and flames coming out of the hood on the right side," he said.

Magee forced the door open, rolled out onto the ground and ended up about five or six feet away from the vehicle. He'd barely gotten out of the car when he heard the first of what would be multiple explosions. He saw flames shoot from beneath the dash, filling the driver's area he'd occupied only moments before.

"If I had been sitting in the car, I would have been done," he said.

As the fire grew, Magee moved away from the car, working his way back along the shoulder to see if McNair needed help. By then, other motorists had stopped and a trucker was checking on her.

When Magee got there, he saw the SUV was on its driver side. McNair was lying down but struggling to get up. Fearing she might have internal injuries, the truck driver cautioned her to remain still. Before he could do much to help, Magee's head started spinning and he sat down.

"I was so disoriented I didn't really know what was going on," he said. "I couldn't believe what just happened."

As he sat on the ground, he heard repeated explosions from his car. By then, firefighters were on scene, trying to douse the flames from his car, which had also lit the tree on fire. The firefighters asked him several times if anyone else had been in the car.

> "As he **SAT** on the ground, he **HEARD REPEATED EXPLOSIONS** from his **CAR.**"

Emergency medical technicians (EMTs) arrived at the accident site. Magee had injured his back and neck, so the EMTs placed a neck brace on him and laid him on a stretcher. They then secured his head with straps to keep it from moving as they drove him to a hospital in an ambulance. By the time they got there, Magee's initial adrenaline rush had worn off and he was in considerable pain.

"They took me to the ER and did the usual tests," he said. "They palpated my chest and made sure nothing was punctured. Later, they did a CT scan. They said I had bruises and cuts, but I was all right and lucky to have survived. They then released me. My parents drove all the way from Raleigh, N.C., to Augusta and got me."

Since the accident, Magee has been treated several times for back pain — something that will always be a part of his life. However, he survived what otherwise would have been a fatal accident and has returned to duty with his unit. He plans to make the Army a career, with a goal of attending officer candidate school and earning a commission. That wouldn't be happening had he not been belted into his car.

"I am thankful to God every day that I survived — that I got out of that car just before it blew up," he said. "Just 10 more seconds and you wouldn't be talking to me today."

Without his seat belt, chances are he would have either been killed on impact or unable to escape his car and died in the flames. Growing up in New Orleans, he'd seen a lot of accidents, including ones where unbelted drivers were thrown through windshields. He learned from their mistakes and understands why it makes sense to protect himself. And it's not just for his benefit, but also those who care about him.

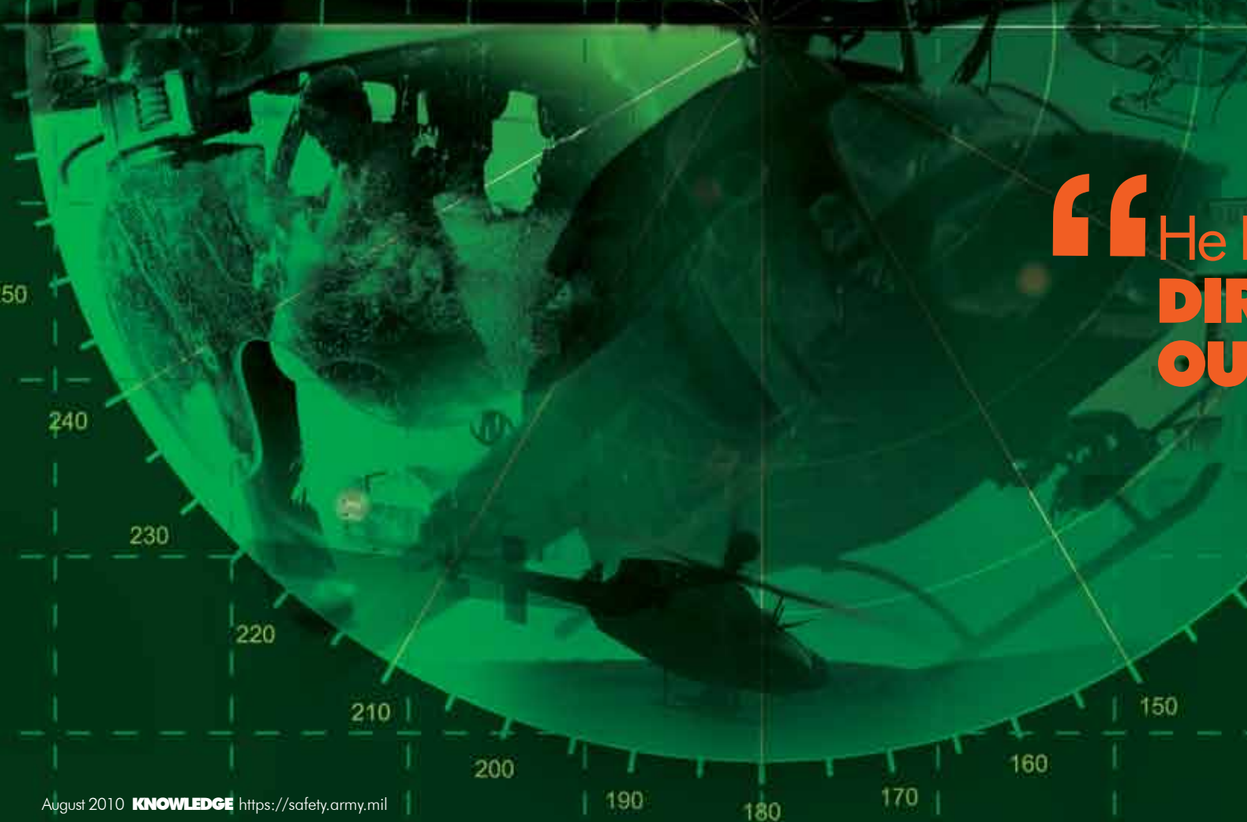
"Just taking three seconds to click on your seat belt can keep your parents from the pain of having to attend your funeral," he said. "I couldn't bear to put my parents through the anguish of thinking, 'If he'd just worn his seat belt, he'd still be with us today.'"

Editor's note: Carl D. Trotter, safety and occupational health manager for the 95th Civil Affairs Brigade, provided valuable support with the production of this article.

"What the Hell was That?"

CHIEF WARRANT OFFICER 2 EVAN STRONG
Headquarters and Headquarters Troop
1st Squadron, 6th Cavalry Regiment
Fort Riley, Kan.

Every Soldier knows complacency kills. Every aviator knows cutting corners can kill too. The Army places great value on confidence in one's abilities and mission. Taking a few extra moments to remove unnecessary risks can be the difference between life and death. On a routine night mission in Kirkuk, Iraq, two scout weapons teams (SWT) came close to learning a hard lesson because an overconfident pilot in command was anxious to get the mission done.



Forward Operating Base (FOB) Warrior is a busy hub of coalition activity on the southwest side of Kirkuk City. All types of aircraft use this airspace daily, and the U.S. Air Force air traffic controllers (ATC) do an excellent job managing that resource. The aircraft logging the most time in that airspace were the resident units that launched and recovered from FOB Warrior at all hours of the day and night.

On this particular night, the units based at FOB Warrior consisted of a squadron of OH-58D Kiowa Warriors (KW), augmented with UH-60 Black Hawks for assault and medical evacuation missions. A Shadow unmanned aircraft system (UAS) company was also a major player in the area of responsibility and was attached to the squadron.

When launching and recovering, the SWTs normally used the tower for clearance and airspace advisories. Oftentimes, the crews were allowed to operate semi-autonomously due to their low altitude and frequent use of the airspace. This led to a common belief among Scout pilots that they could handle most situations through air-to-air frequencies without needing positive control from the Air Force ATC. When the Shadow launched or recovered, as it did frequently, the SWTs altered their flight corridors to a narrow strip of road that remained clear of the city and the unmanned aircraft's path.

Coalition convoys frequented the road that split the air corridor and these were often supported by SWTs on their way in and out of the FOB. As flight lead of a SWT about to launch, Scout 14 was monitoring the VHF radio while he and his wingman sat in the forward arming and refueling point (FARP). Their mission was to launch to make a time-on-target 10 minutes away, but his wingman experienced a maintenance delay on startup and they were cutting it close.

Scout 14 was anxious to get his show on the road.

"Kirkuk Tower, this is Shadow 17 inbound for South TALS," Scout 14 heard a muffled UAS operator announce over tower frequency.

"Roger, Shadow, proceed to South TALS," the controller responded.

Scout 14 knew he would need to stay clear of the sectors used by the incoming UAS while skirting the city.

"Kirkuk Tower, this is Scout 29 and flight, inbound from the south conducting tactical operations along Route 1."

Scout 14 knew this was his sister ship and they would be operating in the exact airspace he needed to pass through to get to his destination. His wingman suddenly gave a ready call and they backed out of parking. At that moment, Scout 14 made a hasty decision that almost led to disaster.

"Tower, this is Scout 14, a flight of two in the FARP, request departure to the southeast."

"Scout 14, hold for traffic, I have a Shadow inbound for landing and another scout weapons team operating along your route."

"Roger, tower, we can deconflict internally with company traffic. Request permission to launch."

"Scout 14, you are cleared for takeoff, report frequency change."

As Scout 14 began his climbout, he ran through his tactical primary command channels and heard the "eagle call" from his wingman, confirming they were formed as a flight.

He tried to contact the other SWT on FM. "Scout 29, Scout 14," on the troop internal net most often used … but there was no answer.

Scout 14 changed nets. "Scout 29, Scout 14," on the squadron net … still no answer, and they were getting close.

Scout 14 changed to the controlling ground battalion's net. "Scout 29, Scout 14!" … still no answer.

In a split second, Scout 14 realized he had led his two-ship team right into the flight path of another team that had no radio communication. He could also tell that given their focus on the ground element, they had not yet seen his team. Both of Scout 29's aircraft unexpectedly made abrupt turns toward 14's flight, and 14 saw what was happening. He decided to dive for the dirt and get the hell out of there.

Fortunately, Scout 14's wingman stayed in close combat cruise and they were able to pass under Scout 29's flight.

It was only after they were well clear that they heard 29's voice on their team internal net. "Scout 14, Scout 29. What the hell was that?"

"Scout 29, this is Scout 14. I'm sorry about that. I'll explain after we land," he said in an audibly shaken voice.

Scout 14 and his wingman completed their mission and made it home; but in the after-action review, some candid comments were made by all. Scout 14 later apologized to Scout 29 and learned that his team had been supporting a transient unit's convoy. Due to heavy electromagnetic interference and radio issues, they were down to only one FM for the team.

Scout 14 made the assumption that his sister team would be reachable to deconflict the airspace, but they were not. If Scout 14 had simply taken a few moments to try and communicate with the other team while they were still in the FARP, he would have learned this. He could have then decided to wait for the Shadow to land and take a normal route. Instead, he relied on his overconfidence and it almost cost his life and the lives of others.

We often don't recognize bad decisions until it's too late. Fortunately, Scout 14 was able to learn from his mistake and take a valuable lesson with him.

> "He **DECIDED** to dive for the **DIRT** and **GET THE HELL OUT OF THERE.**"

Pulling the Plug

As Soldiers, we've sat through safety classes on just about anything and everything imaginable. Despite this, accidents still happen and Soldiers are injured and killed. One issue that has been a problem on each of my deployments is largely preventable — electrical fires.

On my first deployment to Afghanistan, I watched in despair as my main source of supply and entertainment — the PX — burned to the ground in what was probably the biggest fire I'd ever seen. The fire started at the Soldier self-service laundry facility due to a short in the electrical wiring. The laundry facility was also destroyed, as were two storage tents.

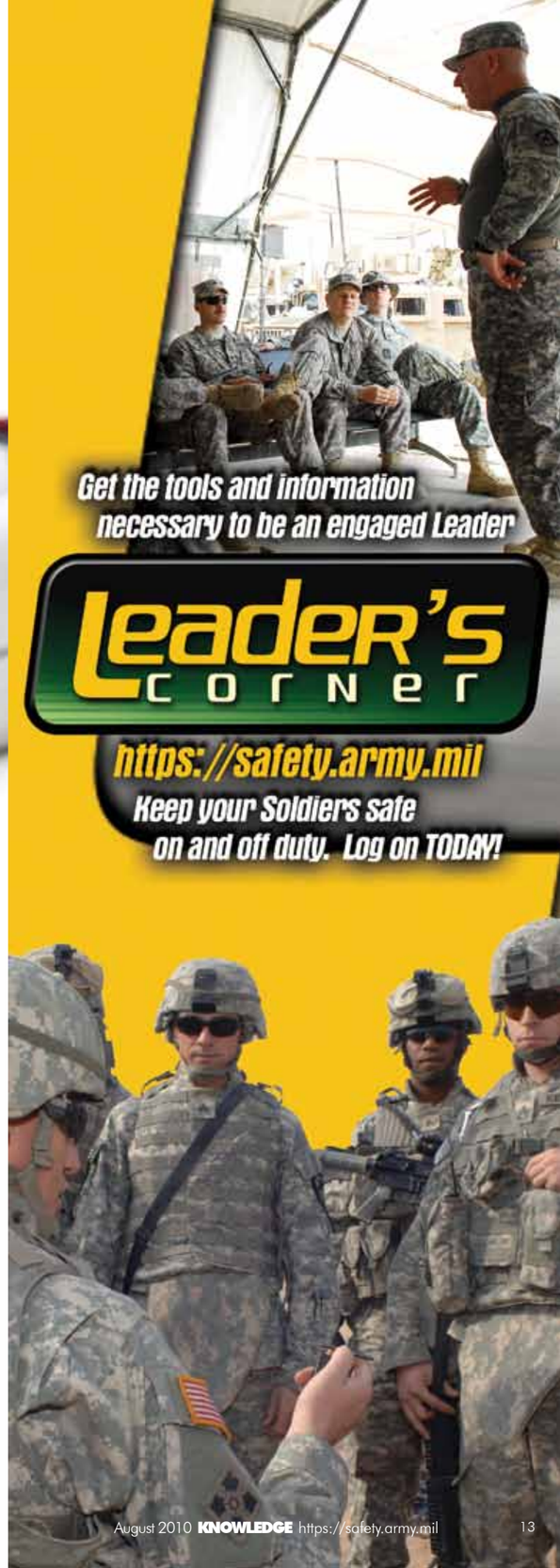
During my second deployment to Iraq, our production control office caught fire one day due to overloaded power strips. One of the contributing factors was the power strips were purchased locally from a bazaar and were not Underwriters Laboratories (UL) certified. We also had several other power strips and light fixtures smoke or spark throughout the deployment. Fortunately, there were Soldiers present who were able to unplug the items or extinguish the fire.

Before your next deployment, think about electrical safety and how it could affect your combat readiness and, more importantly, the lives of your Soldiers. Educate your Soldiers about electrical hazards and what to look for. Here are some measures any Soldier can take to "pull the plug" on electrical fires:

- Inspect tools, power cords and electrical fittings for damage or wear before each use. Repair or replace damaged equipment immediately.
- Tape cords to walls or floors when necessary. Never secure with nails or staples, which can damage cords and cause fire and shock hazards.
- Be aware that unusually warm or hot outlets may be a sign that unsafe wiring conditions exist. Unplug any cord to these outlets and do not use until a qualified electrician has checked the wiring.
- Make sure exposed receptacle boxes are made of nonconductive materials.
- Know where the breakers and boxes are located in case of an emergency.
- Do not touch a person or electrical apparatus during an electrical accident. Always disconnect the current first.
- Do not use outlets or cords that have exposed wiring.
- Ensure all electrical equipment has the UL certification. If you are unsure, you can check at http://www.ul.com.
- Ensure only trained and authorized personnel work on electrical equipment.
- Clearly label and rope off all electrical hazards as needed to prevent personnel from touching or walking into circuit panels and wiring.
- Make sure fire extinguishers are fully charged and inspections are up to date.
- Ensure smoke detectors are installed and the batteries are checked regularly.
- Don't overload electrical outlets with too many plugs.
- If you must use an extension cord, only do so temporarily and match the amperage and wattage limits of the cord and appliance. Never use damaged cords.

> "EDUCATE your Soldiers about ELECTRICAL HAZARDS and what to LOOK for."

With continued education and using pre-combat checks, we can lower — if not eliminate — the number of electrical fires while deployed. This will help us maintain our mission readiness and bring our Soldiers home alive.



Located adjacent to the Baghdad International Airport is a little-known organization that has transformed safety on bases throughout Iraq. Through its efforts, fires and electrical shocks have dramatically decreased, saving countless Soldiers and Civilians from injury and even death.

shock treatment

CAPT. RUSSELL HUGHES
U.S. Navy
Task Force Safety Actions for Fire and Electricity
U.S. Forces-Iraq

In the summer of 2008, Multi-National Force-Iraq (MNF-I) had a serious problem — more than 140 fires and 50 shock injuries were occurring every month. Too many Soldiers were suffering injuries for reasons that had nothing to do with combat. To tackle this problem, Gen. David Petraeus, then-commanding general for MNF-I, ordered the establishment of Task Force Safety Actions for Fire and Electricity (SAFE) to address the poor electrical and fire safety conditions on all bases in Iraq.

Task Force SAFE is a partnership between U.S. Forces-Iraq (USF-I), the U.S. Army Corps of Engineers, the Defense Contract Management Agency and contractors Stanley, Baker, Hill and Inglett & Stubbs. A division within USF-I J7 (engineers), Task Force SAFE consists of 113 personnel from these organizations and is leading the effort to provide a safer environment for servicemembers and Civilians in the Iraqi theater. The task force uses a multipronged approach of awareness campaigns, education and training, as well as its primary function of inspection, repair and quality assurance, to ensure U.S.-occupied facilities meet Army Regulation 420-1 fire codes and National Electrical Code 2008 electrical standards.

Common Task Force SAFE concerns include cheaply made, non-code-compliant adapters and power strips that are sometimes used in theater and personnel leaving on lights and major appliances continuously, both of which greatly increases the chances of fire. Another challenge is that the common construction material in Iraq is unpainted plywood, which has a low ignition temperature for fires. Also, many of the buildings used by U.S. forces were built before 2003 and are of Iraqi construction and do not have the grounding and bonding necessary to prevent shocks and electrocutions.

To conduct inspections and repairs, Task Force SAFE employs two-person teams comprised of master/journeyman electricians and fire protection specialists and sends them out to every base in Iraq. The teams are tasked with inspecting every building for electrical and fire hazards. When master electrician inspectors enter a facility, they conduct a comprehensive check for unsafe conditions, looking for proper splices, effective grounding and bonding, any evidence of arcing and overheating, fluorescent lights with unsafe magnetic ballasts installed and exposed and energized wires.

Fire protection specialists will check facilities for operating smoke detectors, charged fire extinguishers, clear egress routes and proper storage of flammable materials. They also inspect fire departments to ensure firefighters are properly trained to handle fire emergencies and that equipment is in good working order.

When electrical faults are identified at the installations, they are reported to the unit commander or mayor's cell, which is similar to a small town handling the facilities and infrastructure. The unit then passes the repair work to a contractor. When faults are identified at small bases without a mayor's cell, they're repaired by Task Force SAFE technicians following the inspections. All materials used by Task Force SAFE to make repairs are supplied by Class IV yards maintained by theater engineers.

THE SECRET TO SUCCESS

In August 2008, Task Force SAFE was established to reduce fires and shocks in Iraq. Over a period of 18 months, the task force was able to improve electrical and fire safety through the following actions:

- **Conducted 170,463 inspections of facilities**
- **Identified 53,955 life, health and safety electrical defects**
- **Repaired 32,223 life, health and safety electrical defects**
- **Electrically inspected and repaired 194 small bases consisting of 4,328 facilities**
- **Distributed 1.2 million electric adapters and 572,000 power strips**
- **Held 33 electric/fire safety awareness courses**
- **Replaced 87,000 fluorescent light magnetic ballasts with electronic ballasts**
- **Conducted 34,282 audits of contractor electrically grounded and bonded facilities**
- **Conducted 79 operational readiness inspections of theater fire departments**
- **Inspected 61,182 buildings for fire code violations**

Task Force SAFE also provides a safer environment for Civilian contractors by conducting electrical and fire safety assessments on the 350 contractor camps co-located on U.S. bases in Iraq. In addition, once a month, the task force conducts an electrical and fire safety awareness course for Soldiers, Civilians, contractors and local nationals. The course is designed to raise awareness by helping students identify common electrical and fire hazards and the steps needed to correct hazardous situations.

The Payoff

Since August 2008, fires on bases in Iraq have decreased by 96 percent, while shocks have been reduced by 60 percent. By the end of this summer, every building will have received two inspections, with a goal of 94 percent of all buildings being free of any electrical faults. Furthermore, all theater fire departments will have had four inspections, and all small bases will have been repaired.

Today, nearly all shocks and fires on Iraq bases are due to personnel errors, not unsafe wiring. The result is fewer losses to our formations, combat power and Families.

Saved by the Helmet

CAPT. ANDREW SIDWELL
1st Battalion, 1st Special Warfare Center
Fort Bragg, N.C.

It was a bright, sunny Arizona day near Fort Huachuca as my friend and I headed out to enjoy a ride on our motorcycles. Just three days earlier, I had purchased a new 1997 Suzuki TL1000S. This blood-red beast showed just 63 miles on the odometer as I turned south off Fry Boulevard onto State Highway 92.

> "I TRIED to stand but COLLAPSED, SUDDENLY becoming AWARE of the EXCRUCIATING PAIN in my CRUSHED left foot and ankle."

Including turning lanes, there were three lanes of traffic in each direction, meaning shoppers wanting to cross the street to a shopping center on the other side had to cross six lanes of traffic. With several shopping centers on either side of the road, traffic was thick as people turned into or exited them. My riding partner decided traffic was moving too slowly and zipped down the center line between cars — his Suzuki Katana 750 screaming like a banshee as he accelerated. I thought about following him but decided to do the right thing and wait. I figured I could catch up later.

As I was riding, a car darted out of a shopping center on the left, crossing all three lanes of that side of the road and the median. The driver was a 17-year-old girl who didn't have a license and had "borrowed" her parent's car while they were out of town. She'd been hurrying to get through a small gap in traffic and hit me going full tilt — never even touching the brakes.

I felt the crushing impact as her bumper smashed my left foot and ankle. The bike went sideways, throwing me forward onto the road, where I bounced along until I went head-first into the car in front of me. My helmet bounced off the back bumper just before I came to rest with my head lodged in the car's left-rear wheel well.

I grabbed my helmet, pulled my head out and then slid from beneath the car. The first thing I saw was my beautiful new motorcycle lying on its side several yards away, fluids draining and the exhaust pipe ripped off. I tried to stand but collapsed, suddenly becoming aware of the excruciating pain in my crushed left foot and ankle. I focused on not going into shock while trying to restrain

the urge to strangle the driver who had just run me down. I'm sure I looked like something out of "The Terminator" as I dragged myself toward the retreating girl. Thankfully, two off-duty emergency medical technicians were nearby and came over to treat me while I waited for the ambulance.

All I could think about — aside from the pain and loss of my new bike — was how could this have happened? I was wearing all the proper personal protective equipment (PPE), had been riding responsibly and was an experienced rider. I had attended Motorcycle Safety Foundation (MSF) training. Having done everything I was supposed to do as a rider, how could I have been involved in something like this?

The answer is quite simple; this accident could have happened to anyone. The bottom line is no matter how prepared or experienced we riders are, we are still at the mercy of car drivers, the weather, road conditions and other events beyond our control. That's not to say safety should be disregarded; just the opposite.

Preparation is the one thing you can always do to increase your chances of survival. Had I been unprepared by deciding not to wear a helmet, I could have been dead. In fact, the National Highway Traffic Safety Administration (NHTSA) estimates that "helmets saved 1,784 motorcyclists' lives in 2007, and that 800 more could have been saved if all motorcyclists had worn helmets." According to NHTSA, helmets are about 37 percent effective in reducing motorcycle fatalities.

Beyond helmets, Army Regulation 385-10 requires Soldiers wear additional PPE, including over-the-ankle shoes or boots, a long-sleeved shirt or jacket, gloves, eye protection and a reflective vest or belt. This equipment is to be worn at all times when operating a motorcycle, both on and off post. I had on all of these when my accident occurred. Aside from the reflective belt, I can honestly say they reduced the seriousness of my injuries, according to the emergency room doctor who initially treated me.

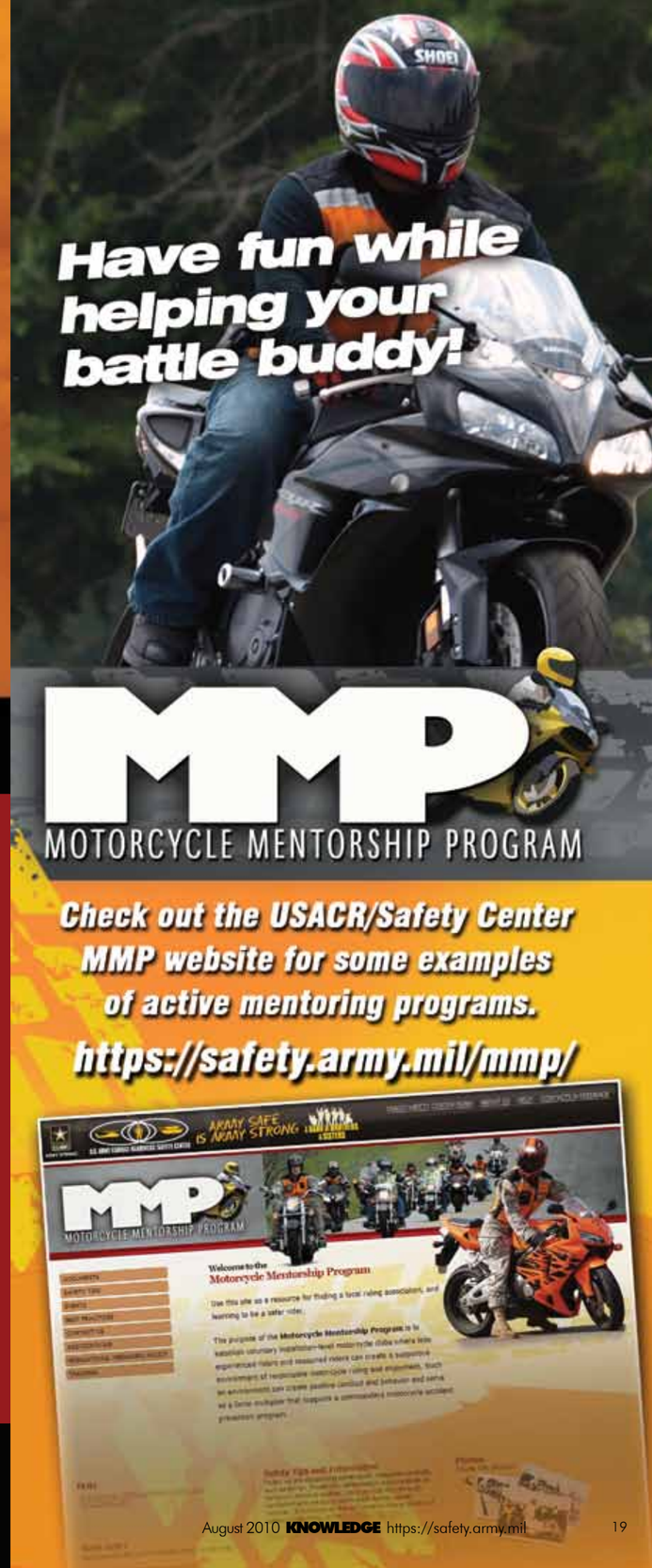
HOW BIG IS THE PROBLEM?

CAPT. ANDREW SIDWELL
1st Battalion, 1st Special Warfare Center
Fort Bragg, N.C.

My motorcycle accident, which happened in 1997, was in no way a unique experience. In fact, during the decade between 1997 and 2007, motorcycle accidents nearly doubled, going from 53,000 riders injured and 2,116 killed in 1997 to 103,000 injured and 5,154 killed in 2007. Of those who died during 2007, 4,833 either had alcohol in their system or weren't wearing a helmet. That means nearly 94 percent of those fatalities could possibly have been prevented.

Being in the military doesn't exclude us from fatality statistics. In 2008, 51 Soldiers died as a result of motorcycle accidents. The hardest hit demographic was enlisted personnel in the ranks of specialist/corporal through staff sergeant, age 23 through 33 years. These riders accounted for 22 of the 51 deaths. Furthermore, 37 out of these 51 deaths were sport bike riders — most riding bikes with an engine capacity of 1000cc or more. Typically weighing about 400 pounds and having 150 horsepower or more, some of these bikes can exceed 180 mph.

To put the loss of those 37 sport-bike-riding Soldiers into perspective, a Stryker infantry platoon consists of 45 Soldiers. Imagine losing almost a full platoon from your company and you can begin to understand the potential effect of motorcycle accidents on the combat readiness of a unit.



FAT, DUMB AND HAPPY

CHIEF WARRANT OFFICER 4 STEVEN T. SUND
C Company, 4th Battalion, 2nd Aviation Regiment
Camp Humphreys, Korea

There I was on a multiship day visual flight rules cross-country mission somewhere over the middle of North Carolina. I was a company maintenance test pilot (MTP) flying an AH-64A on my second tour at Fort Bragg, and I felt comfortable flying in the local area. We were positioned in the middle of the formation, the weather was fine and my co-pilot gunner (CPG) had the controls in the front seat. We were flying along "fat, dumb and happy."

> "I SHOULD have LANDED immediately — PREFERABLY STRAIGHT AHEAD into the FIRST open AREA WE SAW."

As I performed Task 1026, Maintain Airspace Surveillance, from Training Circular 1-238, I noticed the aircraft had suddenly developed a one-to-one vertical bounce, accompanied by the CPG saying, "What the hell was that?" I looked out the window and saw one rotor blade flying about four inches below the others.

The aircraft then started vibrating severely up and down. I took the controls from the CPG and quickly checked controllability. All the controls seemed to be working normally and the vibration levels hadn't changed. I announced to the flight I was having a problem and told my CPG to find the nearest airport.

Just as the CPG pulled out the map, another aircraft in the flight said, "There's an airport at three o'clock, about four miles away."

I called, "Roger, turning right," and almost immediately sighted the airfield.

Now, I know you're probably wondering why I didn't put it down right there. Well, I strongly considered it. There were plenty of open fields between the airfield and me. I guess it was the MTP in me thinking that if the aircraft needed a new blade, I had to make sure our maintainers could get a truck to the aircraft. I also discounted the possibility of a flight control malfunction since the controls still worked normally. I decided to continue to the airfield with the option of landing immediately if the vibration level increased.

On final approach, I saw a National Guard maintenance facility adjacent to the runway, so I landed directly to their taxiway. As soon as I brought the power levers back, the CPG said, "Something just came off one of the blades!"

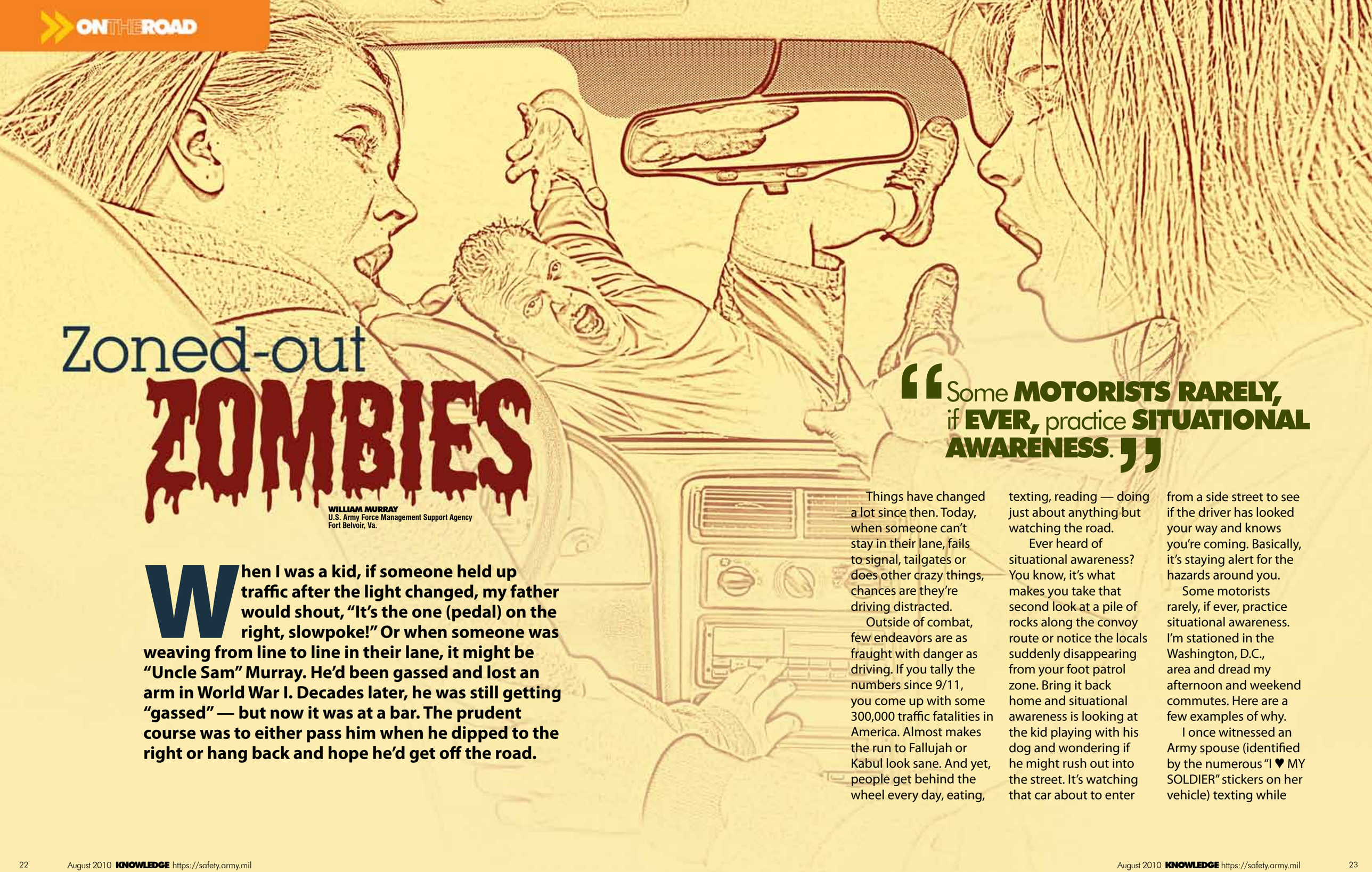
After finishing our shutdown, we recovered half of a main rotor tip cap that had landed about 50 feet in front of the aircraft. As we looked at it, we noticed the metal on the leading edge was paper thin. Evidently, it had eroded enough that the air could enter and strip the top and bottom off like a banana peel.

Lessons Learned

The important question is, "What have I taken away from this experience?" Obviously, I pay a lot closer attention to main rotor tip caps on preflight than I did before. I also try to consider how being a maintainer influences my decision-making process. Figuring out how to recover a downed aircraft is something a maintenance officer does on a regular basis, but choosing a landing site during an emergency based on ease of access for repairs wasn't the smartest thing to do. I should have landed immediately — preferably straight ahead into the first open area we saw.

We were lucky. Accidents often begin with a common-error chain of events. Should you need to make an off-airport landing, be extremely cautious and ensure no obstacles such as poles, wires, trees, low-level brush and buildings are in your path. The best way to handle these obstacles is to remember slow is good and slower is better. Going slow gives you the ability to see what you're flying into in case you need to abort or alter the landing. Never be so committed to a planned flight that you refuse to alter it when an emergency happens.

The next time you're flying along fat, dumb and happy, remind yourself that good judgment will keep you alive.



Zoned-out ZOMBIES

WILLIAM MURRAY
U.S. Army Force Management Support Agency
Fort Belvoir, Va.

When I was a kid, if someone held up traffic after the light changed, my father would shout, "It's the one (pedal) on the right, slowpoke!" Or when someone was weaving from line to line in their lane, it might be "Uncle Sam" Murray. He'd been gassed and lost an arm in World War I. Decades later, he was still getting "gassed" — but now it was at a bar. The prudent course was to either pass him when he dipped to the right or hang back and hope he'd get off the road.

> "Some **MOTORISTS RARELY,** if **EVER,** practice **SITUATIONAL AWARENESS.**"

Things have changed a lot since then. Today, when someone can't stay in their lane, fails to signal, tailgates or does other crazy things, chances are they're driving distracted.

Outside of combat, few endeavors are as fraught with danger as driving. If you tally the numbers since 9/11, you come up with some 300,000 traffic fatalities in America. Almost makes the run to Fallujah or Kabul look sane. And yet, people get behind the wheel every day, eating, texting, reading — doing just about anything but watching the road.

Ever heard of situational awareness? You know, it's what makes you take that second look at a pile of rocks along the convoy route or notice the locals suddenly disappearing from your foot patrol zone. Bring it back home and situational awareness is looking at the kid playing with his dog and wondering if he might rush out into the street. It's watching that car about to enter from a side street to see if the driver has looked your way and knows you're coming. Basically, it's staying alert for the hazards around you.

Some motorists rarely, if ever, practice situational awareness. I'm stationed in the Washington, D.C., area and dread my afternoon and weekend commutes. Here are a few examples of why.

I once witnessed an Army spouse (identified by the numerous "I ♥ MY SOLDIER" stickers on her vehicle) texting while

TIPS TO MINIMIZE DISTRACTED DRIVING

Do you occasionally have trouble keeping your mind on the road and your car between the lines? Here are some commonsense tips from Farm Bureau Insurance to help you reach your destination without a side trip to the hospital.

- **CHANGE YOUR WAYS** and recognize the activities that distract you, such as eating, conversing on the phone or changing a CD. Once you recognize these distractions, you can work to eliminate them.
- **MAKE A PLAN.** Know your route in advance and make sure you clearly understand your directions. Check the weather and road conditions. If you are transporting children, make sure they are properly buckled up and you have items to keep them occupied, such as books on tape or soft toys.
- **MANAGE YOUR TIME** so you do not have to multitask or drive aggressively on the road.
- **DON'T LET YOUR DRIVE TIME BECOME YOUR DOWN TIME.** Understand driving is not your "down time" or a time to catch up on phone calls, personal grooming or dining.
- **SCAN** the roadway to ensure you are aware of others at all times. Be prepared for other drivers to be unpredictable.
- **CONCENTRATE** on your driving. Make sure you are not upset or tired when getting on the road. This is not the time to have a serious or emotional conversation with your passengers.
- **PULL OVER** if you need to do something that will take your eyes and/or mind off the road. Make sure you find a safe place to pull over first.
- **REDUCE THE USE.** Use technology sensibly.
- **TAKE A REFRESHER CLASS.** Everyone can pick up bad habits through the years. A driver improvement class can raise your awareness and help you assess your driving behaviors.
- **BUCKLE UP — EVERY TRIP, EVERY TIME.** Making sure everyone is properly buckled-up is the best defense against accidents caused by distracted drivers.

operating in heavy traffic on Interstate 495. My wife and I watched as she got closer to the car ahead of her every time traffic stopped. When traffic suddenly halted after reaching about 30 mph, she panicked and threw her device against the windshield, trying to regain control of her vehicle. Fortunately, she stopped in time. The next time she passed us, she had both hands on the wheel.

One afternoon I noticed a Soldier having an animated conversation on his cell phone. He was using the cross-handed (right hand to left ear) method to hold the phone as we crept along U.S. Highway 1. When the traffic stopped, he only missed hitting me by going onto the shoulder. He recovered his phone, gave me an annoyed look, pulled back onto the road and continued the same cross-handed cell phone conversation.

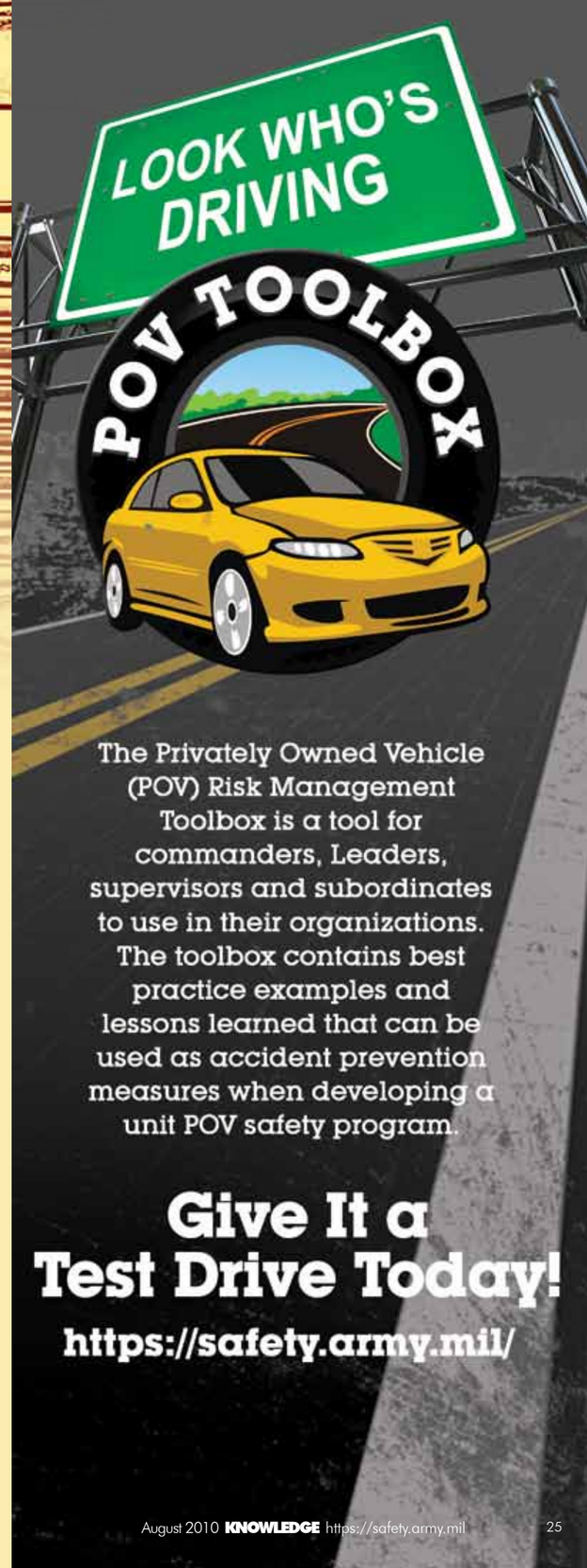
It's not just that distracted drivers disrupt the flow of traffic or that using handheld devices while driving on post is prohibited by regulation. The real issue is these drivers pose a dangerous threat to everyone else on the road.

I once had to send my first sergeant and a platoon leader to the chapel where the wife of a staff sergeant worked. Their duty was to tell this young mother of three that her Soldier had gotten distracted on the road and wouldn't be coming home — ever. What about you? Is a phone call or text message worth your life?

> "When the **TRAFFIC** stopped, he **ONLY MISSED** hitting me by **GOING** onto **THE SHOULDER**."

Although it may be hard for many to believe, it is possible to drive without having a cell phone grafted to your ear. Instead, try using a little common sense. If you're giving someone a heads up that you're coming, call before you get on the road. It won't delay you that much and you'll improve your chances of actually arriving. Got an incoming text message? Wait until you can stop to send back an answer. Fat-fingering your response on the fly can leave you with an "incomplete" sentence and a "D" (for "dead") in graveyard grammar. Pay attention so the risky things happening around you don't happen to you!

It's summer. Take the Family and friends on a road trip. Just make sure you bring them — and yourself — back in one piece.



DON'T ASSUME ANYTHING

CHIEF WARRANT OFFICER 4 STEVEN T. SUND
C Company, 4th Battalion, 2nd Aviation Regiment
Camp Humphreys, Korea

It was a typical early summer day at Abu Hammad Air Base, Egypt, located in the Nile Delta northeast of Cairo. I was assigned as an AH-64A maintenance test pilot (MTP) and adviser to the Apache Technical Assistance Field Team. Despite the challenge of English as a second language for my Egyptian counterparts, I thought I had a good handle on how the local pilots expressed themselves. I thought wrong.

One of the Egyptian MTPs approached me with a question as I finished meeting with the maintenance squadron commander. He had been working on a post-phase aircraft for a few days and had progressed to track and balance of the rotor system.

"I am hearing a 'voice' from the rotor blades," he said. "Would you fly it with me?"

Thinking the problem was related to an anti-erosion tape issue, I said I would fly with him and we proceeded to the aircraft. After preflight, he opted to take the front seat to practice running the aircraft vibration analysis kit. I climbed in the back and we progressed through a standard run-up, with everything appearing to operate normally.

After taking our ground and hover measurements, we were cleared for takeoff but elected to remain in the traffic pattern. That wasn't a huge issue at this location since it was originally a Soviet airbase with a 10,000-foot runway. I did not notice anything unusual as we took the measurements at the various airspeeds until I attempted to accelerate to 140 knots for the final measurement. As I approached 100 percent torque, I heard a sound like machine-gun fire coming from the left engine.

Over the din, I heard my front-seater say, "This is the 'voice' I was telling you about. What is it?"

I reduced power and, as the torque decreased through about 85 percent, the banging stopped. I croaked out, "Compressor stall," and made a slow turn to a base leg to set up for landing. Still a bit shaken and hesitant to make any large power changes, I decided to make a roll-on landing — not a huge challenge on a 10,000-foot runway. We landed without incident and returned to the maintenance hangar without further problems.

Lessons Learned

So, what did I learn from this incident? More than anything, I learned not to assume anything and to ask questions. Training Circular 1-238, Aircrew Training Manual for Attack Helicopter, AH-64A, paragraph 6-3b, Crew Coordination Basic Qualities, states the following for accomplishing pre-mission planning and rehearsals: "Pre-mission planning includes all preparatory tasks associated with planning the mission. These tasks include planning for VFR, IFR and terrain flight. They also include assigning crewmember responsibilities and conducting all required briefings and briefbacks. Pre-mission rehearsal involves the crews collectively visualizing and discussing expected and potentially unexpected events for the entire mission. Through this process, all crewmembers think through contingencies and actions for difficult segments or unusual events associated with the mission and develop strategies to cope with those contingencies."

Had I asked specific questions about the nature of the "voice" he'd heard and the other indications he'd noted, I'd probably been able to decipher the problem before we ever got into the aircraft. At the very least, it would have prepared me for the possibility of what actually occurred.

Running on EMPTY

CAPT. MIKE CRIVELLO
U.S. Army Aeromedical Research Laboratory
Fort Rucker, Ala.

It was August 2007 in Tikrit, Iraq, and I was assigned to C Company, 3rd Battalion, 25th Aviation Regiment (Air Ambulance). The unit's deployment had been extended from 12 months to 15 months and morale was dim — at best. Eventually, though, a light appeared at the end of the tunnel.

With redeployment just two months away, I found renewed motivation to regain a high level of physical fitness before returning home. I started running three to four days a week on dirt trails just past the end of the runway. After a few weeks, I was losing weight, feeling great and my clothes were fitting more loosely. One of the greatest benefits I noticed was how much easier it now was to run to the operations center and aircraft for a medevac mission. My confidence started to soar and I was holding my chin a little higher.

Because of my newfound fitness level, I strived even harder. Running and getting thin became an obsession. Each day, I pushed harder than the day before. The fire within me became hotter with each passing step. Even better, others were noticing my weight loss and fitness level, which further fueled my desire to take it to the next level.

As anyone can imagine, it was quite hot in Iraq during the summer, and daily temperatures were reaching 120 F or more. The cockpits of the aircraft were easily 140 F while baking in the sun. On any given mission, the crew came back soaked from flying for an hour or more in the scorching sun. By nature, I sweat a lot, but I'd never experienced heat like this.

When I was off duty, I would run in the mid- to late afternoon, which must have been close to the hottest part of the day. But that was hardly a deterrent. If anything, it made me more motivated. I was driven to lose more weight, so my mentality was "the hotter the better."

Occasionally, I changed up my cardio routine to ensure my muscles were getting the most from my workouts, and I started implementing sprints into my runs. I jogged for a short bit, picked an object about 25 to 30 yards ahead, sprinted to it and then returned to a jog pace. It was during one of these sprints my obsession caught up with me. I was halfway to my chosen marker when it suddenly felt like someone stabbed me in the right hamstring.

I was forced to stop in my tracks and nearly dropped to my knees. The pain was excruciating. I stretched for a short bit, trying to shrug it off, and then started to jog. But the pain wouldn't let me continue. I slowly hobbled back to the life sustainment area with my head hung low. With each step, I felt a shooting pain. I soon realized my goal of losing more weight and achieving a great running fitness level was crushed.

Lessons Learned

I guess any athlete has to come to grips with setbacks because of the body's limitations, but it was hard for me to accept my own humanness. I was determined to get back in the saddle as soon as possible and start training again. First, though, I had to evaluate why this injury happened to me.

Dehydration and overexertion were the primary contributors to my severely pulled hamstring. From the scorching heat, flying with 65 pounds of gear in a sweltering cockpit, continuous running and working out multiple days a week, it became clear my body was putting out more than I was taking in. My water intake was not nearly at the acceptable level for the amount of sweating I was doing. My body was running on empty. What's more, my stretching techniques were not adequate for the type of exercise I was conducting. My disregard for the temperatures while running in the hot sun further aggravated the situation.

I am now a firm believer in proper hydration and respecting my environment. Had I hydrated properly, I would have had a better chance of accomplishing my fitness goals. In addition, by switching my run time to early morning or dusk, when the temperatures dropped to more reasonable levels, and taking the time to stretch more thoroughly, perhaps I would not have pulled such a crucial muscle.

The consequences of my actions directly affected my physical fitness regimen, weight loss and response time, but it could have been worse. I was able to continue my mission as a medevac pilot, but my response time "running" to the operations center and aircraft had drastically slowed. Fortunately, I never caused our aircraft to take off late when responding to a 9-Line.

I also could have been grounded, costing my unit a valuable asset as a pilot responding to lifesaving missions. I saw the consequences of my actions in multiple facets of my everyday life; but, even more so, I definitely felt them. It was a hard and painful lesson to learn.

As Soldiers, we must maintain our bodies, physical fitness and mental alertness — not only for ourselves, but for our brothers and sisters in arms and our mission. Stay healthy, stay hydrated and accomplish the mission!«

Disaster near Crazy Horse

CHIEF WARRANT OFFICER 3 CURTIS D. FOSTER
160th Special Operations Aviation Regiment
Fort Campbell, Ky.

It was 2005 and I was riding with a group of friends to the annual motorcycle rally in Sturgis, S.D. We had dedicated our ride to honoring a fallen Soldier, Chief Warrant Officer 2 Michael Blaise, who'd died in Iraq in January 2004.

The ride to Sturgis had been incredible. When we got there, we set up our camp and, the next day, started touring the Black Hills. On one of our rides, we decided to enjoy the majestic beauty of God's creation by riding to the Crazy Horse Monument and then down to Custer National Park. After visiting the Crazy Horse Monument, we got onto U.S. Highway 385 and headed south toward Custer National Park. Traffic in our direction was pretty light that morning and only slightly more busy in the oncoming northbound lanes. We were enjoying the ride — but that was about to dramatically change.

We hadn't been on the road for long when we came upon a bad accident. Several bikes had gone down and a badly mutilated body was lying in the road. We stopped to offer help. The rider on the road was obviously dead; his left leg had been amputated and stomach eviscerated (open with his internal organs coming out).

I went to check on the other riders. The first rider I came to had a possible hip or pelvis fracture along with some road rash. The second rider I checked — a woman riding as a passenger on one of the bikes — hadn't been wearing a helmet and suffered severe head trauma. The last person I tried to help was by far the luckiest. Although he'd also failed to wear a helmet, he'd escaped the accident with only some light road rash.

It wasn't long before the police and paramedics arrived. As the paramedics took over the medical treatment, I assisted the police officer recovering the dead rider's body and leg. The police kept us there for some time; I believe they appreciated the help.

It didn't take long to find out what happened. A pickup in the northbound lanes had been hauling a trailer carrying eight portable toilets that the driver had failed to properly secure. One of the toilets fell off the trailer, striking a motorcyclist who was following on the road. When his bike went down, it threw him into the oncoming lanes and directly into the path of three bikes. It happened so quickly the lead rider couldn't avoid hitting the downed motorcyclist. The second rider then went out of control and crashed, while the third rider laid his bike down trying to avoid the accident.

We were in a pretty somber mood as we slowly rode back to camp. To make matters worse, it began to rain — which slowed us even more. However, the long ride gave me time to think about the consequences of people's actions. Unlike most accidents at Sturgis, this one did not involve alcohol. Instead, individual lapses in judgment, procedure or routine cost a rider his life and may have left a woman permanently disabled.

How does one prepare to be struck by a portable toilet? Should the rider have kept more separation from the trailer? What about the woman with the traumatic head injuries? How would her life be different now had she been wearing her helmet? While these questions will, for the most part, go unanswered, this incident made each of us a better rider.

As soon as we returned to camp, we discussed the accident and what we would do to prevent a similar incident from occurring. From this tragic event, we took away the following lessons about surviving on the road:

- Always wear your helmet.
- If something ahead doesn't look right, increase your following distance.
- When riding in a group, watch out for each other's safety.
- Maintain group integrity on the road so you'll be more visible to other motorists.
- Go over your hand and arm signals before every ride and ensure everyone knows the route, including who will ride lead and who will bring up the rear.
- To protect less experienced riders, put them in the middle of the group next to a seasoned rider.

Since 2005, we have kept our riders safe by practicing these measures consistently during our annual "Blaise 'N' A Trail" rides. And we plan to keep it that way.

RIDE HONORS FALLEN SOLDIERS

The Blaise 'N' A Trail ride is an annual event to honor Soldiers who have given their lives in the line of duty. Interested riders can go online to www.blaisenatrail.com/ to learn more about these rides.

CAFS

THE STRAIGHT ANSWERS

COMPILED BY THE KNOWLEDGE STAFF

Editor's note: Recent information from users in the field has highlighted a concern over the use of the compressed air foam system (CAFS), a popular firefighting apparatus in use by many aviation units across the Army. Units in possession of CAFS must be aware that inadequate preventive maintenance and lack of training on these systems could result in units being ill prepared to combat a fire should one occur. Additionally, it has been determined that CAFS fire extinguishers, if used as stand-alone systems, do not meet the electrical conductivity rating (Class C) requirements as part of authorized extinguishers listed in DODI 6055.06, National Fire Protection Association national fire codes and Army Regulation 420-1, Chapter 25, which states all fire extinguishers will be Underwriters Laboratories listed or Factory Mutual approved. The U.S. Army Combat Readiness/Safety Center recommends units adhere to the Aviation Maintenance Action Message concerning CAFS, published June 2010.

Unless you're new to firefighting or have had your head buried in the sand, you're probably aware of one of the more heralded advancements in fire suppression development — the CAFS. For some, CAFS might appear to be a radical new development in firefighting. But, in fact, CAFS was developed in the 1930s and used by the British Royal Navy. The U.S. Navy has used the technology for more than three decades, and the Army for the past 13 years. However, a lot of confusion and, in some cases, misconceptions still exist as to what CAFS is, what it is capable of doing and the issues involved.

What exactly is CAFS and what makes it so different from traditional methods of fire suppression? CAFS creates bubbles by combining three critical ingredients: water, foam and air. Bubbles make water more durable and able to absorb the caloric output of the fire. Let's discuss further.

The first ingredient is water. Water remains the primary extinguishing agent in fire suppression. It could be the water carried on the fire truck in a booster tank, water from hydrants or folding canvas tanks or water from a stream, lake, pond, swimming pool or some similar source.

The second ingredient for CAFS is foam. For the purposes of this article, we'll concentrate on Class A and B foams. A foam-metering device, or proportioner, is needed to accurately inject foam concentrate into the fire stream. The foam concentrate/water solution may be pre-mixed in the tank, with pros and cons to be discussed later.

The final ingredient is air. Air is introduced from a compressor, which is a mechanical method of introducing high-volume air into the fire stream by using a vane-type or rotary-screw industrial air compressor. Larger versions of the CAFS today use some type of onboard compressor. Smaller portable units may also be pneumatic (non-mechanical) in design in which a vessel is pre-charged with air. This may be an independent air supply or used in the same vessel in which a pre-mixed foam/water solution exists. These units can be as small as a backpack or large enough to require a motor vehicle to transport its contents.

Why Does It Work So Well?

With CAFS, you are still using water to reduce the heat, but you are doing it more efficiently. It actually absorbs the heat. Seven bubbles make up one average-sized drop of water. Each bubble has a thin wall of water that makes up its shell that removes heat radically 360 degrees around its entire surface area.

What does this have to do with firefighting? It has everything to do with making water more durable and pliable. This is an essential reason CAFS works. It provides a vapor-sealing blanket of foam designed to eliminate ignition or re-ignition of any flammable source.

Fire Classifications

In firefighting, fires are identified according to one or more fire classes (see info box below). Each class designates the fuel involved in the fire, and, thus, the most appropriate extinguishing agent. The classifications allow users to select the most effective extinguishing agent, as well as avoid unwanted side effects. For example, nonconductive extinguishing agents are rated for electrical fires to avoid electrocuting the firefighter.

So, how do you know when, where and how to use the appropriate Class A and B foam to achieve fast, safe suppression for any type of fire situation. Naturally, most municipal departments rarely use anything but Class A foam. It's the firefighters protecting aviation assets, tanker truck collisions and forward arming and refueling points that should keep thousands of gallons of Class B on hand and understand the application techniques inside and out.

Advantages

By using compressed air foam, many advantages are immediately evident. CAFS provides firefighter safety, improves the efficiency of plain water by five to seven times, provides a faster means of fire knockdown, offers a rapid reduction in heat and requires less water.

CAFS is most often acclaimed for its lightweight hoses and great reach capabilities. These lightweight lines allow greater maneuverability and less firefighter fatigue. The lines will actually float on water due to the air in the line. The discharge distance of propulsion is much greater than water alone. Even 25- to 50-gallon-per-minute streams are able to reach 100 feet with the addition of compressed air. Unlike water, a compressed air foam mixture has the ability to be compressed or packed into a hose line. It is for this reason that when shutting down a nozzle, care must be taken to discharge this stored energy because of its increased propulsion factor. The stored energy will come surging out more forcefully than what was experienced before shutting the nozzle valve. Depending on the total length of the hose, it is the storage of this compressible mixture that allows the firefighter many seconds, or even minutes, of valuable firefighting time even if the truck is rendered inoperable. Imagine if you run out of water, lose prime or run out of fuel or, for some reason, the truck or pump quits. The firefighter is still safe for a while because of the stored energy in the hose. The more hose installed means the more time available.

Other advantages of the CAFS include the operator stays farther from the fire and has the ability to see where the foam has been applied. Additionally, most CAFS allow pump operators to control the foam expansion ratio precisely for the given situation, reducing foam waste and runoff, thereby not contaminating soil and water.

Disadvantages

If CAFS is so great, why doesn't everyone have it? The CAFS has several disadvantages.

Often, the No. 1 deterrent is cost. As a rule of thumb, you can figure somewhere between $7,000 and $10,000 for each foam system.

Firefighters must also acquire additional training to use the CAFS. Techniques for applying Class A and B foams vary greatly. Class B methods require strategic stream placement to "blanket" the flaming liquid and prevent dangerous vapors from escaping. Implementing Class B foam drills and practicing several times per year will keep firefighters' skills in shape so they can attack any type of fire with confidence. Remember, Class B, or aqueous film-forming foams, should not be used for structural applications.

Additionally, CAFS can be corrosive to metals such as aluminum and are potentially abrasive. Class B foam is highly corrosive. Firefighters must thoroughly flush the foam out of their operating systems and apparatuses after each use to avoid damaging equipment.

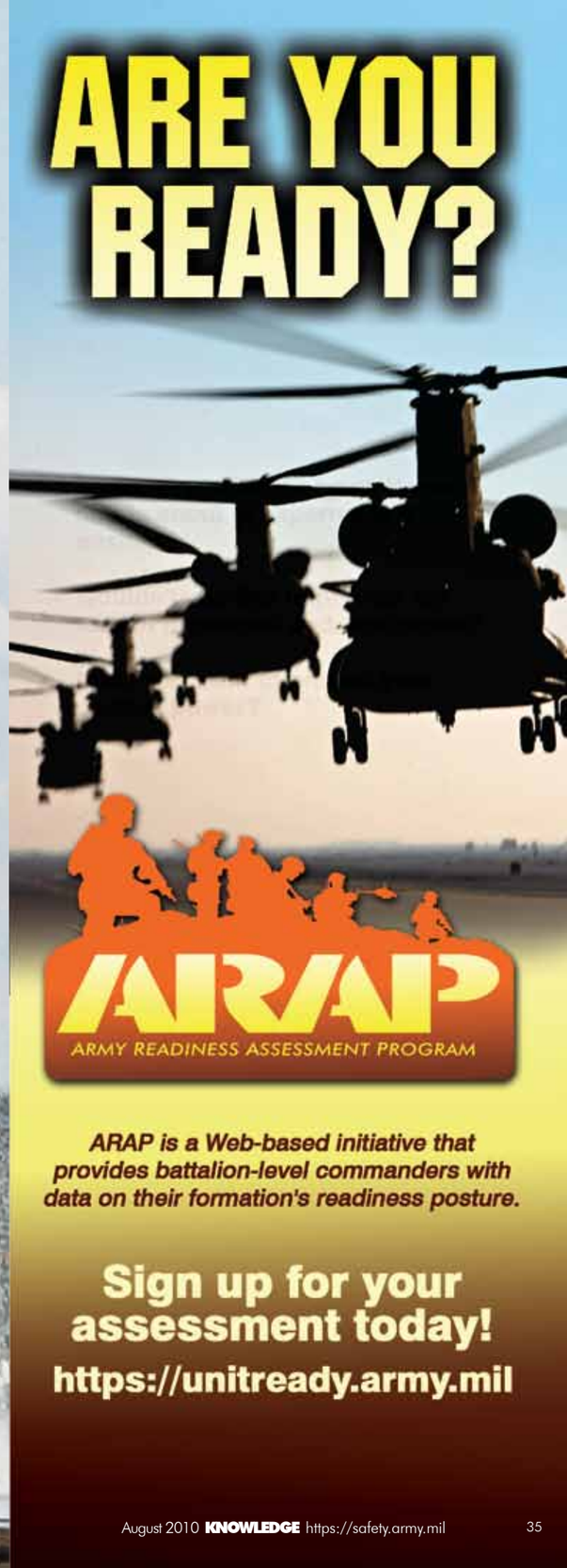
In the event the foam solution is not flowing when the air is added, a condition called "slug flow" will occur with the line, causing pulsation. This results from the air not bonding with the water due to the lack of a surfactant.

While CAFS has been in existence for decades, it is important to do your homework. There are many companies manufacturing CAFS, so talk to them about their products. Ask the right questions and get straight answers. Also talk to other units about their experiences with CAFS. Know your fire problems and find solutions that work for you. Building your knowledge about foam systems is imperative to keeping firefighters up to speed on advancing technology and making sure they're confident when the siren sounds.

Disclaimer: The Department of the Army does not endorse any specific manufacturer of fire-suppression systems.

COMPARISON OF FIRE CLASSES

CLASS	FUEL/HEAT SOURCE
A	Ordinary combustibles (wood, plastics and rubber)
B	Flammable liquids and gases
C	Electrical equipment
D	Combustible metals
K	Cooking oil or fat



Accidents occurred between April 1-30, 2010

LOST

AVIATION

UH-60L

CLASS A

- The aircraft crashed during landing, resulting in one Soldier-passenger receiving fatal injuries.

C-12U

CLASS B

- While conducting an instrument landing system descent approach, the left engine propeller separated at 6,000 feet above ground level. The crew was able to land the aircraft without further incident. However, the aircraft sustained damage to the engine nacelle and left wing.

RC-12P

CLASS C

- The left engine panel separated from the aircraft during takeoff, damaging the engine cowling and top side of the left wing.

RQ-11

CLASS C

- During landing, the aircraft operator noticed a drop in generator and bus voltage, followed by a complete voltage loss. The unmanned aircraft (UA) struck the ground short of the runway.

RQ-7B

CLASS C

- The UA experienced an engine failure during flight. The recovery chute deployed and the aircraft was recovered.

GROUND

AMV

CLASS A

- A Soldier suffered fatal injuries when he was pinned while ground guiding an M916 semi-cab tractor to connect to an M870 trailer.

Personnel Injury

CLASS A

- A Soldier died when the Air Force CV-22A he was riding in as a passenger crashed.
- A Soldier suffered fatal injuries when he fell from a tree and struck a fence, rupturing his liver. The Soldier was transported to a hospital and died 11 days later. Alcohol was reported as a factor in the accident.

CLASS B

- A Soldier's finger was medically amputated at the first joint after it was pinched between two sets of dumbbells.
- A Soldier suffered a permanent partial disability injury when he struck his head while snowboarding off a designated jump ramp, resulting in two fractured vertebrae.
- A Soldier severed his right index finger when his hand was caught in the door of an M1151 HMMWV.
- A Soldier lost a portion of his middle finger when it was caught in the tailgate of a 5-ton dump truck during a construction project. At the

ARMY AVIATION LOSSES

Fiscal 2010
as of July 6, 2010

Class A/Fatalities	
ATTACK	2/1
RECON	3/4
UTILITY	6/6
CARGO	2/0
TRAINING	0/0
FIXED-WING	2/0
UAS	4/0
TOTAL	19/11

ARMY GROUND LOSSES

Fiscal 2010
as of July 6, 2010

Class A/Fatalities	
AMV	12/6
ACV	10/9
PERSONNEL INJURY includes weapons-handling accidents	16/16
FIRE/ EXPLOSIVE	2/1
PROPERTY DAMAGE	0/0
TOTAL	40/32

time of the accident, the Soldier was attempting to remove a rock that was keeping the tailgate from closing.

DRIVING

POV

CLASS A

- A Soldier driving his privately owned vehicle (POV) collided with the rear of a tractor-trailer that was slowing to pull off the road because of a blown tire. The Soldier suffered fatal injuries.
- A Soldier was driving his POV when he crossed the center line of a highway and collided with an approaching vehicle. The Soldier was not wearing his seat belt and suffered fatal injuries.

POM

CLASS A

- A Soldier on block leave was riding his privately owned motorcycle (POM) when he lost control, struck a concrete median and was thrown into a light pole. The Soldier suffered fatal injuries.
- One Soldier was riding his POM while being followed by another Soldier in a POV when the rider went over a hill and lost control. The Soldier was fatally injured when he was thrown from his motorcycle and struck by the POV.
- A Soldier was riding a POM when he lost control on an exit ramp and was thrown from the bike. The Soldier was not wearing his personal protective equipment (PPE) and suffered fatal injuries.
- A Soldier had stopped to yield right of way at an intersection when her bike was struck by a U.S. Air Force-contracted passenger bus. She was pinned by the bus's rear wheels and fatally injured.
- A Soldier was riding his POM through an intersection when a pickup failed to yield right of way and entered his path of travel. The Soldier struck the truck and suffered fatal injuries.
- A Soldier was speeding on his motorcycle while attempting to pass a line of vehicles when one of the vehicles pulled into his path and clipped him. The Soldier lost control and crashed, suffering fatal injuries.

Pedestrian

CLASS A

- A Soldier got out of a cab after drinking and was struck by another vehicle, suffering fatal injuries.
- A Soldier was in the middle of a four-lane crosswalk controlled by signals when he was struck by a taxi and fatally injured.
- A Soldier had stopped to assist at an accident scene when he was struck from behind and killed while pushing a damaged vehicle off the road.

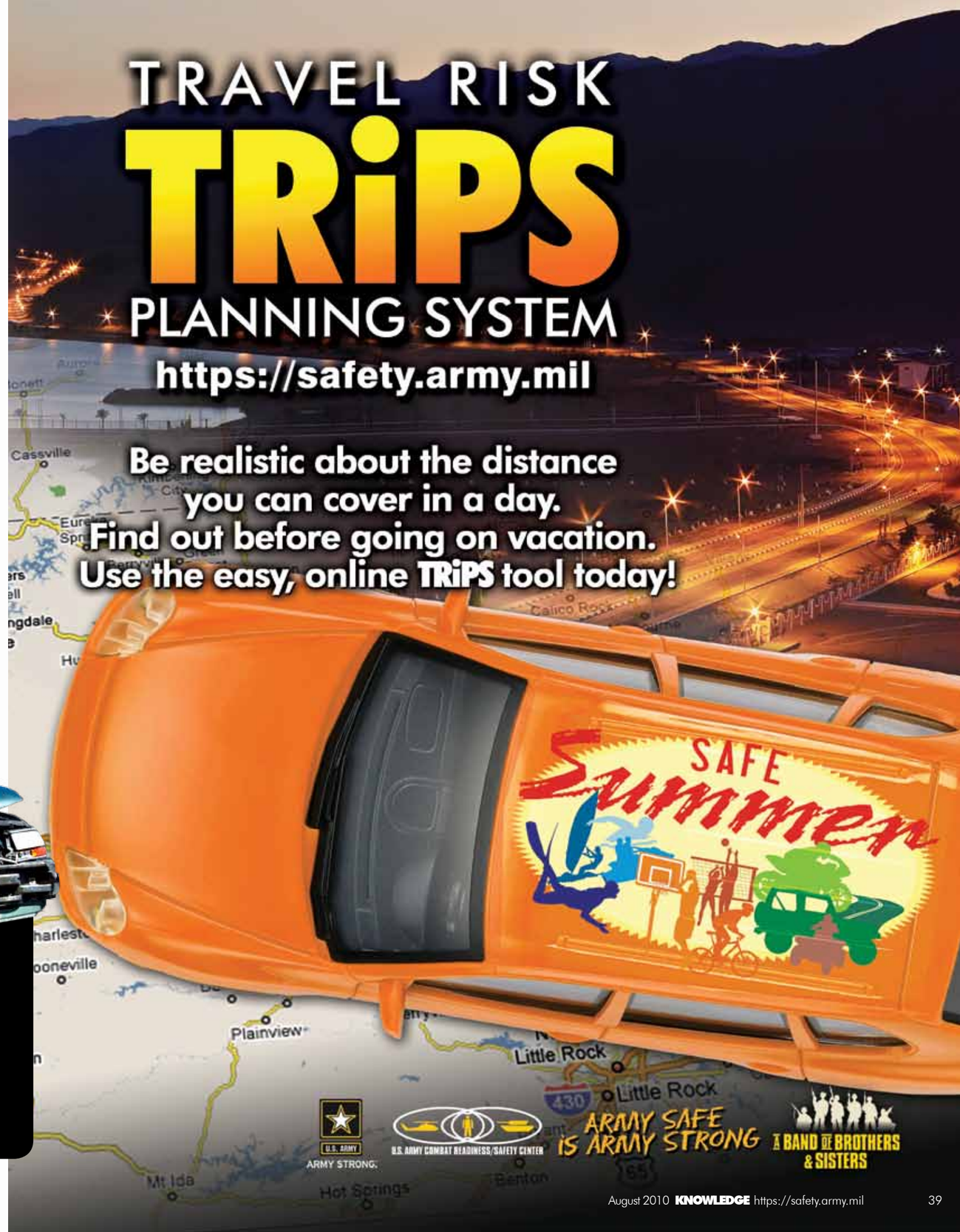
POV DRIVING LOSSES Fiscal 2010

as of July 6, 2010	Class A/Fatalities
CAR	31/31
SUV/JEEP	7/8
TRUCK	4/4
MOTORCYCLE	22/20
PEDESTRIAN	8/9
OTHER*	2/2

*Includes: vans and ATVs

74 TOTAL DEATHS

Fiscal 2009: 83 3 year average: 87



LEADERS, SOLDIERS AND FAMILIES:

MANAGE YOUR RISK

ARMY SAFE IS ARMY STRONG

Check out the USACR/Safety Center tools, products and applications that will not only help make you safer, but also educate your Soldiers and Families on the fundamentals of safety.

U.S. ARMY COMBAT READINESS/SAFETY CENTER

Family | MMP | GRAT | Leader's Corner | MRAP Safety Awareness | POV Toolbox | POM Toolbox | Range & Weapons Safety Toolbox | Driver's Training Toolbox | Peer to Peer | ARAP | Travel Risk TRiPS Planning System

KNOWLEDGE

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OFFICIAL SAFETY MAGAZINE OF THE U.S. ARMY

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U.S. ARMY COMBAT READINESS/SAFETY CENTER

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

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"OPENING THE FLOW of communication DOESN'T have to BE HARD, and, fortunately, there are TOOLS out there to HELP you reach your SOLDIERS."

DO YOU GET IT?

Before I came to the U.S. Army Combat Readiness/Safety Center late last year, I thought I knew a lot about Soldiers and how they think and operate. But as I've traveled throughout our Army since then, I've come to realize there's always more to learn about the men and women we lead every day.

It's always a pleasure to visit a post and hear stories about Soldiers who are out there doing the right things every day and saving lives in the process. And that's one of the most important lessons I've received — most Soldiers want to do their best and do it safely. For example, I was recently in Germany giving a pre-deployment safety briefing and had the opportunity to spend some time with 10 different groups of Soldiers from the same unit. Both they and their leadership were talking the same things, including a top-five list of safety concerns for the upcoming rotation to theater. Every Soldier I spoke with understood these hazards and could explain them to me clearly and without hesitation. These Soldiers clearly "got it" that safety can mean the difference between a successful deployment and one tragically marred by accidental fatalities.

There are always a few Soldiers out there, however, who just don't get it. I'm talking about those Soldiers who, despite knowing what to do, continue to willfully disregard the standard both on and off duty, whether it's speeding, not wearing seat belts, restraint systems or personal protective equipment, drinking and driving, and the list goes on. The price for this reckless behavior is often high, as several of this summer's accidents have shown. We experienced an especially tough couple of weeks when three Soldiers died in privately owned vehicle rollovers because they weren't buckled up, even as their belted passengers escaped serious injury. Around the same time, we lost another Soldier — also unrestrained — in an on-duty HMMWV rollover.

No matter how many of these reports we receive, I'm always surprised at the disregard for safety some Soldiers and even Leaders display. How many times have you been off post, oftentimes just right outside the gate, and seen Soldiers without their seat belts or helmets or behaving in other undisciplined ways? And how often have you seen mission-bound vehicle crews skip pre-combat checks, inspections and rehearsals in the name of saving a little time? I've seen it a lot, at every installation I've been assigned to and every theater I've been in. But the most important question is how many times have you done something about it?

Obviously, we've got to get at the heart of these issues — and that's where we, as Leaders, enter the picture. It's our job to pay attention to the details, and when we see Soldiers disregarding the standard, it's our responsibility to correct them. It's our duty to ask them why they're being negligent and help them see the potentially deadly consequences of their actions. This means talking and listening by both you and your Soldiers, not just you barking orders and them agreeing to follow. The same is true for the random Soldiers you might correct for unsafe behavior on any given day. Take their name and unit information, and follow up with them to let them know you care about their well-being. You never know what kind of leadership they have in their formations, so don't underestimate the positive influence you can have today.

Opening the flow of communication doesn't have to be hard, and, fortunately, there are tools out there to help you reach your Soldiers. One of these is the BOSS Safety Factor. The USACR/Safety Center and BOSS program have updated the original product to be even better for the upcoming year. The updated kit, which includes a safety presentation that features video clips from some of today's top comedians taking a humorous look at the hazards of Army life, will be formally launched Oct. 1 at https://safety.army.mil. Take a look and let us know what you think — your feedback helps us provide you the tools you need.

Finally, take some time to recognize the Soldiers in your ranks who are doing a great job for safety. Through the end of this month, GEICO will accept nominations for its Military Service Awards Program, which highlights the contributions of service members in accident prevention. One enlisted member from each of the service branches will be honored, so make sure your safety warriors have a chance at the prize.

As the seasons change and we move into the new fiscal year, make safety a priority for you and your Soldiers. Take corrective action when necessary, and always let them know you care. Thanks for what you do every day, and remember Army Safe is Army Strong!

MICHAEL EYER
Command Sergeant Major
U.S. Army Combat Readiness/Safety Center

THE BLIND SIDE

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

A gray-brown shape swiftly paralleled the Ford Explorer, flashing between tree shadows and shafts of moonlight streaking between the limbs. "What is it," thought Spc. Brock E. Johnson as he quickly glanced left and then focused on the road again. He'd never driven this road. This was something he hadn't anticipated or planned for.

There was a car following him, its headlights bathing the darkness around his SUV. Whatever was on his left was still moving alongside, just off the side of the road. "What will it do," Johnson wondered as the half-visible phantom plunged through the darkness to his left.

Suddenly, two flashes — bright and quick as gunshots — startled Johnson, who just caught them in the corner of his eye. They were reflections from a deer's eyes as it turned and ran at him. Instinctively, he jerked the steering wheel to the right, but he couldn't get away. With a thud, the deer smashed into the left-front fender. The Explorer jolted toward the right, its headlights illuminating the trees off the side of the road.

The impact stunned Johnson as the SUV veered onto the right-hand shoulder, rubber tires searching for — but not finding — traction on the rain-soaked grass. The ground abruptly dropped away and the Explorer plunged into a ditch. The impact jarred the Explorer and, much more importantly, Johnson, who was helpless behind the wheel. The Ford's front end suddenly went up into the air, rebounding from the ditch's bottom.

Johnson's seat belt — particularly his shoulder strap — bit deeply into his skin, locking him in place against the seat as the air bags inflated around him. Then a tremendous crash jarred the Explorer as its right-front bumper slammed into a tree. The violent impact tore away the Explorer's right-front tire and fender. Still moving, but unstable from its collision with the tree, the Explorer began to overturn. Stunned, Johnson felt the vehicle rolling over, followed by sounds of metal grinding against the ground and windows shattering.

The Ford continued rolling. The roof crushed down upon the top of Johnson's seat, damaging two discs in his neck and dislocating his left shoulder as it forced his head and chest down and to the right. Trapped beneath the collapsing roof and the steering wheel jammed down against his legs, he sprawled awkwardly across the center console. With one final jolt, the Explorer's mangled hulk came to rest on its wheels — at least the three that still remained. The woods again became silent, both in reality and in Johnson's mind. He was now unconscious.

The car that had been following Johnson pulled to the side of the road. The driver, an off-duty nurse, hurried to the wrecked Explorer. The crushed

DID YOU KNOW?

According to the Insurance Institute for Highway Safety, there are an estimated 1.5 million deer-vehicle collisions annually in the United States, causing more than 150 fatalities and $1.1 billion in property damage. These collisions become more frequent from October through December due to the deer migration and mating season.

roof had jammed the driver's door and she could not reach the injured Soldier to help him. She quickly called 911.

As the darkness began to fade from Johnson's mind, he heard the nurse telling him to remain calm. She asked if he had Family she could call. Minutes passed and then he heard not only her voice, but also those of the emergency responders moving around his vehicle. His mind finally began to clear. With relief, he realized he was still alive; he had survived this unexpected assault. His mind went to his Family.

"When I woke up, I was thinking about my wife and my kids," Johnson said. "I thanked the Lord I was alive and I thought about my Family and what life would be like for them if I didn't make it out of this crash."

The nurse called Johnson's wife, who hurried the eight miles from their house to the accident site. By the time she got there, rescuers had already cut off the Explorer's doors to get to her husband. She was shocked when she saw the damaged vehicle and grateful her husband was still alive.

She watched as a fireman broke the window out of the Explorer's rear hatch and then crawled inside. As the fireman kicked against the inside of the hatch, other firemen pried it from the outside to get it open. Handling him carefully, the fireman removed Johnson and took him to a local hospital for treatment. Because he'd been unconscious, doctors performed CT scans to see if there were any brain injuries. Fortunately, there weren't. But it could have been a whole different picture if he hadn't been wearing his seat belt. In the moment they were needed, the Explorer's safety features — front and side window curtain air bags and seat belts — did what they were designed to do.

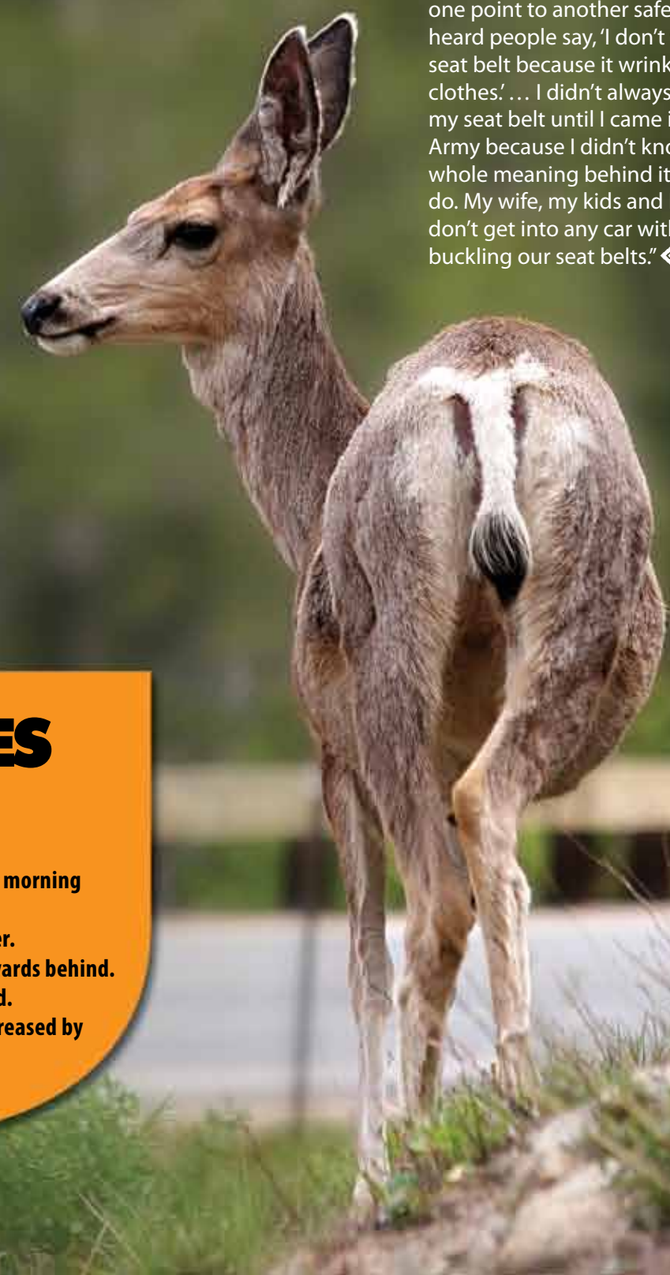
"You think about paying all this extra money for these safety features, but they really do work," Johnson said. "I did have my seat belt on. It was still intact and connected."

In fact, he had to disconnect his seat belt so the fireman could remove him from his seat. But at least he was still in the seat. He'd avoided being slammed head-first into the windshield or ejected through a window as the vehicle rolled. And while the Explorer was totaled, he wasn't — which is the whole reason why passive safety features like seat belts and air bags were designed.

"I thank God I made it through and get to live a little longer and watch my kids grow up," he said. "I want to keep living life to the fullest."

From that experience, he speaks about the value of wearing seat belts — not only to the Soldiers involved — but to their Families should an accident happen on the road.

"The most important thing is that you don't want your Family to go through that hard time of losing you over something as little as clicking your seat belt," he said. "You've got to think about all the different factors involved in getting you from one point to another safely. I've heard people say, 'I don't wear a seat belt because it wrinkles my clothes.' … I didn't always wear my seat belt until I came into the Army because I didn't know the whole meaning behind it. Now I do. My wife, my kids and I — we don't get into any car without buckling our seat belts."



TIPS FOR AVOIDING DEER STRIKES

The following safety tips are provided courtesy of State Farm Insurance:

- **Be aware of posted deer-crossing signs. These signs are placed in known active deer-crossing areas.**
- **Be aware that deer are most active during the evening between 6 and 9 p.m. (Also, be alert for deer in the early morning hours between 4 and 7 a.m.)**
- **At night, use high-beam headlamps as much as possible to illuminate the sides of the road where deer can linger.**
- **Be aware that deer often move in packs. If you see one deer, there is a good chance several more are just a few yards behind.**
- **Do not rely on car-mounted "deer whistles." Studies have shown deer are not affected by this deterrence method.**
- **If a collision with a deer seems inevitable, it may be best not to swerve. The risk of personal injury is greatly increased by swerving, which can place you in the path of oncoming vehicles or cause you to lose control.**

ROAD RULES

POV TOOLBOX

The Privately Owned Vehicle (POV) Risk Management Toolbox is a tool for commanders, Leaders, supervisors and subordinates to use in their organizations. The toolbox contains best practice examples and lessons learned that can be used as accident prevention measures when developing a unit POV safety program.

Give It a Test Drive Today!

https://safety.army.mil/

OVEREXCITED and UNDERTHOUGHT

CHIEF WARRANT OFFICER 2 SCOTT B. SHAFER
Nomad Troop, 4th Squadron, 3rd Armored Cavalry Regiment
Fort Hood, Texas

Dangling upside down over a pool, strapped to a litter and hanging by a belt — this wasn't a situation anyone would have imagined when we reserved the Leadership Reaction Course (LRC) for training.

The LRC can be a safety officer's risk assessment nightmare. Obstacles with old boards, water, half a rope and a time limit are just some of the factors every LRC contains. Let's face it; the course puts you under stress to complete a task you don't have the proper equipment to do. In situations like this, there is always a chance someone is going to get injured. Sure, we do risk assessments, develop and implement controls and so forth. However, on a course like that, it's impossible to cover all your bases. Murphy's Law always applies.

On this day, the obstacle was two platforms separated by a pool of 4-foot-deep water and connected by an elevated wire. The goal was to move a person on a litter across the wire from one side to the other. It seemed like a simple enough task for five combat veterans.

The Soldiers made the decision to strap their "injured" comrade to the litter to minimize movement and prevent further injury. After all, that's how we do it. Knowing that no one has the strength to hang from a wire and hold a litter with a person on it, they decided to use their belts. So, they took off their belts and strapped them to the litter and wire. The plan was to slide the Soldier and litter across the wire.

As a safety officer, I watched all this ingenuity happen before my eyes. I'd done the risk assessments, I had medics on hand and I believed in my guys. However, for a split second, I thought to myself, "What if the belts don't hold?" Then I looked at my belt and decided it was sturdy and had a good buckle, so it should hold, right? Wrong!

They might have held if one of them hadn't been a Velcro belt. How could these experienced Soldiers not realize a Velcro belt wasn't going to hold a 200-pound person? I believe it was the stress of the time limit that allowed them to overlook this detail. Well, halfway across, the Velcro gave way, leaving the injured Soldier dangling over the water while still strapped in the litter. Eventually, the weight became too much for the remaining belts to hold and the Soldier dropped head first into the drink.

The Soldier sank to the bottom of the pool and his partners jumped in to save him. Before they could even get their shoelaces wet, the Soldier popped out of the water and shouted, "Freedom!" Everyone had a good laugh and we continued training.

Lessons Learned

In the end, the events were completed without a single injury and everyone had a new war story to tell. Still, I couldn't help thinking, "What if this situation had gone wrong? What could have been done to prevent this close call?"

I could have reduced the risk by making the Soldiers stick to the plan. After all, what good is having a plan if you don't use it? For this obstacle, the Soldiers used unauthorized materials to construct their "zip line" litter transport. If they were made to stick to the materials provided, a Velcro belt would have not even been in the equation and the incident never would have happened.

There's a saying that goes something like, "A bad decision is better than no decision." That may not always be the case when it comes to safety. If these Soldiers had taken a moment to think their decision through, or the supervisors had stopped the training to correct their actions, they probably could have devised a better plan. Slowing down and using good judgment can complete a task faster with better results than making a rash decision and failing.

The bottom line is we need training and, sometimes, that training has risks. The team took a risk by using their belts, which weren't part of the authorized equipment to complete the task. Why did I let it go? I don't know and I can't go back and change it. However, I can share my story and maybe prevent it from happening again.

BIG TROUBLE AHEAD

ANONYMOUS

As I ruffled through a moldy logbook and found my frantic handwriting, the events of that day came back in a vivid rush of memories. It was a perfect fall morning. I was a relatively new UH-1 pilot in command (PC) of three months — just 11 months out of flight school — with about 500 helicopter flight hours under my belt. Not bad for a "butter bar" back then.

The Mission

Our mission was to fly an Air Force officer from a radar site on the West Coast to a new gunnery range and return. I elected to fly from the left seat since my pilot was a new warrant officer fresh out of flight school. We picked up our passenger and were on our way to the range, expecting an uneventful flight.

While the Air Force officer conducted his business at the new range, my pilot, crew chief and I waited around the Huey. Our weather update was "clear blue and 22" — great flying weather.

The Return Trip

The mission took longer than expected. We picked up our passenger and immediately departed the range at maximum range airspeed en route to the refueling point, which was close to an hour away.

The refueler obviously wasn't pleased with our delayed arrival. However, he proceeded to top off our fuel bladder with cold gas and I rewarded him with the only thing I had, a stale Meal, Ready-to-Eat, or MRE.

By the time we departed refuel, we were two hours behind our originally scheduled flight plan. The fast-setting sun in front of us gradually hampered our vision, making it extremely difficult to navigate the terrain. (Reliable navigation equipment capable of working in this type of terrain was virtually unheard of in a table of organization and equipment unit at that time.)

Just One Thing After Another

Nightfall quickly approached. I desperately attempted to tune in the VHF omni-directional radio range — our only available navigation aid — at the destination Air Force base. No such luck. Suddenly, a freezing-cold breeze swept through the cockpit, causing the windows to fog. Fortunately, our Huey had an excellent defogging system that corrected the problem within seconds.

We then realized we had just crossed through an unforecasted 20 F temperature inversion, which meant we were likely to hit trouble ahead. I immediately tried to contact flight following for a weather update. No reply. I tried all of the flight-following agencies for which I had frequencies. Nothing! Now my floor microphone was stuck in the transmit mode. When I loosened my shoulder harness and bent over to try to fix it, my kneeboard, along with my radio frequency cheat sheet, snapped off my leg and fell into the chin bubble between the pedals.

All the sudden, it sounded as if we'd been hit by a truckload of marbles as hail, sleet or large raindrops pounded against our windshield. I reached up to turn on our windshield wipers, but neither of them worked. I figured this was supposed to be my final wake-up call. One thing after another was happening as our once uneventful flight was becoming entirely too eventful.

I looked toward the western horizon and, with what natural illumination remained, noticed an ascending bed of ground radiation (or evaporation) fog combined with a descending overcast. It was as if we were flying directly into a tunnel. I told my pilot to initiate a right 180-degree turn and find a place to land. As we rolled out back to the east, total darkness surrounded us. The fog was quickly swallowing what few visual ground references we had.

I now realized we were in big trouble. With all the previous commotion, I knew we were lost and I was running out of ideas. I thought of all the times my commander, instructor pilots and safety officer had cautioned me, "Don't ever get into a situation where you are forced to go into instrument meteorological conditions (IMC)." Those words now pounded inside my head.

I instructed my pilot to circle to the right and remain clear of the surrounding clouds while I tried to radio approach control. After several attempts, I finally established contact and requested clearance for radar vectors to the precision approach radar (PAR). They asked if I was declaring an emergency. Frustrated and ignorant of my true situation, I responded, "Negative." Approach control gave us a transponder squawk and told us to maintain present position until positive radar identification was established.

Barely able to see the ground, my pilot continued circling to the right while I struggled helplessly through every instrument publication I had onboard. Without warning, I felt the Huey shudder and begin to sink toward the ground as my pilot unwittingly slowed to 15 knots. I yelled at him to increase power and keep the airspeed at or above 40 knots.

Our wait for air traffic control clearance seemed like an eternity. I couldn't help but think we were near "Chinook Valley" — a name given to the area by aviators after a CH-47 crew, trying to avoid IMC, got tangled in 350-foot-tall power lines, killing all onboard. I also knew we had to be just south of a known area of heavy wires that had already taken the lives of several Army aviators. Most of them either crashed into the mountains or were strung up by one of the many wires in that area while trying to maintain visual meteorological conditions.

Suddenly, I noticed our rotating beacon and position lights reflecting off the clouds. I reached up, turned off the lights and immediately saw a flashing red light as we passed within inches of a large smokestack. I grabbed the flight controls and began a climb while yelling out

instructions to my pilot. I then realized my floor microphone was still stuck, so everyone tuned to the approach control frequency was well aware of how I felt about the situation.

We were completely "in the soup" as I requested priority handling. Approach asked me again if I was declaring an emergency. This time, without hesitation, I acknowledged, "Affirmative!" They immediately responded with a heading and altitude to intercept the PAR. Then vertigo hit me like a ton of bricks.

The constant circling to the right gave me a serious case of spatial disorientation. I never in my life fought as hard as I did then against this powerful physiological effect. My brain was insisting I was in a hard left turn, while my attitude indicator was telling me we were straight and level.

I remember shaking my head from side to side, hoping to cage my inner ear. It didn't work. I kept yelling at myself, "Fly the instruments; rely on your instruments!" I swear I could hear my Initial Entry Rotary-Wing instrument instructor telling me, "Believe in your flight instruments and know how to use them because one of these days, they'll save your life." Sweat poured down my face despite the fact it was 65 F in the cockpit.

I gradually began to overcome the vertigo and was able to focus on all the instruments. As the controller vectored us onto final approach, I started to calm down for the first time in almost two hours. I was totally committed to getting us out of this mess and even the rain dripping on the top of my helmet (from either the greenhouse or overhead vent) wasn't going to make me lose my concentration on this PAR. We heard a specialist from the flight-following agency trying to contact us. We ignored him, as we weren't sure which of our four radios he was calling on, and the preset channels weren't working correctly.

> "It's **AMAZING** how a relatively smooth **MISSION** can **RAPIDLY** and without warning **TURN** into a **DANGEROUS** situation."

Almost Home

I took a deep breath and mentally prepared myself for the PAR. My attention was now devoted to the controller's instructions.

It was the darkest night I could ever remember. The rain continued to pound the windows and fuselage. I told my pilot to look outside and take the controls once he could see the runway. Just as he acknowledged the instructions, a bright orange light lit up the cockpit — a master caution! My stomach felt as though it had dropped through my lap and into the chin bubble, where my kneeboard still lay.

The pilot looked down at the caution panel lights and announced a 20-minute fuel light. The fuel gauge indicated about 200 pounds remaining. Up to this point, fuel had been the last thing on our minds. I now realized we didn't have enough fuel for a missed approach. Again, I asked approach for the current altimeter setting (barometric pressure) and convinced myself that, if necessary, I would descend below decision height.

Air traffic control said, "On course, on glide path." So far, this had been the best PAR I had ever flown — and it had to be. My pilot saw nothing as we descended from more than 50 feet above our decision height through fog below. The only thing I could do was slow to 30 knots while descending at 200 feet per minute.

Within seconds, I experienced the most beautiful sight I had ever seen. The big, bright, high-intensity runway lights glowed throughout the entire cockpit as they guided us onto the runway. This caused us to partially lose our night vision, but, at this point, we didn't care. We turned on the beacon, position and landing lights and, believe it or not, the pilot windshield wiper began to work as we headed to base operations. The fuel gauge indicated 100 pounds. "Gas hog," I thought to myself.

Back on the Ground

While we were shutting down, our passenger (frankly, I had almost forgotten we had a passenger) jumped out of the cargo door and thanked us a dozen times. He then sprinted to base operations. It was obvious he couldn't have cared less about not making it back to his original destination. I never saw him again.

As the rotor blades came to a stop perfectly parallel with the tail boom, our crew chief yelled out, "I owe you a six-pack of beer, sir." We all laughed off some emotion and stress. I then jumped out of my hot seat, hugged our Huey, kissed the ground and looked up into the black, stormy skies to thank whomever was watching over us.

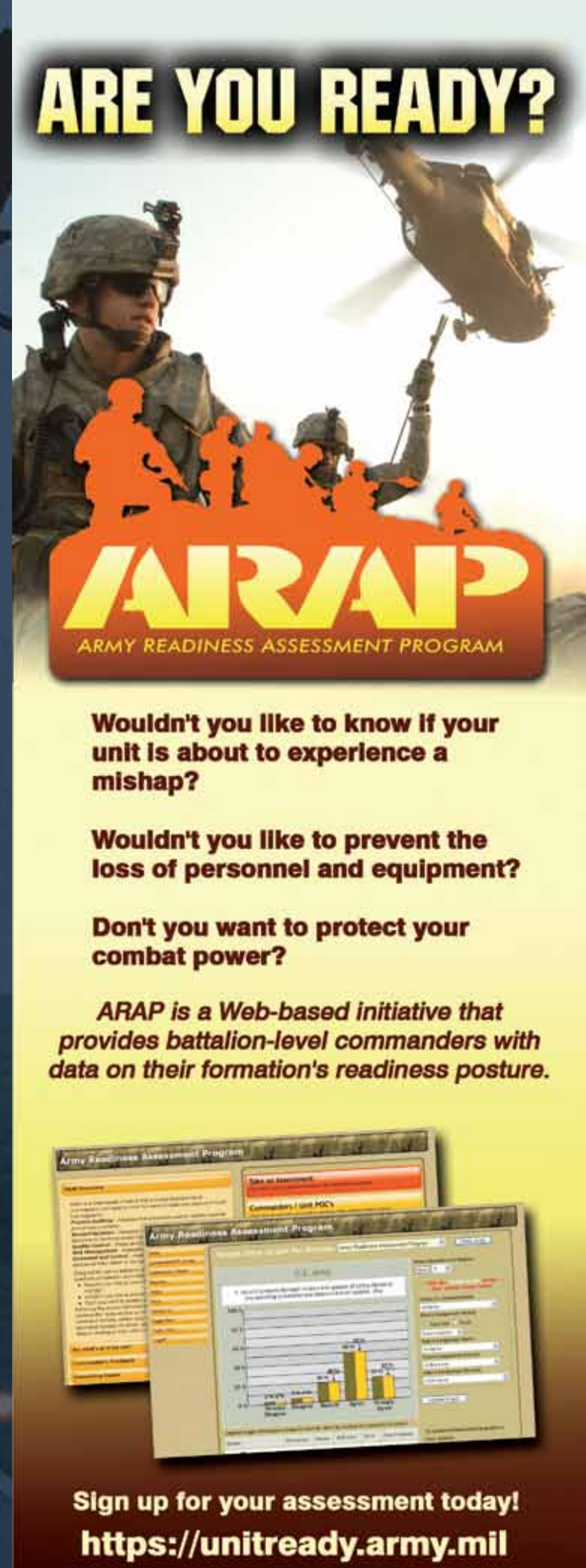
Looking Back

It's amazing how a relatively smooth mission can rapidly and without warning turn into a dangerous situation. We can all learn from the events that can lead to a disaster. I wish I could have shared this story years ago, but, at that time, I was afraid my commander and standardization pilot would ground me forever. As a result, my pilot, crew chief and I swore this mission to secrecy and I didn't dare log the .6 hours of actual instrument time into the aircraft logbook.

Since that mission, I have accumulated an additional 4,000 military flight hours without a single incident. I have encountered several unforecasted inadvertent IMC situations in other military aircraft (mostly at night under night vision goggles), but I was always prepared with preplanned recovery procedures.

I've gone over the details of this mission a hundred times in my mind, trying to determine what I should have done better or differently. I don't think there is a specific school solution for this situation, but there are several points to ponder. The Army has implemented many different safety programs over the years that have obviously made a significant impact on our improving safety record.

When this mission was flown, minimum crew rest policies were established but rarely enforced; blind cockpit procedures and mandatory synthetic flight training systems requirements were little to none; hood time was minimal; actual instrument flight was virtually unheard of for Army helicopter pilots; and navigation equipment was very limited. And there was no such thing as risk management, risk assessment, a hazard communication program, a cockpit or crew coordination program, a mission briefing officer or mission briefing forms. Yes, we've come a long way. I, for one, don't wish for the good old days one bit.



The Salt Marsh

CHIEF WARRANT OFFICER 2 COREY HAZELWOOD
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North Carolina Army National Guard
Morrisville, N.C.

On a breezy January morning, two friends and I set out to duck hunt in the salt marshes of the North Carolina coast. I never imagined this trip could be my last.

After driving more than an hour, we arrived at the Swan Quarter National Wildlife Refuge. From there, we took a 30-minute boat ride, anchored and completed the 300-yard walk to our hunting spot. After a couple of hours of watching hundreds of ducks — but firing very few shots — one of my friends and I decided to walk around and hunt birds that had landed elsewhere. I left my blind bag behind, carrying enough shells to hold me over so I could fill my limit.

About 4:30 p.m., I shot my last bird, which filled our bag limit of 18 ducks. When I went to pick him up, I stepped into a deep and rather soft spot of muck and fell head-first into the water. I was a little damp, but I didn't give it another thought. That step, however, started a chain of events that turned an awesome hunt into a life-threatening situation.

By now, we were nearly 600 yards away from our original location. About halfway back, I started to cramp and vomit. I had been punishing my body all day, walking on my knees the majority of the time to remain hidden from the ducks. Unfortunately, I neglected to keep myself hydrated — and now I was paying the price. From that point on, I had to stop frequently. The last 300 yards felt like an eternity and darkness was fast approaching.

By the time we arrived back at our original location, my tank was on empty. The cramps were incredibly painful and I didn't have anywhere dry I could lie down and massage them out. We were also standing in the muck, which made stretching impossible. I sat down for a few minutes, drank a soda and ate a few peanut butter crackers, but then the frequency of my vomiting increased. We still had another 300 yards to go to get out of this watery labyrinth and back to the boat, so I finished a second soda and started to push through the darkness. None of our cell phones had reception and my hunting partners knew they had to get me out fast.

By the time we got to the boat, the temperature had dropped to about 19 F and the wind was nearly 30 knots. I got on the boat and tried to warm myself, but to no avail. The cramps were excruciating and I was still vomiting. To make matters worse, the spray from the brackish water turned the outside of my chest waders into a sheet of ice. My gloves were also wet from one of many falls, and the fleece inside was frozen.

High winds blowing in our face slowed our return, turning a 30-minute boat ride into nearly a two-hour ordeal. When we finally arrived at the boat ramp, I was starting to show signs of hypothermia. I was cramping so badly I had to be physically lifted off the boat and into the truck. My hunting buddies helped me out of my wet gear and into fresh clothes from the dry bag we stored in the truck. Now that I was finally out of the elements and in the heated truck, I started to warm up.

This hunting trip nearly cost me my life, and the next few days showed it. The severity of my condition became apparent the following day when I had to be lifted out of bed. I couldn't even stand on my own for three days.

We made many errors in judgment and planning. Although I was in good physical shape (I had just returned from a year-long deployment in Iraq, where I spent the majority of my off-duty time conditioning in the gym), I had not hydrated for almost six hours while I was hunting. I had brought something to drink, but it did me no good sitting 600 yards away. We also failed to take the dry bag with us and ensure we had some means of communication in case of an emergency, even though we knew the conditions were going to be hazardous.

This experience taught me the importance of planning and the dangers associated with blatantly disregarding the controls put in place. Although our planning was thorough, we failed to implement our controls to reduce the hazards. This trip changed us from being young, daring sportsmen who thought they could handle anything to methodical and, at times, anal-retentive waterfowl hunters. Planning and properly implementing controls to mitigate risk could have eliminated the problems we faced. I'm just thankful I was able to learn from my experience and live to tell about it.

I Almost Shot Off My Face!

CHIEF WARRANT OFFICER 3 JAY A. BACHMAN
B Company, 2nd Battalion, 159th Regiment (Attack Reconnaissance)
Illesheim, Germany

Back in 1994, I was a new private assigned to my first unit at Fort Hood, Texas. I was away from home and didn't get back much during the holidays. In an effort to get me out of the barracks and away from the usual trouble young Soldiers get into, my squad leader invited me to go hunting. I told him I'd never hunted before, but I had done plenty of fishing and camping when I was younger. Wanting to try something new, I accepted his offer.

Since we were at Fort Hood, I was required to attend a mandatory hunter safety course before I could hunt on post. I figured it was a good idea, so I went in with an open mind and actually learned a few things about hunting. A few weeks later, we scheduled a Saturday morning to go out via range control to shoot us a few deer.

I didn't own a rifle, so my squad leader loaned me one — an old Czech sniper rifle that shot .223 rounds. He explained the safety, how to use the scope and how to safely load and unload the rifle. After a short HMMWV ride to the north-side training areas, I was told where to find my assigned treestand.

As I climbed into the treestand, I was really excited about the opportunity to shoot my first deer. I finished setting up my thermos of coffee and the food I brought to snack on. Once I scoped out the area for deer, I decided to load my rifle and put it on safe so I was ready to take the shot as soon as a monster buck presented himself. Well, a few hours passed and I still hadn't seen anything but an armadillo (which I actually considered taking a shot at to kill the boredom). I must have loaded and unloaded the rifle three or four times to break the monotony of sitting there by myself with nobody to talk to.

Then I did it! No, I didn't take down my first trophy deer on my first day of hunting. I must have dozed off with my finger in the trigger guard of a loaded gun. You can guess what happened next. I actually shot a round about three inches from my face and put a bullet hole in the bill of my hat and the top of the treestand. That woke me up for sure! I thought I was too smart and responsible for something like that to happen. I then wondered if my death would have been ruled a suicide or hunting accident. Heck, I was 19 years old and knew I had too much to live for.

About an hour later, the HMMWV returned to pick me up. All the guys asked if I'd shot a deer. They'd heard the gunshot from their treestands and thought I'd bagged one. I was too embarrassed to tell them that I'd almost killed myself by being incredibly stupid, so I just said I had a poor shot and missed a small deer. Until now, I've never told anyone about the day I almost shot off my face.

> "I **THOUGHT** I was too **SMART** and **RESPONSIBLE** for something like that to **HAPPEN.**"

TEN COMMANDMENTS OF FIREARMS SAFETY

Accidents can be greatly reduced by following the Ten Commandments of Firearms Safety.

1. Always keep the barrel pointed in a safe direction.
2. Treat every firearm with the respect you give a loaded weapon.
3. Be sure of your target and what is in front of it and beyond it.
4. Keep your finger outside the trigger guard until you are ready to shoot.
5. Check your barrel for obstructions and only carry the proper ammunition for your weapon.
6. Unload all firearms when not in use.
7. Point a firearm only at something you intend to shoot. Avoid all horseplay with a gun.
8. Don't run, jump or climb with a loaded firearm. Never climb a fence or jump a ditch with a loaded weapon. Never pull a weapon toward you by the barrel.
9. Store firearms and ammunition separately and safely. Store them in a secured location away from the reach of children.
10. Never consume alcoholic beverages before or while shooting.

In an effort to reduce off-duty accidental firearms incidents, the U.S. Army Combat Readiness/Safety Center has developed a new interactive online tool called Firearms Safety Techniques. The site is available for Soldiers, Families and Civilians at https://safety.army.mil. Give it a shot today!

THE BITTER Pill

DR. HARRIS R. LIEBERMAN AND CHRISTINA E. CARVEY
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Natick, Mass.

A lot of Soldiers take dietary supplements. Big pills, little pills, green pills, blue pills, bars, powders and drinks — you name it and you or your buddies have probably taken it. "So what?" you ask. After all, AAFES, supermarkets and drug stores couldn't sell supplements if they didn't work or weren't mostly safe, right? Guess again. They can sell any supplement they want — whether it works or is safe.

What You Need to Know

What the stores, magazines, packaging and Internet won't tell you is dietary supplements are barely regulated by the government. Companies can say things like, "Stimulates fat burning" or "Speeds recovery and enhances performance," but they never have to prove these claims are true. Of course, they're not supposed to make false or misleading statements, and the government can, in theory, fine them and make them stop — but only if they catch them.

Do They Work? Are They Safe?

In reality, most supplements don't work as promised, and a few are downright dangerous. We know you don't want to hear that and will probably ignore what doctors, nurses and scientists say. We also know you want to get every possible advantage so you can work and play harder, run farther, bench press more, have more energy and max out your physical training (PT) test.

We don't blame you. After all, who wouldn't want those things? Especially when the ads and packaging tell us we can get stronger and faster simply by taking a pill or drinking a protein shake. Well, remember that old saying — if it sounds too good to be true then it probably is? Bingo!

Let's Get Specific

What about protein powders? A lot of Soldiers take protein powders. If you want to take them, too, we're not going to stop you. But we will tell you that using protein powders after a workout provides way more protein than your body needs for recovery. Instead of using the extra protein for building or repairing muscles, your body just burns it up. With the outrageous cost of some of those products, it's almost like you're burning money!

Drinking one or two cups of plain or chocolate milk (cow or soy) after a workout gives you all the protein and carbohydrates you need for recovery and costs a lot less. So you decide; it's your money. What about for the rest of the day? If you're ripped — or you're trying to get there — do you need more protein than a couch potato? Sure. But you still don't need a supplement. There's plenty of protein to meet your needs in the average American diet.

What about the vitamins and minerals all your buddies take? Sorry, but most healthy young Soldiers don't need those either. Some women may need extra calcium or iron. However, extra iron can actually hurt some men.

If you still insist on taking supplements, be especially careful of those found on the Internet. Some contain impurities and extra ingredients that aren't always listed on the label or website, including drugs that can cause you to fail your Army drug test or seriously harm your body. Right now, you could be taking these things without even realizing it.

What is Smart and Safe?

Carbohydrate beverages are good for helping you run farther and faster. But don't overdo it; these drinks have a lot of calories. If you don't have enough energy, try getting more sleep. Also, don't smoke. In addition to potentially giving you cancer and wrecking your lungs, smoking hurts your athletic performance. It'll slow you down when you run and decrease the rate at which you build muscle.

We wish we could give you a list of great dietary supplements to help you be healthier, have more energy, do your job better or perform better on the PT test, but we can't. Just remember, we don't get paid extra if you do or don't take dietary supplements. So you decide who to believe — us or the folks who get richer when you fork over your hard-earned bucks!

Check out the U.S. Army Combat Readiness/Safety Center's Facebook page for the most recent news stories, videos and photos by the Army's premier safety professionals.

ARMY SAFE IS ARMY STRONG

Speak Up

CHIEF WARRANT OFFICER 3 RICHARD GRIFFIN
63rd Aviation Group
Kentucky Army National Guard
Frankfort, Ky.

Some years ago, I learned the value of speaking up for what's right, regardless the consequences. Early in my career as an Army aviator, I was told to close my pie hole and open my ears so I might learn something. I was careful not to judge other pilots' mistakes harshly because someday I might do something less than brilliant. Whether we admit it, we've all done something stupid.

My attitude changed when I had the unfortunate circumstance of being in the field with a unit that suffered a catastrophic Class A accident with multiple fatalities. The accident involved a single aircraft with a full crew and several troops onboard. Only one passenger and the pilot survived.

The subsequent investigation determined the primary contributing cause of the accident was "hot dogging" the aircraft. The pilot in command (PC) was leaving the Army soon and wanted to give the Soldiers in the back a ride they'd never forget. Unfortunately, they never got the chance. The aircraft's radar track showed it making radical heading changes, or bank angles, and traveling at an excessive speed before it struck a tree and crashed.

The devastating impact that tragic and unnecessary accident had on the unit and the deceased Soldiers' Families was fresh in my mind when I took my next assignment a couple of years later. I was at the Joint Readiness Training Center (JRTC) in Fort Polk, La., working as an observer/controller for a sister company from our battalion. My duties included riding in the aircraft jump seat with a radio to monitor the aircraft in flight, ensuring compliance with JRTC rules of engagement.

One day, I was told to fly in the jump seat with a PC I knew well and considered a friend. His career was rocky from the start. He'd had his PC orders pulled several times and was passed over twice for promotion to chief warrant officer three. He also had a bad reputation for being stubborn and refusing to follow orders, qualities that directly contributed to his problems at work. Despite these setbacks, he finally reached retirement, dropped his paperwork and began counting down his last few months in uniform.

> "I'll **NEVER** know for **SURE** if I did the **RIGHT THING** that day or **PREVENTED** an **ACCIDENT** from **HAPPENING** sometime **LATER.**"

The pilot (PI) that day was the polar opposite of the PC. A staff captain from the battalion, the PI had a meek personality and little flight experience. The PC sensed this and began teasing and intimidating the captain as soon as we got in the air. He was going to show him how to really fly a Black Hawk.

Keeping his promise, the PC, who was on the controls, became increasingly reckless. He was flying low and fast and banking the aircraft excessively, so much so that I had to grab my seat and hold on for the ride. We were behind on the map and flying fast on the confined JRTC real estate. At one point, we overflew a running aircraft at less than 100 feet. He quickly became autocratic and ignored complaints from the crew. He just laughed us off as a bunch of whiners.

After the flight, a crew chief went to the standardization pilot (SP) to complain about the PC. The SP informally interviewed all the crewmembers, and the PI and one crew chief corroborated the other crew chief's statement, but with less forceful language than they'd used in flight. The SP then came to me and asked point blank if I thought the PC had been unsafe. I hated to dime out my friend because doing so would likely mean the end of his flying and our friendship.

I decided, however, the consequences of not speaking up were much greater and could be permanent — not just for the PC, but for the crew and passengers on his aircraft. I admitted I thought he was unsafe and, as I predicted, the PC was grounded and never flew in the Army again. He confronted me later about what I'd said to the SP. I told him the truth, but he didn't agree and we haven't spoken since.

I'll never know for sure if I did the right thing that day or prevented an accident from happening sometime later. Maybe nothing ever would've happened, but I felt the potential cost of not speaking up was too high. We have a small margin of error in our line of work anyway, and no one should ever be allowed to court death under the guise of fun.

The Six P's

STEVE KURTIAK
Qinetiq North America
U.S. Army Combat Readiness/Safety Center
Fort Rucker, Ala.

If you've ever screwed up as a Soldier, chances are some crusty NCO has "educated" you on the pitfalls of poor planning.

It Was One of Those Days ...

I'd just finished loading my dirt bike onto my trailer when I noticed it was cooler than the weather forecaster predicted. That was no big surprise. I'd often wondered how much those guys got paid to guess at the weather every day. Anyway, the temperature was in the high 20s when I got to the track, signed up, unloaded the bike and began to gear up for practice. It was pretty chilly, so I wore a sweatshirt beneath my chest/back protector. What I didn't take into account was my hands. I didn't have cold-weather gloves (motocross is a warm-weather sport, right?). I figured I would just "suck it up" and ride with the gloves I had.

An Unexpected Delay

I finished the first practice run and rode back toward my truck. As I did, my wife was pointing at the half-flat left-rear tire. "No big deal," I thought, "I'll just change it." I usually packed a couple of plywood boards for my bike stand. Where were they? Then I remembered, "Crap — they're in my nice, warm garage next to my air compressor!"

A friend lent us a 4x4, which did the trick, and I got out a socket wrench to break the torque on the wheel nuts. Yep, they'd been "gorilla" torqued. I was able to bust a couple of them loose, but still had four to go. To help me, I convinced my wife to jump up and down on the handle while I held the extended socket wrench against the nut. She was so trusting, and this unapproved and ill-advised method worked (this time). Before I put on the spare, I checked the tire pressure. Yep — the tire hadn't been serviced. Fortunately, the guy to our left had an air compressor. Within a few minutes, the tire was on the truck.

Moto 1 — Into Racing — Almost

I got on the track, picked my spot at the starting gate and left the engine running. The starter held up the one-minute board and I grabbed a handful of throttle to clean the carb. Instantly, the motor died! I vigorously prodded the kick starter — but no luck. The plug was fouled, so I ran 100 yards back to the toolbox to grab a plug and wrench (at least I remembered to pack them) and lumbered back to the bike.

While I swapped the plugs, my wife held the bike. She was saying something about me not being prepared, and I was wishing I had a video of her jumping on that wrench handle for YouTube. When I finished, she had a pocket full of tools and I joined the race — two laps down!

Moto 2 — The Curse Continues ...

I picked my starting spot and waited for the moto to begin. The gate dropped and I launched from my starting position. I banged a couple of gears and could see two other riders in my peripheral vision. "Good hole shot," I thought as I steered around a two-bike crash in the first turn, rounded the second and entered the third turn. I stuffed the front wheel into the berm, trying to square the turn, but, instead, buried the front tire in the soft sand. After a short, painful trip over the bars, my left shoulder, head and trapped pinky finger stopped any further forward travel. By the time I was free, I found myself in the same place as during the first moto — last!

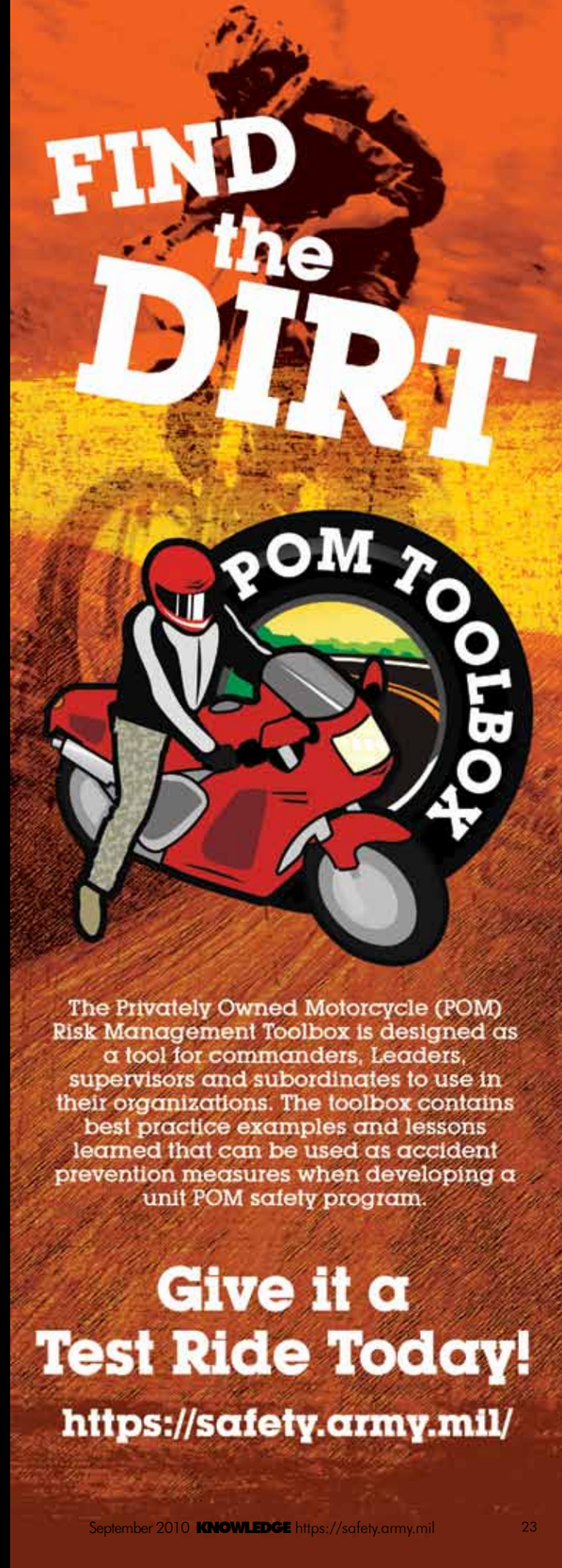
It Pays to be Prepared

This was the first race of the winter series and I approached it with a half-hearted attempt. I checked and started the bike the day before the race, but didn't pull the spark plug for a reading. I checked to make sure I had all my gear, but didn't consider the weather conditions. My hands got cold during the practice, making it difficult for me to operate the clutch, front brake and throttle. I had a warmer pair of gloves, but didn't pack them.

I didn't have all of the tools and equipment I usually take to the track. If I had, changing the truck tire would have definitely been easier. Unfortunately, having to change the truck tire caused me to miss the second practice session, which left me "guessing" at some parts of the track. A second practice session would have allowed me to commit more of the track to memory, something that is critical when it comes to jumps. A third-gear jump taken in second gear can make for a bad day.

As I sat there considering what happened, my mind drifted back to my old platoon sergeant at Fort Lewis, Wash. What was it he used to say to me? "Six P's, Kurtiak, six P's! Prior planning prevents piss-poor performance!"

There's no expiration date on my old sergeant's advice. Being properly prepared is the most important task you have whether you're gearing up to ride a bike or fight a battle.



Plan for the Unexpected

MASTER SGT. NATHAN YORK
300th Military Police Brigade
U.S. Army Reserve
Inkster, Mich.

The mission was to haul fuel from Al Kisik, Iraq, to the Kurdish city of Dahuk and conduct refueling operations for the 1st Motorized Transportation Regiment (MTR). This called for three U.S. M1025 converted gun trucks, two Iraqi army fuelers and four 7-ton cargo trucks to travel about 60 miles. The convoy was set to return that same afternoon along the same route with an additional 15 vehicles. One oversight on the return mission, however, would tarnish an otherwise successful movement.

Al Kisik is a small town nestled between Mosul and Tal Afar and has become the site where Iraqi military forces are trained and based to support sustainment and stability operations. Among these newly formed units stands the 3rd MTR. For the 3rd MTR — which was still in training and struggling with the growing pains of leadership development, equipment acquisition and Soldiers learning the most basic combat skills — this was its first real-world mission.

The pre-convoy briefing and preparation began at 0600, and the convoy rolled out the front gate just after sun-up. The ride to Dahuk went smoothly and, at this point, it appeared the planning was a complete success. Immediately following the refueling operation, NCOs and Iraqi officers began forming the Soldiers and vehicles for the return trip. The Iraqi leaders then organized the march order and gave pre-convoy checks and briefings. However, a few problems were left unchecked.

The size of the convoy, number of inexperienced drivers and unknown mechanical condition of the vehicles were not addressed in the pre-convoy checks and briefings. About 30 miles into the return march to Al Kisik, the convoy experienced its first mechanical failure — followed by another and then another. The Iraqi soldiers struggled to recover the vehicles as they broke down. At the same time, Iraqi leaders fought to control communication as the remainder of the convoy continued ahead, leaving drivers and broken vehicles along a 15-mile stretch of highway.

Eventually, all the recovery equipment was expended, but vehicles continued to fail. As a result, the return road march lasted four hours longer than planned. Fortunately, no lives were lost and injuries were limited to smashed fingers and minor cuts.

Lessons Learned

What caused a solid mission to go so unexpectedly wrong? Leaders failed to identify experienced drivers or conduct thorough pre-convoy checks and briefings on the expanded convoy. They also failed to ensure there were an adequate number of recovery vehicles accompanying the convoy should vehicles break down. Additionally, Iraqi junior leadership failed to control the convoy and communications. As a result, radio traffic quickly became cluttered with each breakdown.

There are several measures that can be taken to make convoy missions more successful, including:

- Pair experienced drivers with inexperienced co-drivers to use manpower more effectively.
- Provide radio communication training to reduce the chatter on the net.
- Tailor pre-convoy checks and briefings specifically for each and every convoy. Don't merely restate previous briefings and checklists.
- Plan to have the correct recovery equipment in the convoy — and in sufficient amounts — to recover possible losses.
- Ensure the unit maintenance plan accounts for extended mission times and vehicles are in proper working order before departure.

Ultimately, the mission was accomplished with all vehicles recovered. The lessons learned by the Soldiers and Leaders of the 3rd MTR that night proved invaluable as the unit began accepting missions to support U.S. and Iraqi forces throughout northern Iraq.«

DON'T MOVE THAT MAT

NATHANIEL PARADY
Joint Program Office - Mine Resistant Ambush Protected Vehicle
Stafford, Va.

Some Soldiers in Afghanistan may be jeopardizing their safety by removing an important piece of protective equipment from the latest variant of the Mine Resistant Ambush Protected (MRAP) vehicle. The Joint Program Office for MRAP has received reports that Soldiers are sometimes removing the blast-mitigating floor coverings from the MRAP All-Terrain Vehicle (M-ATV) in an attempt to make space inside the crew compartment for equipment or for more leg room.

In an effort to stop this practice, a Safety of Use Message was released to units in the field urging Soldiers to leave the floor coverings in place. In vehicle-level blast testing, the coverings have proven to reduce the risk of lower leg fractures by absorbing blast waves and lessening the pressure transmitted into the body. Removing the floor coverings can reduce a crewmember's ability to survive a blast.

The M-ATV was developed to provide Soldiers with enhanced off-road capability for the mountainous terrain of Afghanistan and has many safety and survivability features that assist them in performing their missions safely. In addition to the M-ATV, the blast-mitigating floor mats are used in Cougar MRAP vehicles. Consideration is also being given into adding the coverings in other variants of MRAP vehicles.«

THE BACHELOR PARTY

CHIEF WARRANT OFFICER 3 WILLIAM BUSH
1st Battalion, 291st Aviation Regiment
Fort Hood, Texas

There is nothing quite like giving a friend a final send-off before he ties the knot and enters married life. Back in 2003, when I was an enlisted Soldier stationed at Fort Hood, a buddy was about to get married. We weren't going to let that happen without one last bang-up party.

We got together and decided to take him to Austin after work that evening. It was a Friday (he was due to get married Sunday) and our platoon sergeant rented a 12-passenger van so we could all ride together. Having listened to my buddies brag about how much they were going to drink and party, I volunteered to be the designated driver. I wanted to make sure we all got back safely.

The platoon sergeant showed up about 7:30 that evening with the van and began picking up everyone. He saved me for last, since I lived closest to the highway entrance. Once I boarded the van, my designated driver duties began — especially since the guys in the back had already started partying. With 15 of us in the van, the back end swayed like a drunken sailor and nearly bottomed out with every bump. I gripped the steering wheel firmly, all the while wondering if the van could handle the weight.

I pulled into a gas station and everyone piled out. You should have seen the looks the other customers gave us. They were probably wondering how many people we'd managed to cram into that van. After hitting the bathroom, several of my friends bought more beverages before climbing back into the van. It was party time again, and the van's rear end bobbed and swayed as we drove toward Austin. When we got there, we had a blast. I monitored the other guys, making sure none of them got the bachelor into trouble.

It was about 4 a.m. when we decided it was time to head back to Killeen. Everyone else had passed out, so I rolled down my window to help me stay awake during the drive. The platoon sergeant was up front with me to ensure we made it home safely and had another set of eyes on

the road. About 30 minutes into the drive, he fell asleep and I started yawning. I guess I could understand it since we'd done a five-mile physical training run that morning and then worked all day.

I needed some serious countermeasures to keep me awake. I rolled down both front windows and started freezing the guys in the back so I could hear them complain, whine and babble for my entertainment. Still, I was starting to doze off and realized I'd overestimated my driving abilities, tired as I was. I took a long blink and was startled by the sound of the tires running over the chatter strip alongside the road. I woke up and saw we were headed toward the guardrail. As I steered back into my lane, I heard a comment from the rear of the van asking, "Are we there yet?"

Somehow, we made it safely back to Killeen. I struggled to stay awake as I dropped off my friends. Once that was done, I still had a four-minute drive to my house. It felt like the longest four minutes I'd ever spent behind the wheel.

My near-miss that night taught me a valuable lesson. If you're a designated driver, you have to do more than just stay sober — you also have to stay awake and alert. After all, it won't matter to the guardrail whether you're drunk or asleep. Either way, it can put your lights out — forever.

DROWSY DRIVERS

Driving exhausted is one way to increase your risks on the highway — and don't count on being lucky. According to the National Safety Council (NSC), after the sun has gone down, you're more than three times as likely to have a fatigue-related fatal accident. And you're not the only problem out there. According to the NSC, 60 percent of drivers admitted to falling asleep while driving on interstate-type highways.

Who is at the greatest risk? According to the NSC, third-shift workers and people who have long daily drives, unrecognized sleep disorders or are prescribed medication with sedatives are the most likely to have an accident.

So, how do you know if you're in danger? Watch for the following symptoms:

- **Eyes closing or going out of focus**
- **Persistent yawning**
- **Irritability, restlessness and impatience**
- **Wandering or disconnected thoughts**
- **Inability to remember driving the last few miles**
- **Drifting between lanes or onto shoulders**
- **Abnormal speed, tailgating or failure to obey traffic signs**
- **Back tension, burning eyes, shallow breathing or inattentiveness**

Here are some tips to help you finish your trip at home instead of the hospital.

- **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, as 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.**

TRAVEL RISK
TRiPS
PLANNING SYSTEM
https://safety.army.mil

ARE YOU AT RISK?

Find out before hitting the road. Use the easy, online TRiPS tool. Log on today!

SAFE WINTER OPERATIONS

CMDR. DAN BITTON
Multijurisdictional Law Enforcement Aviation Coalition
Winthrop Harbor, Ill.

For those civilian and military agencies that operate in cold-weather environments, winter adds dangers we must consider before launching.

Winter brings a combination of high moisture content and cold temperatures that pose a threat of engine, airframe and blade icing. During day and night operations, snow and ice become significant threats in many ways. Ice on a ramp, or ice or snow on a helipad during a rapid spool up or spool down, can cause the helicopter to yaw. Snow can lead to a whiteout during takeoff and landing. During night vision goggle (NVG) operations, a gradual increase in snowfall can lead to the pilot losing situational awareness and inadvertently flying the aircraft into terrain, obstacles or water. The pilot may also enter inadvertent instrument meteorological conditions (IIMC), resulting in loss of aircraft control.

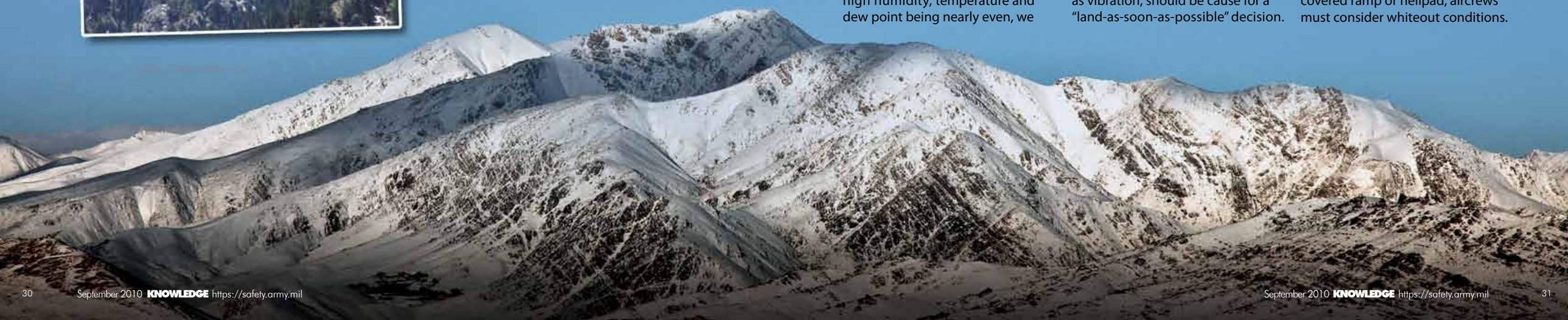
An awareness of these conditions, along with proper training, mission planning and crew coordination, may prevent flight crews from getting caught in these traps and, thereby, prevent accidents. The bad news is accidents involving loss of situational awareness and the resultant controlled flight into terrain (CFIT) are usually fatal. The good news is these accidents are typically avoidable.

At the risk of boring you with physics, the basics a pilot and all crewmembers should know about icing begins with the fact that icing can occur in conditions of high humidity when the ambient temperature is at or below zero C. Note, this does not require you to be in the clouds. Icing may also occur at higher temperatures during times of falling barometric pressure; so, for safety sake, let's just say that with temperatures at or below 5 C, high humidity, temperature and dew point being nearly even, we must be aware of the dangers of ice accumulation.

The primary effect of ice on a helicopter's blades is drag and loss of lift. During temperatures between zero and minus 3 C, ice will form on the leading edge from the root outward toward the tip, covering about 70 percent of the blade, as kinetic energy or the heat from the blade tip inboard typically inhibits ice accumulation in that area. This kinetic energy benefit decreases with temperatures below minus 3 C. Ice accumulating on a blade will cause vibration — from very slight to significant, depending on the type of blade and the rate of accumulation. The increase in the torque required to sustain level flight is an indication of significant accumulation. If in icing conditions, it is helpful to know that the faster the helicopter is traveling, the faster ice accumulates. Any indication of ice on helicopters, such as vibration, should be cause for a "land-as-soon-as-possible" decision.

Icing conditions also pose a danger to turbine engines. While many of our helicopters have engine anti-ice systems, which are meant for light icing, ice can accumulate at the throat near the first compressor stage. This in itself will not cause the engine to fail or flameout; it's the breaking of this ice and its being ingested into the engine that can cause damage and possible flameout. Engine manufacturers have conducted testing and found that as little as 350cc of water — at one time — into the engine can cause a flameout. Aircraft with particle separators are less susceptible to these engine induction hazards.

Perhaps a more common danger in winter is snow. Snow has caused many helicopter accidents during takeoff, level flight and landings due to whiteout conditions and loss of situational awareness. Before departing from a snow-covered ramp or helipad, aircrews must consider whiteout conditions.



In fresh snow, pulling just enough pitch to become light on the landing gear can cause the snow to blow away from the aircraft. Depending on the helicopter model, I teach our flight crews to use the chin bubble as a reference point, as it seems ground contact can often be seen through this window during takeoff and landing even when a snow cloud is obscuring the primary windows.

Off-site landings and takeoffs pose a problem of their own. In addition to the whiteout described above, landing in snow-covered fields can become a dangerous situation, as the snow may be masking uneven terrain or hazardous obstructions.

Similarly, landing on frozen snow can be dangerous, as well as the weight of the aircraft breaking through the frozen snow after landing. In both cases, the pilot in command (PC) may not be ready for slope situations that may exceed the helicopter's limitations. After landing in a field and sitting for some time, when departing, a skid may freeze to the ground and a dynamic rollover situation may occur. The best prevention during off-airport landings is to have a ground support officer assist in assessing the landing area and, in all cases, land slowly and treat each snow-covered landing and takeoff as you would a slope landing.

> "Any **INDICATION** of **ICE** on **HELICOPTERS**, such as vibration, should be **CAUSE** for a "**LAND-AS-SOON-AS-POSSIBLE**" decision."

The increased use of NVG requires us to be ever vigilant of light snow. While flying with NVG during light snowfall, the snow causes a slight increase in the graininess or amount of "visual static" in the goggles, thus allowing us to see through light snow. As we fly in remote country areas with few ambient light sources and during times of low moon illumination, we can quickly become IIMC when the snowfall increases, especially when viewed unaided. Crew coordination becomes critical, and any unaided crewmember should advise the flight crew of diminishing visibility.

Whiteout situations, low visibility, CFIT, IIMC and resultant loss of control deserve our attention, as these preventable accidents continue to occur. When faced with IIMC, a situation we constantly train for, it is important to note that accidents occur when attempting a turn, as a further loss of situational awareness often happens. Having this knowledge and obstructions permitting, climb straight and advise air traffic control (ATC) that you have an IIMC emergency. Let the co-pilot tune the radios. As the PC, just concentrate on straight and level flight.

Today, many pilots have never heard of the no-gyro and/or radar surveillance approach that controllers used to provide. While a senior controller recently advised me that very few ATC facilities still train for or provide true antenna structure registration (ASR) approaches, they are able to help and advise you of turns, climbs, descents, etc., by issuing commands such as "turn — stop turn," "climb — stop climb" and, therefore, vector onto and down a localizer approach during IMC. Check with your local ATC for services available in your area. If a military base is located nearby, they most likely can provide you with a true ASR approach. You just listen and fly to their commands.

Again, good judgment, early on, is the best prevention. If you are in diminishing visibility and ceiling, land as soon as possible to any parking lot, field, etc. — being ever so mindful of obstructions. During these landings, slow is good and slower is better.

Many of us in law enforcement have been flying with NVG for some time, so it's important to remember that the moon phase, azimuth and relative position are all important factors influencing image quality and operational capability. Once the moon is less than 20 percent above the horizon, the atmosphere begins dispersing more lunar light, resulting in less image detail. It is interesting to note that most military-recorded accidents while operating on NVG occurred when the angle of the moon was less than 30 degrees above the horizon. Lunar levels can be obtained at the National Oceanic and Atmospheric Administration website at www.NOAA.gov. I learned a lot of good stuff from Scott Baxter when he pioneered the Bell NVG initial class and, for all those able, I highly recommend this initial and recurrent training.

Mission planning, crew coordination and plain old good judgment remain the best manner in which to prevent being in dangerous and deadly situations. Good crew coordination involves flight leadership, two-way communications and the ability to maintain situational awareness. Oftentimes, as flight crews become more proficient with NVG operations, overconfidence and complacency can compromise safety of flight. Risk assessment and management must be continuous from the initial preflight briefing to the postflight debrief.

Editor's note: Adapted by permission from Helicopter Association International and ROTOR magazine.

Editor's note: It can be hard to measure the actual success of a safety program because it is impossible to know how many accidents were prevented. However, every so often, someone who "dodged the bullet" because of their safety training shares that personal experience. Here are a couple of examples involving motorcycle riders.

Nuts and Bolts: Saved by My Training — Twice

I am a sergeant in the Army stationed at Fort Stewart, Ga. I attended the Motorcycle Safety Foundation (MSF) Basic *RiderCourse* training in March 2010. All I can say is a big "thank you" to my instructors, Bobbi and Merland. The training I received in that class has paid off tenfold.

After I attended the class, I received my motorcycle rider's permit through the state of Georgia and bought a new 2010 Honda Fury in April. When I went to the Honda dealer on a Saturday afternoon to pick it up, it had just finished raining and the roads were still wet.

It was about 5 p.m. when I left the dealership, riding in heavy traffic. I was about five minutes into my ride when a lady in a black Suburban pulled out in front of me from a driveway hidden by landscaping and trees. I was traveling at the speed limit of 45 mph and the distance between us was approximately 25 to 30 meters. Without thinking, I immediately put my MSF training to use and avoided disaster by maintaining control of my motorcycle and stopping within a meter of the Suburban's bumper. It all happened so fast that, without the MSF training, I would not have made it home on my new bike that day.

The second incident happened on a sunny day right after work as I was riding in heavy traffic. I was going 40 mph when a young man ran across the street from my left, crossing both oncoming lanes and the middle turning lane before running in front of me. When he saw me, he froze like a deer caught in the headlights. Upon applying the front and back brakes, my front tire locked up and caused me to momentarily lose control. I then released the brakes, regained control and stopped about a foot away from him.

Once again, without my MSF training, I know I would not have regained control of my bike and disaster would have ensued. To those involved with my MSF training, especially my instructors, thank you for stressing the importance of proper braking, remaining vigilant and planning for any scenario while riding. You're doing great things for the Soldiers at Fort Stewart and Hunter Army Airfield.«

Sgt. Richard Welshans
Fort Stewart, Ga.

YOU SAVED MY LIFE!

The following message was sent to Scott Steuerwald, Korea/Japan lead for Cape Fox Concentric Methods, LLC, by a motorcycle rider stationed at Osan Air Base.

I want to thank you for saving my life. I was returning from work on my Harley-Davidson FXCW Rocker and had just left the Air Force Operations Center gate at Osan Air Base and turned east on a four-lane road. As I approached an intersection, I saw a black sedan coming from my right. I immediately moved into the inside lane in case he decided to do anything stupid. As I continued to watch the sedan, I noticed the driver had his cell phone in front of his face. He had no intention of stopping, yielding or even noticing me as he turned left across the three lanes.

In a split second, I faced the decision to either hit him on the side and flip over his car or do an evasive maneuver and take the impact on the side of my bike. Because I knew I could slow to almost a dead stop by the time I reached the middle of his front fender, I decided to slide the bike in front of him. Mind you, he had still not seen me at this point. He saw me and hit the brakes as I began to go around his hood.

I went through the scenario hundreds of times while I was in the hospital getting a titanium rod put into my right tibia. I made the right decision — smashing into to the side of the sedan could have been much more tragic.

Thank you for teaching me how to evaluate risk. Thank you for encouraging me to practice our evasive maneuvers (which my friends and I do regularly). Thank you for impressing upon us the importance of wearing all our safety equipment. Your guidance was one of the primary factors that kept my accident from being much, much worse.«

In your debt,
Tech. Sgt. Shannon Sutton
Osan Air Base

Accidents occurred between May 1-31, 2010

AVIATION

AH-64D

CLASS A

- The aircraft's main rotor system contacted the tarmac during taxi to parking. The main rotor blade separated from the aircraft and struck the forward fuselage, killing the co-pilot gunner and injuring the pilot in command.

CLASS B

- The aircraft was lead in a flight of two when it contacted trees. Postflight inspection revealed damage to the tail strut, stabilator, wing store, 30 mm cannon and sheet metal.

UAS

RQ-7B

CLASS B

- The unmanned aircraft (UA) experienced engine failure while in flight. The recovery chute deployed and the system was recovered.

CLASS C

- The UA experienced a telemetry readout failure upon launch. The aircraft operator initiated a climb and activated the recovery chute. The UA sustained damage.
- The UA experienced an AIR DATA SENSOR FAIL shortly after launch, then descended to ground impact. A postcrash fire ensued and the system was destroyed.

GROUND

ACV

CLASS B

- A Soldier's arm was amputated after the Mine Resistant Ambush Protected (MRAP) vehicle he was riding in overturned. The driver, TC and another Soldier were also injured.
- A local national embedded employee suffered the partial amputation of four fingers when he caught them in the gunner's hatch turret ring on an MRAP.

Explosive/Fire

CLASS A

- A Soldier died six weeks after he was injured in a construction fire. The Soldier was laying linoleum flooring in a dining facility when the fire started. Two other Soldiers were injured.

Personnel Injury

CLASS A

- A Soldier died after he was accidentally shot in the head with his own weapon at a social gathering at another Soldier's home.
- A Soldier drowned in a lake when he attempted to swim from a boat to retrieve a can floating on the water. The Soldier was with a group of three other Soldiers who had rented the boat from a local marina.

DRIVING

POV

CLASS A

- A Soldier driving with two other Soldiers as passengers rear-ended a dump truck while going through a construction zone. The Soldier/driver was killed and both passengers injured.
- A Soldier was killed when he attempted to avoid a slower-moving vehicle in his lane, ran off the road, struck an embankment and hit a tree.
- A Civilian with a learner's permit was driving with a Soldier as a passenger when she struck a vehicle she was passing, entered the oncoming lane and collided with a tractor-trailer. Both she and the Soldier were killed.

ARMY AVIATION LOSSES

Fiscal 2010

as of August 4, 2010

	Class A/Fatalities
ATTACK	2/1
RECON	4/4
UTILITY	6/6
CARGO	3/0
TRAINING	0/0
FIXED-WING	2/0
UAS	5/0
TOTAL	22/11

ARMY GROUND LOSSES

Fiscal 2010

as of August 4, 2010

	Class A/Fatalities
AMV	14/6
ACV	10/9
PERSONNEL INJURY includes weapons-handling accidents	24/22
FIRE/ EXPLOSIVE	4/3
PROPERTY DAMAGE	1/0
TOTAL	53/40

- A Soldier was killed while riding in a car driven by another Soldier. The driver lost control on loose gravel and the vehicle overturned and struck an embankment. The driver survived.
- Police believe a Soldier was street racing when his car struck another vehicle, crashed and caught fire. The Soldier died at the scene.
- A Soldier was killed when his vehicle collided with a truck as he was exiting a parking lot into a four-lane road.
- A Soldier was driving his SUV late at night when he lost control in a turn and overturned while trying to correct. The SUV overturned three times, during which he was ejected and killed.

POM

CLASS A

- A Soldier was killed when his sport bike ran off the road, went through a ditch and hit a tree. The rider was speeding and not wearing his personal protective equipment (PPE).
- A Soldier was in a group of 10 riders motorcycling during off-duty hours when he entered a curve at too great a speed, panicked and crashed into a guardrail. The Soldier was airlifted to a local hospital, where he later died. The Soldier had received Army-mandated rider training and was wearing his helmet and PPE.
- A Soldier died after he hit a patch of gravel while riding his newly purchased sport bike, lost control and was thrown against an embankment. The Soldier was wearing his PPE but hadn't attended motorcycle training.
- A Soldier on rest and recreation leave was riding his cruiser motorcycle when he drifted to the side of the road and struck a curb. The Soldier was thrown from his bike and killed.
- A Soldier was killed when he lost control of his motorcycle while riding through an S-curve and struck a guardrail.
- A Soldier departed the armory on his motorcycle, lost control in a turn and crashed. He was not wearing a helmet and died at a local hospital.

Pedestrian

CLASS A

- A Soldier was walking to sick call when she stepped off the sidewalk into a parking lot and was struck by another Soldier driving a POV. She was transported for medical treatment, but later died.

ATV

- A Soldier was killed when he struck a tree while riding his all-terrain vehicle and was ejected. The Soldier was not wearing PPE.

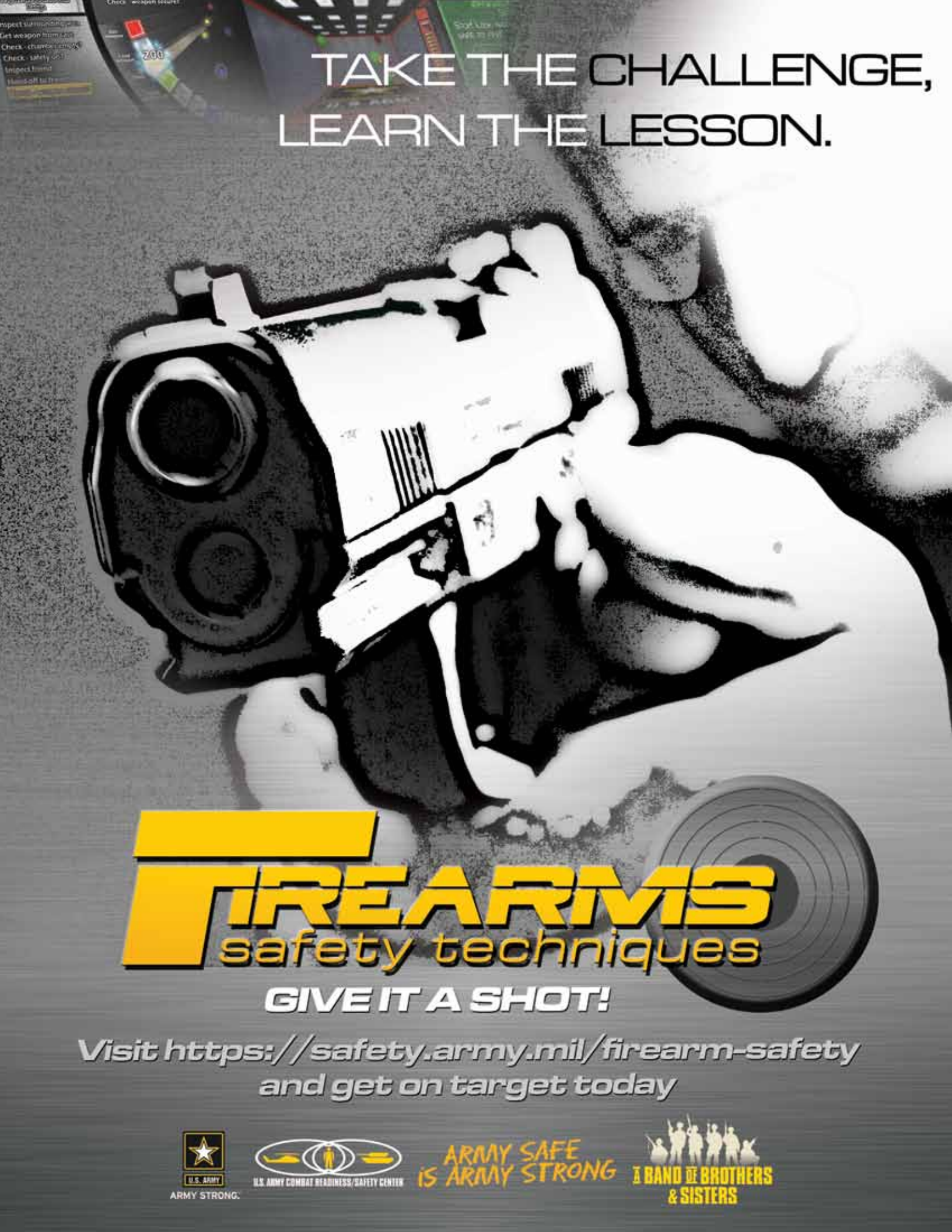
POV DRIVING LOSSES Fiscal 2010

as of August 4, 2010	Class A/Fatalities
CAR	34/35
SUV/JEEP	9/10
TRUCK	4/4
MOTORCYCLE	29/26
PEDESTRIAN	9/10
OTHER*	2/2

*Includes vans and ATVs

87 TOTAL DEATHS

Fiscal 2009: 90 3 year average: 98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LIVE WIRE: A "SHOCKING" TALE OF HOME REPAIR

KNOWLEDGE

VOL 4 OCTOBER 2010

OFFICIAL SAFETY MAGAZINE OF THE U.S. ARMY

THE GOOD, THE BAD AND THE UGLY

- UNCHAINED
- SMALL DISTRACTIONS
- LEAD, FOLLOW OR GET OUT OF THE WAY!

THE BEST APPROACH

U.S. ARMY
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SEASONS CHANGE, SAFETY ALWAYS

ARMY SAFE

FallWinter

NO TIME TO CHILL

Soldiers, Civilians and Family members prepare for cold weather activities through awareness, education and information. Gear up and protect yourself and our Band of Brothers and Sisters.

OCTOBER 2010–MARCH 2011

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KNOWLEDGE

OFFICIAL SAFETY MAGAZINE OF THE U.S. ARMY

LEADERS SOLDIERS FAMILIES

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Mission statement: The United States Army Combat Readiness/Safety Center (USACR/Safety Center) supports our Army by collecting, analyzing and communicating 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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> "Even a **SHORT** welfare **CALL TO CHECK IN** on a **TROUBLED** Soldier can have an **IMPACT** on his or her **DECISIONS.**"

REDISCOVERING THE "LOST ART"

As I look out across our Army, I continue to be amazed at the superb job our Soldiers are doing each and every day. Those who make up our total force — not only our Leaders and Soldiers, but also the Families and Civilians who support them — are all great Americans who represent the best our nation has to offer.

One thing that strikes me most about our Soldiers today, especially the younger generation, is how willingly they accept the responsibilities of modern military service. Nearly every year since fiscal 2005, more than 100,000 new Soldiers have entered our force at an average enlistment age of 20 to 21 years old. This means we have an immense number of junior Leaders in our current ranks, a trend that will continue for the foreseeable future. And, as our force structure evolves into the ARFORGEN model, these young Leaders will become more important than ever in keeping all our Soldiers safe and in the fight.

There's no doubt our junior Leaders are doing great things, especially in our combat theaters. Their resolve and hard work have helped sustain an unprecedented pace of continuous deployments amid constant conflict, and their leadership has provided both continuity and reassurance for the Soldiers in their charge. As significant as combat operations are, however, we cannot forget the importance of what happens at home station, where the majority of our fatal accidents are occurring.

It's not that our young Leaders don't want to make a difference at home. Rather, the necessities of war have made garrison leadership a "lost art" for junior Leaders because they haven't had a lot of experience at home station. But to tackle accidental losses and other issues facing our force today, we have to get back to the "left of boom" at home — where safety truly begins. And to do that, we have to help our young Leaders understand their responsibilities beyond the battlefield and what leading from the front means, both on and off duty.

The most important steps junior Leaders can take in leading at home seem easy enough: taking the time to sit down with their Soldiers and Families and getting to know them on a personal level. Through this one-on-one interaction, Leaders can identify high-risk Soldiers and develop intervention plans tailored to the individual's unique needs and interests. And to really have an impact on Soldier decisions during off-duty hours, junior Leaders must pay attention to the little things that matter. Even a short welfare call to check in on a troubled Soldier can have an impact on his or her decisions. It's all about knowing how Soldiers think, what they think and reinforcing the safety message around the clock, every day, in theater and at home, on and off duty.

Our young Leaders can't be effective without the help of experienced and senior Leaders, however. They need mentorship and guidance to successfully mentor and guide their own Soldiers. There's no doubt our Army is busier than ever, but we simply have to find the time to grow our junior Leaders into the well-rounded, professional leadership cadre needed for the conflicts of both today and tomorrow.

When it comes to accidents and the vital role all Leaders play in risk management, no one stands alone. There are some great products out there to help Leaders and Soldiers at all levels in the fight against preventable accidents and high-risk behavior, including those found in the "Cornerstone" section of the USACR/Safety Center website (https://safety.army.mil). The three corners — Soldier, Leader and Family — each feature interactive media products such as Soldier risk assessments, safety training information and links to other tools designed to keep the total force aware and safe. One new tool available for our single Soldiers is the BOSS Safety Factor kit, just launched in September. Please take a look and let us know what you think. Your feedback is always welcome and helps us provide you the information you need.

We're embarking on a new fiscal year this month, and there's no better time to renew your commitment to safety and the needs of the junior Leaders and Soldiers in your command. Each of you is doing fantastic work every day for our Soldiers, Families and Civilians, and I'm confident this year will be another great year for our Army. Thank you!

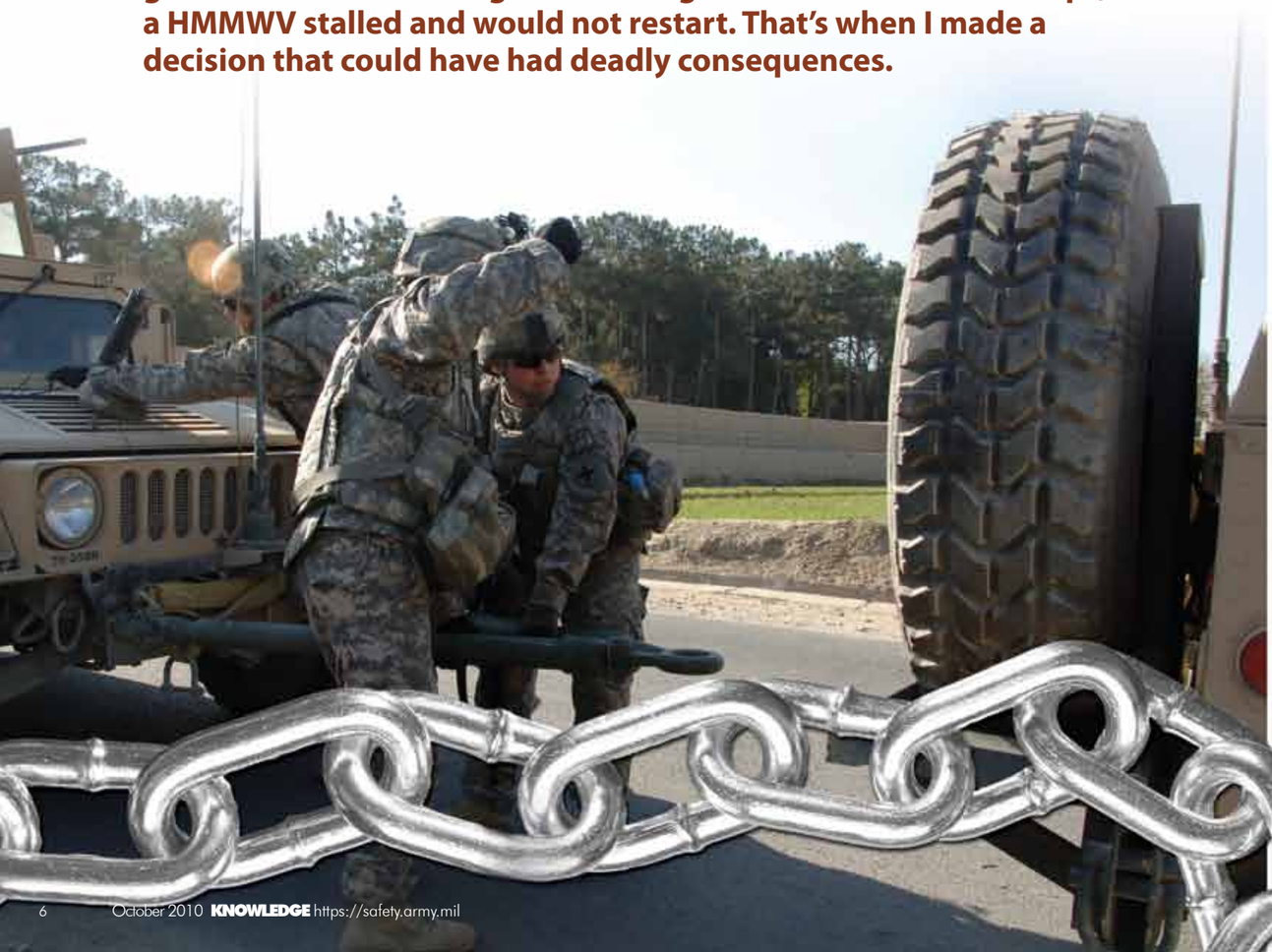
Army Safe is Army Strong!

WILLIAM T. WOLF
Brigadier General, USA
Director of Army Safety

UNCHAINED

GUNNERY SGT. SHANE LEVINGS
1st Battalion, 4th Marines, 1st Marine Division
Camp Pendleton, Calif.

In September 2009, my unit conducted training in the mountains of northern California. My platoon was responsible for performing 80 percent of the convoy operations. One morning, we were tasked with taking the company's packs and gear to a distant training area. During one of our scheduled stops, a HMMWV stalled and would not restart. That's when I made a decision that could have had deadly consequences.



Being a motivated young Leader, I decided to rig the truck for towing. As my troops were hooking up the tow bar, I noticed one of the drivers tearing through his truck. I asked him what he was doing, and he said he was looking for the safety chain. I've worked with HMMWVs my whole career and towed more trucks than I can count. In all those times, however, I'd never used a safety chain with a tow bar, so I told him to disregard and get ready to move out.

Due to the mountainous terrain, we'd adjusted our convoy speed to 15 mph. The truck we were towing seemed to be doing well, so, as we passed through base camp, I made the command decision to continue on to our training area. Once there, we unloaded the packs and gear and checked the tow bar to ensure it was still secure. All looked good, so we headed back to lower base camp to drop off the downed vehicle and check the rest of the trucks in the convoy.

On our way back down the mountain, I started receiving calls over the radio that some of the vehicles' brakes were failing and drivers were using their emergency brakes to slow their trucks. By the time I reached the base of the mountain, I figured we were all out of the woods. Then the call came in.

"Vic 1, this is Vic 10. Truck down!"

We consolidated the rest of the convoy at the bottom of the mountain and I sent them on to base camp. I then went back up the mountain to see what was happening. Once I arrived, I only saw one truck on the road — and it was facing the wrong direction. Where was the other truck?

The driver told me he was traveling down the mountain when his brakes failed. As the truck continued to pick up speed, he pumped the brakes until they locked, causing the HMMWV he was towing to slam into the tow bar and break the bracket on the driver's side. The HMMWV then went into the oncoming traffic lane and started passing the truck that was towing it. The passenger-side bracket broke and the HMMWV traveled down the mountain for about 500 yards before finally going into a ditch. Fortunately, no one was injured. If there had been any vehicles coming up the road, though, the occupants surely would have been killed.

If I would have listened to that young driver from the beginning and used the safety chain on the tow vehicle, this accident never would have happened. When the safety chain is properly attached, it prevents the truck from moving into oncoming traffic should the tow bar break. While there still may be damage to the vehicles, the loss of life may be prevented.

As senior Leaders, we have to realize that we don't know everything. Sometimes we have to listen to our young trained troops to help us make the right decisions.

MITIGATING TIRE FIRE DAMAGE

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

Though not at an alarming rate, tire fires are impacting the Army's vehicle fleet in theater. Whether from vehicle operations or enemy action, tire fires have been extremely difficult to extinguish and have historically resulted in catastrophic damage, putting most affected vehicles permanently out of commission.

In response, the U.S. Army Materiel Command has identified a commercial off-the-shelf external extinguishing system to defeat these types of fires. The system is an independent compressed air foam portable backpack-type extinguisher that comes in yellow or desert tan. According to the U.S. Army Test and Evaluation Command (ATEC), which tested the system, the extinguisher weighs about 75 pounds when fully charged and converts the 5 gallons of water it contains into about 100 gallons of foam. ATEC also indicated the system can discharge a stream of foam from up to 22 feet away, which allows users to remain out of harm's way.

Since these extinguishers do not meet electric conductivity rating (C rating) requirements as part of authorized extinguishers listed in Department of Defense Issuance 6055.06, National Fire Protection Agency National Fire Codes and Army Regulation 420-1, they should not replace the required dry chemical or Purple K systems. Instead, these extinguishers can be used to supplement existing systems. It is also imperative users are properly trained to operate and maintain this system in accordance with the manufacturer's instructions.

Units can order this system through the Standard Army Retail Supply System (NSN 4210-01-558-3687). The U.S. Army Combat Readiness/Safety Center's Ground Task Force is interested in hearing your feedback on this issue and can be contacted at safegroundtaskforce@crc.army.mil.

The Best Approach

CHIEF WARRANT OFFICER 3 JASON DRISKILL
A Company, 1st Battalion, 52nd Aviation Regiment
Fort Wainwright, Alaska

CHIEF WARRANT OFFICER 2 SHANE KEEBLER
A Company, 5th Battalion, 101st Aviation Regiment
Fort Campbell, Ky.

As Army aviators, we often tell ourselves we'll never encounter instrument meteorological conditions (IMC). However, the fact is, we will encounter IMC eventually in our career — either intentionally or inadvertently — and, sometimes, with potentially devastating consequences.

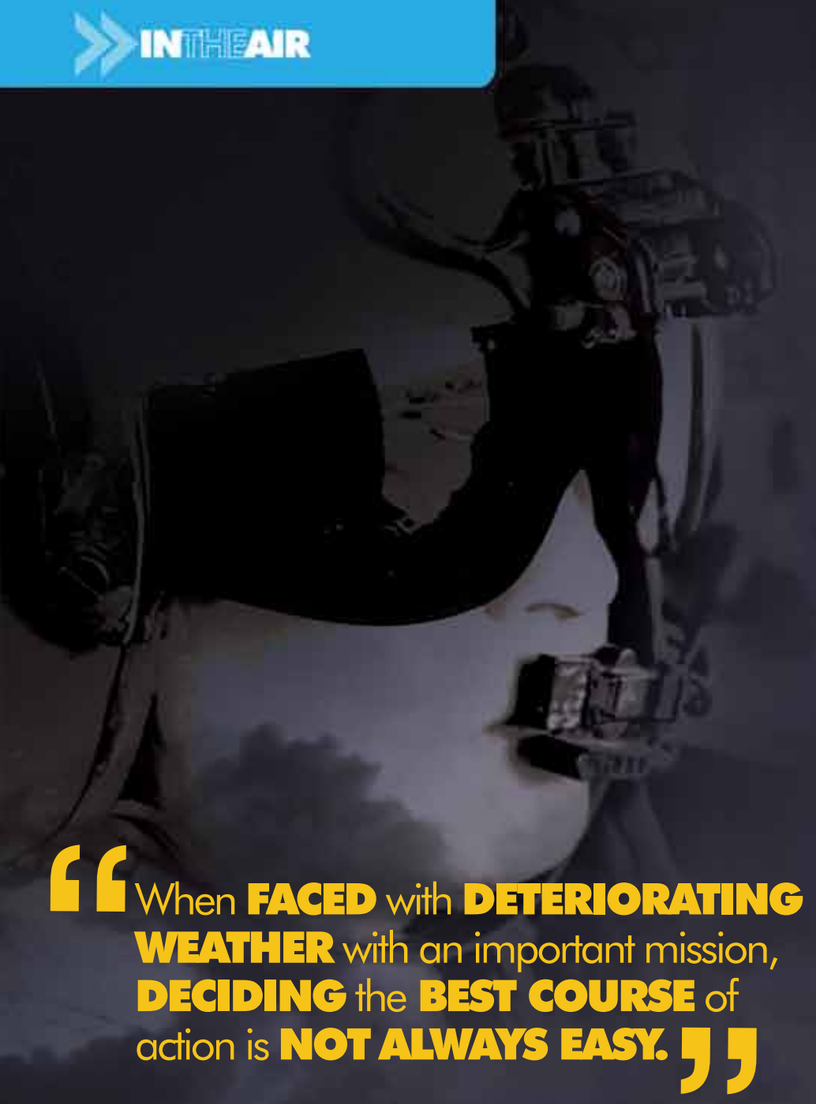
While deployed in support of Operation Enduring Freedom in 2008, I served in an air assault flight company based out of Forward Operating Base (FOB) Salerno in eastern Afghanistan. Most of our missions were routine and, on this day, it was no different. The mission, a medevac chase, required one of our aircraft be paired with a medevac aircraft. As directed, we flew as a flight of no less than two with a designated air mission commander (AMC). The medevac pilot in command (PC) was always the designated AMC for medevac missions, regardless of experience. The AMC was responsible for briefing all involved crews and was in charge of the flight overall. Our crews normally worked well together as a flight; however, because of the routine nature of this mission, we had become overconfident in our ability to fly in deteriorating weather.

The mission began as it had any other night. Both crews received a GO/NO-GO brief to include weather, the enemy situation, etc. Afterward, we performed an AMC brief and then headed to our aircraft for preflight preparations. About an hour before sunset, we received a medevac call. Our mission was to fly to FOB Ghazni — about a 40-minute flight — pick up a patient and return to FOB Salerno. We received a legal weather brief and departed.

Our flight to Ghazni was unremarkable. On arrival, we discovered the patient was not ready and there would be a delay. FOB Ghazni had a forward arming and refueling point, so we asked the AMC if he wanted to refuel while we waited. He replied that he had sufficient fuel to return to FOB Salerno. We had the same amount of fuel with a similar fuel consumption rate. His appraisal of the situation was reasonable, so we forewent refueling as well.

The patient arrived 20 minutes after we landed. In the interim, the day had faded away. Because of the moon angle and illumination, we were required to take a low-illumination route on the return trip. A combination of high

> "... **BECAUSE** of the **ROUTINE** nature of this **MISSION**, we had become **OVERCONFIDENT** in our **ABILITY** to fly in deteriorating **WEATHER.**"



> "When **FACED** with **DETERIORATING WEATHER** with an important mission, **DECIDING** the **BEST COURSE** of action is **NOT ALWAYS EASY.**"

altitudes and lack of illumination reduced ground references.

As we were returning, we briefly encountered unforecasted heavy precipitation that transitioned into a heavy layer of scud. We radioed Chalk 1 and suggested we divert to the nearest hospital, which was 10 miles behind us. The AMC acknowledged our call, but decided to press on. He reported his crew could still see the ground and they were proceeding. Despite our reservations, we continued for several minutes until we were in a brightly lit area that we should have been able to see, but did not. We again radioed the AMC that we were visual flight rules on top and we couldn't see any ground lights. Further, we expressed our concern that we would have to execute the emergency global positioning system approach into FOB Salerno because we didn't have enough fuel to turn around, nor did we have contact with the ground. Chalk 1 responded they could see lights every now and then.

About 10 miles from FOB Salerno, we called Metro to get weather conditions. The weather briefer reported a ceiling broken at 3,000 feet above ground level. We were at 9,000 feet mean sea level (MSL) with unrestricted visibility on top of the clouds and our base sat at 3,500 feet MSL.

At that point, Chalk 1 realized the seriousness of the situation. We coordinated flight to the two separate initial approach fixes (IAF) and sequenced ourselves through the solid cloud layer with the help of Salerno tower. Before reaching the IAF, I briefed my crew on the approach procedures and warned everyone to be aware that spatial disorientation might occur. My co-pilot initiated the descent and we were soon in the clouds. Because of mission constraints, we rarely practiced flying instruments. However, we did an adequate job of maintaining aircraft control. For several intense minutes, we were IMC at night with limited fuel. Our door gunner experienced spatial disorientation and began to panic. We had him focus his attention on the attitude indicator to allay his concerns. At 6,000 feet MSL, we began to see the ground, familiar structures and terrain features. To say our crew was relieved to be out of that situation was an understatement. Shortly thereafter, both aircraft landed safely.

What Went Wrong?

When faced with deteriorating weather with an important mission, deciding the best course of action is not always easy. As aviators, we are driven to accomplish our mission and sometimes we become so task focused that we don't adequately identify or assess the risks. First, we should not have passed on the opportunity to refuel. We were not power limited and there was ample time to do so. Next, upon encountering inclement weather, we should have turned around while we had sufficient fuel. Finally, although the AMC was in charge of the overall flight, I should have made the decision, as the PC, to ensure the safety of my aircraft, my passengers and crew. Rather than let the less-experienced AMC lead us into trouble, it was my responsibility to be proactive in suggesting alternate courses of action.

We were both mission focused and overconfident in our abilities to fly in deteriorating weather. Additionally, we were complacent because of the routine nature of the mission. We were lucky that night. Crews should be prepared for the possibility of entering IMC despite the forecasted weather. Sometime, somewhere, entering IMC will happen. Remember, the best approach is to land before entering IMC.

The Five C's

The five C procedure is a fast-acting antidote to confusion and anxiety during the first 10 to 15 seconds after IMC penetration. It is within these first few critical seconds that the battle with IMC is won or lost. If aircraft control can be maintained during this initial crucial period, the chances of surviving an IMC experience are greatly enhanced.

Whether all five C's will apply in each IMC circumstance will depend on existing conditions (e.g., terrain, obstacles, etc.).

1. **CONTROL OF THE AIRCRAFT:** This is the most important factor in recovering from unplanned flight into IMC. You must convince yourself ahead of time that if you enter IMC and lose ground reference, your only option is to immediately transition to instrument flight. Level the wings in the attitude indicator, maintain heading, adjust to climb power and adjust to climb airspeed. Once you make the transition, control is established by crosschecking the flight instruments. If you fail to make this transition, you're in serious trouble. The four subsequent C's depend on the successful accomplishment of this first C.
2. **COORDINATION:** Crews must discuss what each will do in case of unplanned entry into IMC. It should be understood that the pilot on the controls will concentrate on the instruments while the pilot not on the controls will back up the instrument scan, along with all his normal duties, and look outside for a place to land. When flying multiship, each aircrew must coordinate between flights.
3. **CLEARANCE:** To ensure that the highest terrain feature along the route of the flight will be cleared, gain altitude with a straight controlled climb. Utilize minimum safe altitudes and low illumination routes. In mountainous terrain, consider briefing multiship inadvertent IMC breakup to maintain heading and deconflict by airspeed and altitude.
4. **COURSE:** Select and turn to the appropriate heading or maintain heading as dictated by terrain.
5. **CALL:** Make required radio calls for assistance. Coordinated radio frequencies should be specified and posted in the aircraft.

Editor's note: Driskill was the PC and Keebler was his co-pilot on this mission.

A Forked-Up Plan

MASTER SGT. PAUL B. CALIHAN
1st Battalion, 285th Aviation Regiment
Arizona Army National Guard
Marana, Ariz.

It was early morning and a group of us had just finished an exhausting run. Walking up the back steps that overlooked our motor pool, it looked like any other beautiful day. In the distance, a Soldier was moving a forklift, but we didn't think much about it. What we saw next, however, left us scratching our heads.

A Soldier approached the forklift from the side and got onto the forks while the Soldier operating the lift raised him high enough to clear a fence surrounding the secure motor pool. We all stopped and looked at each other. Was this really happening — right in front of two captains and a master sergeant?

I walked up to the Soldiers and asked, "What are you going to put on your accident report?" Neither Soldier responded. Apparently, they didn't think there was anything wrong with lifting a Soldier over a fence and into the back of a 5-ton truck to replace parts. I suppose their reasoning was, "It's early … why bother trying to get someone to open the motor pool?" They had already worked out a plan — albeit a dangerous one. After pointing out the potential risk of their actions, the Soldiers both agreed this had not been in their best interest.

Sometimes, the accidents we've prepared for are right in front of our faces. These Soldiers weren't thinking about what might have come next — the Army Ground Accident Report and potential repercussions from not following correct procedures.

When we see a potentially unsafe act, we must stop it or it will become a standard operating procedure. It takes leadership at all levels to ensure that when that moment comes, we intervene to prevent an accident that could injure or kill a Soldier.«

Do You

Us?

Check out the U.S. Army Combat Readiness/Safety Center's Facebook page for the most recent news stories, videos and photos by the Army's premier safety professionals.

ARMY SAFE IS ARMY STRONG

Small Distractions Can Lead to Fatal Mistakes

CHIEF WARRANT OFFICER 2 JAMES B. HILLIARD
C Company, 3rd Battalion, 159th Attack Reconnaissance Battalion,
12th Combat Aviation Brigade
Illesheim, Germany

The mission was a standard ferry flight that the unit had done many times to a training area in Germany. For training purposes, the company standardization pilot wanted the younger pilots in the company to build a new route using the Aviation Mission Planning System (AMPS) computer. The pilots were to then brief the company on the new route. Due to system limitations, the pilots split the route into two segments. Upon reaching waypoint six, the flight would switch to the second route and continue to the destination.

I was in the front seat of the lead Apache in a flight of six departing for the training location. Everything, from communications check to takeoff, went as planned. I noticed that the route shown on the tactical situation display (TSD) took the flight past waypoint six and into the route structure of the training area.

I was on the controls and the aircraft hold modes were activated. Upon reaching waypoint six, the pilot in command (PC) in the backseat switched the route as briefed. To our surprise, the route disappeared from the TSD. The PC and I started discussing what happened. During the discussion, the PC wanted to take the flight controls. We did the three-way positive transfer of control and I released the controls. I then changed back to the original route. A few moments later, the PC said we were left of course. I concurred. Moments later, the PC said we were going farther left of course. Once again, I concurred.

A few moments later, the PC said we needed to come right and get back on course. I hesitated for a second and asked if he had the controls. "Oops, I forgot," was the response. Sometime during the confusion with the route, the PC forgot we'd transferred controls. For about five minutes, no one was flying the aircraft. It was the hold modes that kept us straight and level.

> "I HESITATED for a second and ASKED if he had the controls. "OOPS, I forgot," was the RESPONSE."

There is a standard word association used in the aviation community. We hear a command and, without hesitation, almost subconsciously give the response — sometimes without taking action. Because it is hard for the pilots in the Apache to see each other, it can be difficult to know if the action was completed without verbal confirmation. This has led to many accidents where no one was flying the aircraft.

Continue to practice proper crew coordination. Don't take it lightly. The smallest distractions can lead to a fatal mistake.

THE GOOD, THE BAD AND THE UGLY

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

Here are the stories of three Soldiers who started off on top of their all-terrain vehicles (ATVs) but didn't wind up that way.

The Good

Try as you might, you can't necessarily prevent every accident. However, you can dramatically increase your odds of survival by being prepared. You know … just in case.

Sgt. Shaun Delong looks like he got fed too much as a kid and just kept growing. A tall, solid-looking guy with a big grin, he's not happy if he's not flying through the air — launched from the ground on either two or four wheels. Something about the "freedom" of flying, he says, has him hooked. You can blame his parents. They gave him his first dirt bike — a Honda XR50 — when he was 4.

Not that the boring life was ever for him. By the time he was standing in line at his high school graduation, he knew he wanted an exciting job. In fact, he'd long ago made up his mind he wanted to be a cop. But that meant quite a wait while he got the needed training and put a few more birthdays behind him. Being an impatient sort of guy, he trotted down to his local Army recruiter, spurred by the promise of an immediate introduction into the world of law enforcement. Delong figured the Army would only be a temporary deal for him; five years in the green suit to prep him for the civilian police force. But, wouldn't you know it, the Army put a few stripes on his shoulder and the grass started looking pretty green on this side of the fence.

Fast-forward to 2009. Having spent the previous year competing on his dirt bike, he decided to spice up his life by racing on four wheels. Having tested several sport ATVs, he settled on a 2008 Yamaha YFZ450R. Its low-end torque, he figured, was just the thing for rocketing out of the gate and powering through corners. Sure, it was 100 or so pounds heavier than his dirt bike, but good air time was still possible. And he loved getting air time.

Delong said, "It's just the thrill of it — just being on a bike or an ATV. Especially jumping; it feels like you're floating through the air. It's not a feeling you can describe to someone unless they actually do it. It's kind of a rush."

Still, even a good rush needs to be tempered with a little common sense. His parents didn't let him swing his leg over his dirt bike without first instructing him about riding safely. In addition, they also made sure he wore an appropriately sized helmet. Those instructions — ingrained at such a young age — became a part of his mindset every time he rode. And then there was a hard example that hit close to home. In 2006, his cousin went over a cliff on an ATV, struck his head as he tumbled and died from his injuries. A helmet would have made a huge difference that day.

Hit the fast-forward button again to early on the afternoon of Nov. 1, 2009. Delong decided to join his neighbors for a ride on the track he had built on the land behind his house, and air time was definitely on the menu. Delong approached the double jump with the intent to clear the obstacle, but came up a bit short on the landing.

"When I hit the face of the first jump, I think my rear tires slipped out on me," he said. "Instead of grabbing traction at the top of the jump, they spun and didn't get enough traction to shoot me across."

Slamming into the face of the second jump, the impact sent Delong over the handlebars of his four-wheeler and onto the ground to the left of the jump. He struck the ground with enough force to knock himself unconscious. He awoke with a throbbing headache and found it difficult to breathe. Delong stood up and leaned against his friend's ATV, trying to catch his breath. Once he did, he walked over to his ATV to see if anything was broken.

"I get repaired for free — I have to pay for the ATV," he said.

Amazingly, the machine was relatively undamaged, so he rode it back to his house and parked it in the garage. After sitting around for a few minutes, he decided he needed to get to a hospital and asked his wife to take him. But when he stood up, the pain was so great they decided to call an ambulance instead. Except for his helmet, he was still wearing his riding gear. Hoping to keep it from being cut off him, he painfully changed clothes before emergency personnel arrived.

After undergoing repeated X-rays and CT scans at the hospital, Delong was told he had no broken bones or serious internal injuries. His personal protective equipment (PPE) — including his helmet, neck brace, goggles, chest and back protector, knee protectors and riding boots — saved him from any serious injuries. However, he didn't get off scot-free. Delong spent three days in the hospital, enjoying the best pain medication the Army could provide, and wound up with a huge contusion ("the mother of all bruises") on his right side. But his injuries didn't limit his desire or ability to get back out on the track. Like good insurance, his PPE bought him a second chance to do the things he enjoys.

But it could have gone otherwise. Delong is convinced his PPE saved him from injuries that could have ended his competitive career on the motocross track.

"You never know — you could be the best rider out there. … If you watch supercross and motocross, those guys still get hurt and go down," he said. "I'm nowhere near that good. … If it can happen to the best people, it can happen to you too."

The Bad

Underestimating your risks can shave your margin of survival razor-thin. Spc. Don Michaels (a fictitious name to protect his privacy) rolled the dice and came up short. Fortunately, he's still here to share what he learned.

It was a freezing-cold morning as Michaels unloaded his 2008 Honda Rancher ATV at the riding park in Canmer, Ky. It was his first chance to ride at the park, which offered challenging terrain, including tall hill climbs. Earlier that morning, he'd met his friend John Douglas (not his real name), who also had an ATV — a Polaris RZR, a model typically referred to by riders as a "Razor." The Razor was a side-by-side model designed to carry a passenger and protected by a roll cage. Both riders headed to the park looking to have fun as they gained experience on their ATVs.

Not that Michaels lacked experience — he'd been riding ATVs for 15 years. His focus, however, was not on racing. Michaels was a deer hunter, and a utility ATV was just the ticket for getting to his hunting area and then transporting game back to his truck. At the slow speeds he normally rode, he never felt the need to wear a helmet or other protective gear.

As they rode that morning, Michaels followed Douglas toward a series of five hills. Each was about 500 feet high and provided a more challenging climb than the previous hill. Michaels knew his friend's machine was better suited for this type of riding. Still, he wasn't about to be deterred from trying. Watching his friend go up the third hill, Michaels climbed the second. Encouraged when he reached the top, he decided to join his friend atop the third hill. But Mother Nature had a surprise waiting. Freezing temperatures had left an additional "challenge" on the hill — one he wasn't prepared for.

"As I was going up the third hill … my right-rear tire hit a patch of ice," he said. "I felt myself starting to fall backward."

Michaels was in trouble. He wanted to roll the ATV slowly backward while turning it and then pulling forward to move more sideways on the hill. But there was another problem. Two weeks earlier, a friend crashed the Honda and tore off its front brake lever. With only the rear brake working, the ATV's front began to come off the ground.

"As I was backing down diagonally, I felt the right-front side of my four-wheeler starting to flip back," Michaels said.

Sensing the ATV was about to roll over to the left, he jumped off, hoping to avoid it as it tumbled down the hill. But things didn't quite work out. As the ATV rolled, something — perhaps its handlebars — briefly caught and delayed the ATV long enough for Michaels to tumble downhill ahead of it. When the ATV started rolling over again, it came straight for him.

"It was almost like it was following me," he said.

Michaels went a short distance and then landed against a tree. Before he could get out of its way, the ATV struck him, pinning his head against the tree's trunk. Fortunately, it was the ATV's padded seat — not something much harder — that hit his head. Able to use his arms and shoulders, Michaels pushed the machine away and freed his head. However, as soon as he tried to stand, he fell. He had no idea how seriously he was injured.

Douglas, who was busy riding, hadn't seen the accident. When he finally saw the crashed ATV, he called out for Michaels, who was hard to see in his camouflage hunting gear. Riding to the accident site, Douglas spotted Michaels and loaded him into his four-wheeler for a ride down the hill.

"He did have a first aid kit, but it was all frozen," Michaels said.

He explained they used the gauze as best they could to dress his head injuries. Unfortunately, neither had cell phone coverage at the park and couldn't call 911.

Leaving Michaels inside his warm pickup truck, Douglas retrieved the crashed ATV. As

Michaels waited, he felt stunned and noticed his vision going in and out. When Douglas returned with the damaged ATV, they loaded it onto the back of Michaels' truck. Despite having a throbbing headache and bleeding from a nasty cut on his scalp, Michaels chose to drive the 54 miles back to Fort Knox. As they drove, Douglas followed him to make sure he made it.

As soon as Michaels could get phone reception, he tried calling his wife. Eventually, he reached her and decided to go straight to the emergency room at Fort Knox's Ireland Army Community Hospital. Once he arrived there, he was given an MRI. He was later transported to the University of Louisville hospital, where doctors read the MRI's results. They weren't encouraging.

"They found out that the entire right side of my face was shattered and I had a skull fracture on the left side. I also had bruised ribs," Michaels said.

Still, he was alive. Doctors used staples to close the scalp wound and sent him home late that night. The next day he went back to the hospital for surgery. Using three titanium plates, doctors rebuilt the right side of his face from the temple down to the eye socket and cheek.

Michaels spent a month at home recovering from his injuries. Shaving with his electric razor sent painful vibrations through the bones and plates in his face and even eating hurt. However, he survived his accident and returned to duty with his unit. Looking back, if he could have that Sunday to do over again, there are some things he'd change.

"I would have gotten my front brake put on before I went out to ride that day — that is probably one of the reasons this happened," he said.

Michaels now understands why protective gear, especially helmets, makes sense. The hill climbs and other challenges at ATV parks can quickly lead to spills, and riders need to protect themselves against injuries. And it's not just for their sake, but also for their Families. He contemplated what it would have been like had his crash proved fatal.

"It would have been really bad for my wife

TOOLS FOR YOUR ATV KIT BAG

Learn to Ride Right

Training has greatly improved since the early years when learning to ride an all-terrain vehicle (ATV) was largely a self-taught option. There are organizations that provide instructor-led training at locations throughout the country.

Wear the Right Gear

So, what kind of ATV do you ride? Is it a sport or utility model? The correct personal protective equipment (PPE) varies between the two types. In addition, Army Regulation (AR) 385-10 requires riders wear PPE to prevent or reduce injuries. The list below is guidance for Soldiers riding to their favorite hunting spot, exploring the woods or performing outdoor chores on a utility ATV:

- **Helmet:** Wear a Department of Transportation (DOT)-compliant motorcycle helmet — a full-coverage design is recommended. AR 385-10 emphasizes that helmets must be properly fastened under the chin and adds that overseas Soldiers may wear helmets available in their host nation as long as they meet or exceed DOT standards. Helmets protect against injury and discomfort from windblast, cold, noise and flying objects. Your helmet is your most important piece of protective gear.
- **Eye Protection:** Use motorcycle goggles worn outside the helmet, unless you're wearing a full-coverage model. AR 385-10 requires that Soldiers wear impact- or shatter-resistant goggles, wraparound glasses or full-face shields meeting or exceeding American National Standards Institute (ANSI) Safety Code Z87.1. Goggles and face shields protect you against injury from flying debris while reducing dust, which irritates the eyes and impairs vision. Get either clear or tinted high-quality lenses.
- **Long-sleeve Shirt:** Wear a long-sleeve shirt made of cotton or synthetic material to protect you against abrasion, sunburn, windburn, dehydration and hypothermia. Bright colors will increase your visibility on the trail.
- **Gloves:** Wear specially designed off-road motorcycle or ATV gloves. These protect against injury from flying debris and trailside hazards such as branches and bushes. They also provide a more secure grip on the handlebars and protection in case of a fall.
- **Long Pants:** Wearing denim jeans or specialized riding pants will offer the best protection against abrasion, sunburn, windburn, dehydration and hypothermia.
- **Boots:** Thick-leather, over-the-ankle boots provide the best protection against foot and ankle injuries. Go one size larger than your normal shoe size to accommodate thick socks to cushion the feet and wick away moisture. Boots also provide the best grip on footrests and help you keep your footing when you get off your ATV.

If you're into motocross, hill climbing or getting air time, there's additional safety gear to help protect you.

- **Riding Jersey:** Made of cotton or synthetic material, riding jerseys help wick away perspiration and keep you cool. They also protect against abrasions, sunburn, windburn, dehydration and hypothermia. Some jerseys include light elbow pads. Bright colors increase your visibility on the road.
- **Elbow Guards:** Slip-on elbow guards may be worn over or under a riding jersey. Make sure the guards are comfortable and fit properly without restricting movement.
- **Riding Pants, Hip Pads and Knee Pads:** Wear special riding pants made of leather, denim or synthetic materials. Hip and knee pads may be built into the riding pants or purchased separately.
- **Riding Boots:** Choose special motocross (MX) boots made of thick leather with steel reinforcements. Go one size larger than your normal shoe size to accommodate thick socks to cushion your feet and wick away moisture. These boots also provide the best grip on footrests and help you keep your footing when you get off your ATV.

Additionally, if you're allowed to ride ATVs on the roads where you live, AR 385-10 requires you wear a brightly colored, outer upper garment during the day and a reflective upper garment during the night.

Ride the Right Way

Here are the golden rules for riders provided by the All-Terrain Vehicle Safety Institute:

- Always wear a helmet and other protective gear.
- Never ride on public roads because other vehicles could hit you.
- Never ride under the influence of alcohol or other drugs.
- Never carry a passenger on a single-rider ATV.
- Ride an ATV that's right for your age.
- Supervise riders younger than 16; ATVs are not toys.
- Ride only on designated trails and at a safe speed.

and even worse for my daughter," he said. "I'd already missed the first 15 months of her life being on deployment. Not being there for the rest of her life would be terrible."

The Ugly

Ignoring risks won't make them go away. Ignore them long enough and they have a way of making you go away. The events below are based upon an accident investigation conducted by the U.S. Army Combat Readiness/Safety Center. The names of the individuals involved have been changed to protect their privacy.

During a holiday weekend, Staff Sgt. Jerry Pope took his daughter and another Soldier camping on a riverbank near the post. After scouting out an undeveloped campsite on the river's west bank, the three returned home, where Pope loaded his ATV and their camping gear onto a trailer. Pulling it behind his 4x4 pickup, the three returned to the campsite. When they arrived, they unloaded his utility-type ATV — with his helmet attached to its rear rack — and set up camp. Cooking chicken and hot dogs, they called another friend, Don Freeman, who joined them about 9:30 that evening. Meanwhile, Pope fished and drank beer.

About 10:10 p.m., Pope got on his ATV and left the campsite wearing shorts, a T-shirt and sneakers. There was no moon out that night, so visibility was limited. About 20 minutes later, while traveling on an undeveloped dirt and gravel road, Pope lost control of his ATV, left the road and crashed. During the process, his ATV struck two trees, spun and then flipped back onto the road. Pope, who also landed on the road, was not wearing his helmet and suffered severe head injuries.

Pope's daughter and his two friends stated they heard the sound of his ATV for some 20 minutes after his departure. About 10:35 p.m., Freeman left the campsite to return home. Driving out of the campsite area, he used the same dirt and gravel road Pope had been riding on. After driving about one-third of a mile, he saw Pope and his ATV lying in the roadway. Stopping, he called 911, placed his phone on "speaker" and began CPR, taking instructions from the dispatcher. At the same time, the dispatcher notified the local fire department, an ambulance and state police to the accident.

Unfortunately, Pope could not be revived and died from his injuries. But it didn't have to end that way. A few simple precautions could have prevented his death.

First, he could have worn his helmet. No piece of PPE is more important. And it's not just something racers, like Delong, need to wear. Remember Michaels? He wasn't racing or doing jumps. He hit a patch of ice while hill climbing and wound up tumbling downhill with his ATV close behind. With his fractured skull, he missed the grim reaper by a very slim margin. Unfortunately, for Pope there was no margin.

Pope could have chosen not to drink before riding his ATV. He had a history of alcohol problems. Whether he was legally intoxicated was not known when the investigation was conducted. What is known is mixing the bottle with the throttle can add huge risks when operating vehicles such as ATVs. Even when riders don't "feel" impaired, alcohol has already affected their judgment. When people drink to get a buzz, it's basically to alter their mindset. Sadly, such mind-altering experiences can have life-altering consequences.

And then there was another risk Pope apparently did not consider. Remember, it was a moonless night. Although Pope didn't exceed the posted speed limit, the low visibility called for him to ride slower than he did. But, sadly, prudence didn't prevail.

The lessons learned from this may help other Soldiers who ride ATVs, but they won't do Pope any good. Nor will they comfort his Family, which has lost a husband and father. For them, all that remains is the grief of losing someone they loved. They know only too well that dying in a preventable accident is an ugly way for any Soldier's life to end.

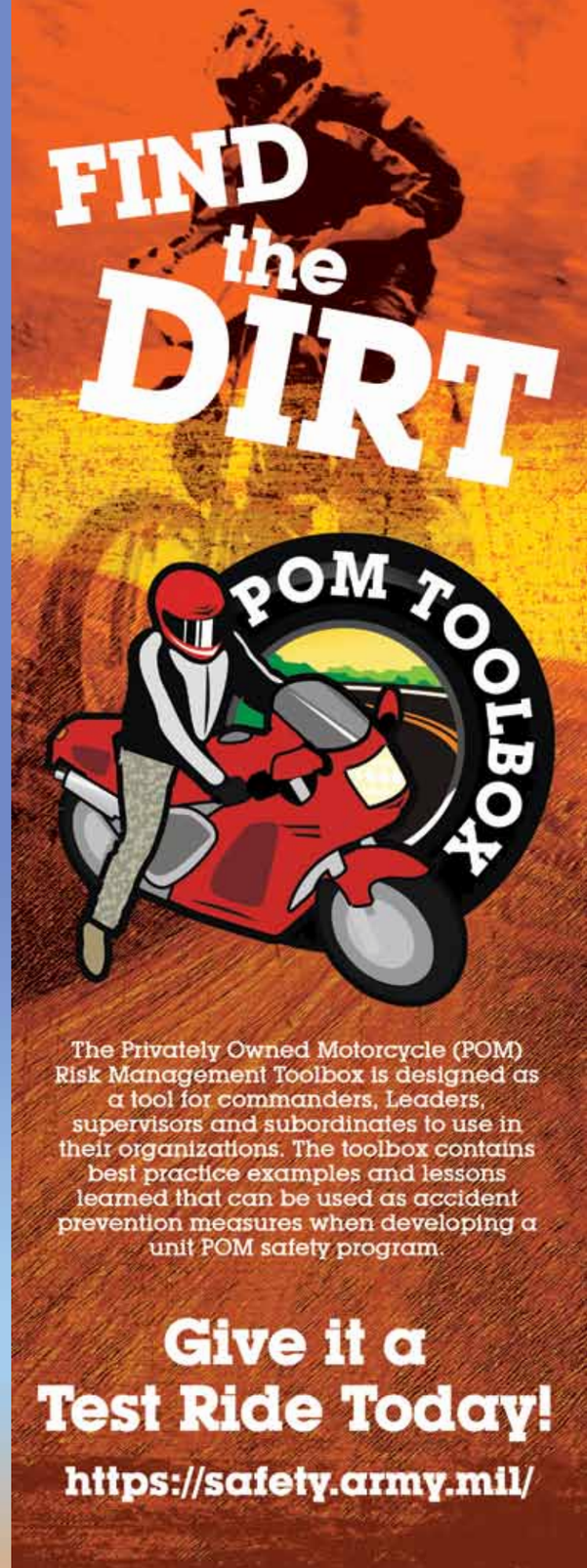
BY THE NUMBERS

If you think off-duty all-terrain vehicle (ATV) accidents for Soldiers are rare, guess again. Between Oct. 1, 2004, and July 2, 2010, ATV accidents killed 17 Soldiers and injured another 106 severely enough they lost time away from their units.

While ATV riding is popular year-round, the months of March through July see the greatest number of accidents, although numbers remain relatively high through October. When a Soldier is riding also makes a difference. While the majority (79 percent) of non-fatal accidents occurred during the day, nighttime crashes accounted for 71 percent of all fatalities.

Helmets, alcohol and speed were other factors considered in these accidents. While some Soldiers apparently believe helmets aren't needed when riding ATVs, the facts showed those who wore them were nearly six times more likely to survive an accident. And alcohol, so often referred to during safety briefings when talking about drinking and driving, was a factor in more than one-third of the fatal ATV accidents. Speeding — often an issue in automobile and motorcycle accidents — was less of a factor in ATV accidents. However, even so, 14 fatal and non-fatal accidents involved speeding riders.

There is another issue worth noting. Three of the fatally injured Soldiers were riding as passengers. Because most ATVs are designed to carry only the operator, adding a passenger makes ATVs much harder to control. And when riders lose control, they can put themselves and their passengers in serious danger.



Fright Night

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Halloween is a time of fun and excitement for both children and parents. For the unprepared, though, it can have tragic consequences.

Halloween is a dangerous time of year for children. According to the Centers for Disease Control and Prevention, young pedestrian deaths were four times higher Halloween evening than any other night of the year. Fortunately, by implementing a few safety controls, parents can help mitigate many of the hazards children face while trick-or-treating.

Pedestrian Accidents

Halloween consistently ranks as one of the most deadly days of the year for pedestrians. Here are some control measures to help keep children safe:

- Give your child a flashlight to carry or attach a glow stick to their costume so they're more visible to motorists.
- Remind children to look both ways before crossing the street.
- Walk only on established sidewalks or stay as close as possible to the shoulder of the road. If children are walking in a group, walk single-file.
- Look both ways before crossing the street and only cross at corners. Do not hide or cross the street between parked cars.
- Don't allow children to skateboard, rollerblade or bicycle while trick-or-treating.
- Remind children not to assume the right of way. Drivers often have difficulty seeing trick-or-treaters.

Costumes

When purchasing a costume, look for the words "flame retardant" or "flame resistant." These costumes are more fire-safe. Adults should also keep the following safety tips in mind:

- Make sure the eye holes in your child's costume are wide enough to offer unobstructed vision. As an alternative, use face paint instead of a mask.
- Ensure the costume is light-colored and bright enough to be visible to motorists. If not, decorate the costume and/or treat bag with reflective tape.
- Never carry candles, torches or other open flames as part of a costume.
- Costumes should be short enough to prevent tripping.
- Costume accessories such as knives and swords should be made of flexible and soft material. Hats and scarves should be secured to the costume to prevent them from slipping over the child's eyes.
- Children should wear walking or running shoes while trick-or-treating, and shoelaces should be kept tied.

Pumpkin Carving

Pumpkin carving is another fun Halloween tradition. However, sharp knives and

DID YOU KNOW?

Children aren't the only ones who need to be especially vigilant on Halloween. According to Safe Kids USA, drivers should:

- Slow down in residential neighborhoods and school zones. Remember that popular trick-or-treating hours are during the typical rush-hour period of 5:30 to 9:30 p.m.
- Be especially alert and take extra time to look for kids at intersections, on medians and on curbs. Children are excited on Halloween and may move in unpredictable ways.
- Slowly and carefully enter and exit driveways and alleys.
- Reduce any distractions inside your car, such as talking on the phone or eating, so you can concentrate on the road and your surroundings.

other carving instruments can be deadly in the hands of inexperienced children. It may be easier and safer for the parent or an older child to carve and let younger children scoop out the pumpkin's "guts." If you feel your child is not ready to help carve a pumpkin, consider decorating it with markers, paint or stickers instead.

Abductions

Every year, kidnappers take advantage of Halloween to do the unthinkable. To keep your children safe from abduction, follow these guidelines:

- Avoid trick-or-treating alone; walk in groups or with a trusted adult.
- Only go to homes where you know the residents or the resident has their outside lights on.
- Do not allow children to get into cars or talk with strangers.
- Securely place emergency identification information (name, address, phone number) on the child's costume or on a bracelet.
- Teach your child to make a scene if anyone tries to grab him. Tell him to loudly yell, "This person is not my father/mother!" and make every effort to get away by kicking, screaming, biting and resisting.
- For older children, be sure to agree on a specific area they will be going and a time when they will return home. Provide them with a cell phone or a handheld radio they can use in an emergency.

Treat Inspection

It is also important to inspect your children's treats after they've finished trick-or-treating. Some businesses even offer free X-ray analyses of candy, which will show any foreign objects embedded in the treats. To be on the safe side, only allow your children to eat factory-wrapped treats. Immediately discard any treats that look suspicious and avoid eating homemade goodies unless you know the cook well. It's also a good idea to feed your child before trick-or-treating so they are less tempted to eat any candy before you can inspect it.

Unfortunately, there's no real "trick" to making Halloween a "treat" for your children. But by putting safety first, you'll help ensure it's a night filled with fun, not regret.

Fall FUN!

Army Safe is Army Strong and that starts with a Soldier's Family. Have the information to help you and your Family stay SAFE.

Family engagement Kit

https://safety.army.mil

Be prepared this fall and get your own Family Enagement Kit

TODAY!

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ARMY SAFE is ARMY STRONG

A BAND OF BROTHERS & SISTERS

LIVE WIRE

CHIEF WARRANT OFFICER 4 LAWRENCE J. COPLEY
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In July 2003, my wife and I were eyeing a three-bedroom brick rancher on a large lot just outside Elkview, W.Va. After we made an initial inspection of the house, we decided to make an offer. Following a home inspection, our loan was approved. We had bought our first home.

As soon as we settled in, I began taking care of minor problems the home inspection had uncovered. I'd worked with my father growing up, so I had a solid foundation on how to do odd jobs around the house and believed I could repair these issues myself. If I encountered anything unfamiliar, I figured I always had the Internet to guide me.

It was during this time I discovered an extension cord in the attic. Upon further inspection, I found the cord had been used by the previous owner as the wiring for a motion-sensing light. Even though I had some electrical knowledge, I knew I was going to need some help evaluating the house's wiring system. So, I called my neighbor, Jerry, who was a certified electrician, and asked him to give me a hand.

After Jerry inspected the electrical system, he recommended I install ground fault circuit interrupters, which are designed to protect against electric shocks near any water sources. I also decided to rewire all the outlets with a ground wire since they were not originally grounded to the breaker box.

Jerry was a great teacher, inspector and helper. He told me what tools I needed to do the job properly and even loaned me a free-ranging amp meter to test the load on each of the new electrical circuits. Eventually, I began wiring areas of the house by myself. When I finished wiring a circuit, Jerry would inspect it for correct installation. In just a short time, I'd become the Bob Vila of Hazel Drive — or so I thought.

One Saturday morning, I awoke early so I could get to work on the house. I gathered my electrical tools and identified the rooms I wanted to split into separate circuits. I then turned off the power at the breaker box and crawled under the house. After identifying what I thought was the correct wire, I went to work.

At this point, I would normally use a non-contact voltage detector to ensure I had selected the right wire. This time, however, I skipped this critical step because I was sure I was right. With wire pliers in hand, I squeezed. Immediately there was a loud pop, a bright flash and a loss of power to the whole house!

My wife began yelling at me in a panicked voice, asking if I was OK. I assured her I was fine and that I would come tell her what happened as soon as my eyes recovered from the flash. I

then inspected the damage to my wire pliers and made my way out from under the house. After convincing my wife I was all right, I finished rewiring the circuits I had originally began working on, as well as the one I destroyed.

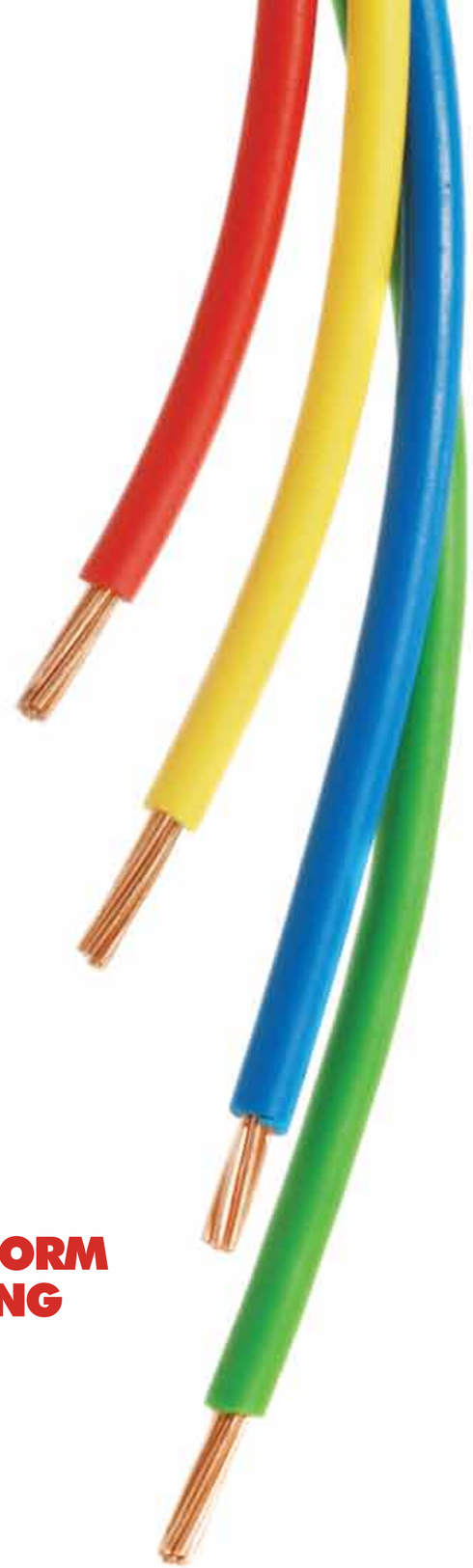
So what went wrong? After all, I had sought out a professional to help me. Jerry had been my teacher, helper and inspector throughout this project. I had spared no expense and bought the right tools to do the job safely. I then realized I was the weak link in the chain. I had become comfortable with rewiring the house and working with electricity, which led me to be overconfident.

When I look back at this accident, I see a chain of events that nearly ended in disaster. Sometimes, repetitious tasks become so familiar they become routine. My overconfidence led me to take a shortcut that could have cost me my life. I was so confident in my ability that I skipped using the non-contact voltage detector to check for a live wire. What's more, I didn't even notice I had placed my other hand on the damp ground beside the foundation of the house when I cut the wire. I was the perfect path for the electricity to flow to ground.

What may have saved my life that day wasn't my skill or knowledge, but, rather, a $10 pair of wire pliers with rubber handles. Using those pliers was the only thing I did right. It does pay to buy the proper tools.

I wonder how many times we nearly have accidents without realizing it. How often do we place ourselves in harm's way by taking shortcuts? How many times do we perform routine jobs without thinking of the risks? Confidence is good, but overconfidence can be a killer.

Editor's note: Before performing any electrical work on your home, seek the assistance of a professional electrician.



"HOW many TIMES do we PERFORM routine jobs WITHOUT THINKING OF THE RISKS?"

Peer to Peer

And the Winners are...

The creativity and humor of Soldiers was on full display in the fiscal 2010 Peer to Peer Safety Video Competition. Plotlines involved rabid bunnies, a runaway doll car and a hand-washing superhero among others, but three videos stood above the rest to take the year's top prizes.

The first-place video, titled "Vehicular Safety — Cellphone Usage Version 2," was produced by Spc. Canaan Radcliffe of the 55th Signal Company (Combat Camera). The video portrays a tough, safety-conscious sergeant major on the lookout for distracted drivers. Sgt. Jeremy Antonson with the 88th MP Detachment claimed second place with "Speed Safety," which takes a humorous look at the excuses drivers often use when caught speeding. Coming in third place was "Hell on Wheels: Motorcycle Safety for Soldiers" by Spc. Andrew Enriquez, a Soldier with the Idaho National Guard.

The winners will receive certificates and "Safety Emmy" trophies from the U.S. Army Combat Readiness/Safety Center and share cash prizes totaling $3,750 from Better Opportunities for Single Soldiers to benefit their local BOSS chapter. Congratulations to this year's winners!

More Power to You

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Mid-October in the Rockies is no place to be on an outing by yourself, especially if you're unprepared. During this time, the pilots at the High-Altitude Army Aviation Training Site (HAATS) typically spend their search and rescue time looking for lost hunters, but not so on this day.

Two out-of-state hikers decided to climb Holy Cross Mountain, which is close to Leadville, Colo. Armed with only tennis shoes and a pack of cigarettes, the hikers climbed to the summit. On the way down, one of the hikers picked up the pace back to camp only to stop at a second trailhead to wait for his friend, who never arrived. Ground teams began searching the following day as 18 inches of snow fell in the high country. The next day, HAATS dispatched an OH-58A to aid in the search.

The aircrew's first mission was to insert six individuals and a search dog to a location where searchers believed the lost hiker had built a fire the previous day. The landing zone (LZ) was about 12,500 feet mean sea level (MSL) in fresh powder and swirling winds. With the lost hiker expected to have hypothermia at this point, there wasn't a whole lot of time to debate whether the aircraft could make it. There was no time for guessing.

Two passengers and a search dog were loaded onto the aircraft and inserted into the LZ, followed by a second lift of two passengers until all were in place. Shortly after arriving, they found the lost hiker close to one of the ground crews and took him to safety. Although suffering from hypothermia and frostbite to his ankles, this man lived to tell his tale. Others have not been as lucky.

So how did these pilots land a fully loaded OH-58A at 12,500 feet in swirling wind and whiteout conditions? The answer is they didn't "think" they could make it; they knew they could! They were able to place ground teams in a position to rescue the hiker and save his life, instead of becoming victims themselves. It was neither magic nor recklessness on the pilots' part. They clearly understood three principal points of power management: understanding the environment, their aircraft and themselves.

Understanding the Environment

First, the pilots understood their environment, not simply because Holy Cross Mountain is in their backyard, but because the pilots understood winds and density altitude. Winds move over and around obstacles in a consistent and, therefore, predictable manner. Understanding the mechanical turbulence created by these winds allows a pilot to avoid "bad air" — the downdraft/turbulent areas that require extra power to overcome — that could result in loss of aircraft control. The pilot understood that staying in "good air," or the updraft sides of canyons and valleys, would increase his lift, effectively improving his margin of safety. This provided useable power that wouldn't normally be present on a calm day at the same density altitude. Winds also played a part in mitigating whiteout on short final to the LZ by keeping the snow cloud generated by the rotor wash behind the pilot's field of view. This allowed the pilots to attempt the landing with less than out-of-ground effect (OGE) power available because they could use the ground effect safely.

Density altitude is another critical environmental factor. The aircraft has only so much power, and increasing both the pressure altitude and temperature reduces that. However, in this case, there was an increase in the pressure altitude by being at 12,500 feet MSL. The temperatures in October, especially after a cooling snowstorm, did not increase the density altitude to the point where a safe landing could be accomplished with the given loads. Aviators correct for density altitude in their performance planning, whether they realize it or not, any time they use temperature and pressure altitude to determine a power number. This is also true in the tabular data used to determine the power numbers for this mission.

Understanding the Aircraft

The second principal is they understood the aircraft. The single-engine OH-58A is capable of some amazing feats if you understand what it takes to fly it. The pilots understood there would be no OGE power available to get into the LZ. This might have been a limiting factor were the winds lighter (due to whiteout) or the LZ was a small, confined area (possibly requiring OGE power to depart). Neither was the

> “Knowing your **PERSONAL LIMITATIONS** will help you make **SMARTER** and **SAFER DECISIONS.** This is extremely important with **SINGLE-PILOT AIRCRAFT.**”

case, so the pilots were able to make a controlled approach and use in-ground-effect power to set the aircraft down gently.

The OH-58 also has a caution located in the performance planning section of the operator's manual that pilots often see, but seldom remember. The caution states that low-altitude maneuvering flights at airspeeds below 35 knots are not recommended under conditions where power required to hover OGE exceeds maximum continuous power (available). Pilots don't often encounter this flight condition, so they typically forget this caution unless it's applied during search-and-rescue operations in the high country. This caution, coupled with the knowledge of how to avoid loss of tail rotor effectiveness, was in the back of the pilots' minds as they maneuvered in the search area. They mitigated this problem by avoiding downdraft and tailwind conditions and maintaining airspeed, especially while turning in the canyons and valleys.

Understanding Themselves

Third, the pilots understood themselves. While most of us aviators don't like to admit it, we all have personal limits. It's a matter of understanding the limits of your personal abilities. Knowing your personal limitations will help you make smarter and safer decisions. This is extremely important with single-pilot aircraft. There is nothing wrong with admitting you have never done a particular kind of mission or task before, or that it is outside your comfort level.

To expand your envelope of abilities, you must train with a seasoned professional on the tasks you have never done before. Someone wanting to learn how to fly in mountainous terrain or overwater operations would not go out with a flight instructor who had never done these tasks. With a flight crew of more than one person, knowing your personal limitations will allow you to draw upon the experience level of the entire crew. The goal of pilots "understanding themselves" is not to be the limiting factor in success or failure. If your performance planning says the aircraft can do the task required, the pilot, as a professional aviator, should not be the limiting factor.

Summary

You can't really sum up power management and its tactics, techniques and procedures in this one article. Each aircraft and condition provides its own challenges. The three points that are fundamental to understanding power management apply to all aircraft and pilots. Understanding and applying knowledge of the environment, the aircraft and yourself may mean the difference between making a successful rescue or becoming a victim.«

Lead, Follow or Get Out of the Way!

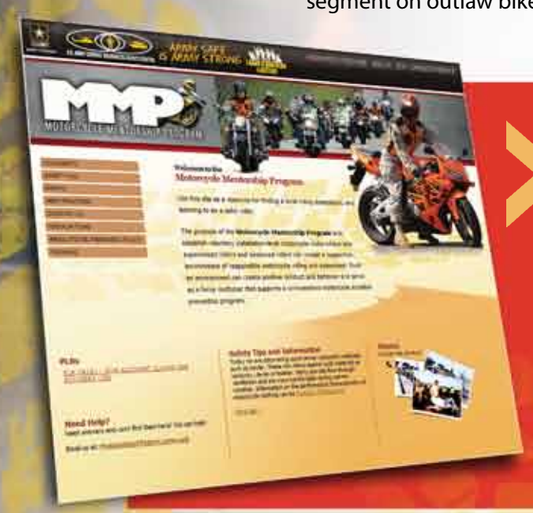
EARNIE EAKINS
Driving Task Force
U.S. Army Combat Readiness/Safety Center
Fort Rucker, Ala.

In the Army, Soldiers have an unwritten code about taking care of their brothers and sisters in uniform. Part of that code is that we would never intentionally do anything to make our brothers and sisters look bad. I can only assume that this code is partly tradition, partly honor and maybe so we can expect the same courtesy from others. The tragedy of our time-honored code is that many military motorcyclists choose to leave it behind.

How is it that a band of professionals separate themselves from one of the greatest attributes of Soldiering? Unfortunately, the few that abandon our code give the rest of us a bad name. Is it because the "bad boy" attitude of motorcycling is so great that some are drawn into it? Maybe a little history lesson will help us understand why.

"One Percenters" are the bad-boy bikers associated with outlaw motorcycle clubs often celebrated in American film and print. The History Channel's segment on outlaw bikers helped form public opinion and made the history of bad-boy bikers a legitimate subject. The definition of a "biker" is a person who lives to exhibit the bad-boy motif. That's in contrast to a "motorcyclist." Motorcyclists are professional at their sport, aiming to be the best and planning to live long enough to fully develop their skills. Sadly, because of the public's perception of riders, Army motorcyclists have to work very hard to avoid being categorized as bikers.

In reality, people have a "herd" mentality that brings them together in groups. Since ancient times, people have grouped together for protection. That helps explain the code between Soldiers. However, this herd mentality also explains the One Percenter's negative reaction toward others on the road, including drivers and motorcyclists who obey the law. It also explains the mentality of motorcyclists toward automobile drivers, many of whom drive in a way that threatens riders. It's a matter of survival or keeping threats at a distance. The problem is we, as



YOU'VE GOT OPTIONS

When you buy that new sport bike or cruiser, you can bet there will be plenty of options for you to choose from. However, did you know the best option is a "freebie" available for Soldiers? That's right — just visit the Motorcycle Mentorship Program (MMP) website at https://safety.army.mil/MMP/. When you get there, click on the "Associations" button to find the nearest MMP. There you'll find seasoned riders who will help you keep the rubber on the road and the fun in the ride.

> **MEMBERSHIP** in an **MMP** gives NCOs an **OPPORTUNITY** to positively **SHAPE** Soldiers' **BEHAVIOR** outside the gates, where so many **DIE** in **NEEDLESS ACCIDENTS.**

Army motorcyclists, would like to think of ourselves as the good guys who follow the rules all the time. However, that's not always true.

The truth is we are ambassadors for the sport of motorcycling every time we start our engines. When we see a rider wearing a One Percenter patch or even one of our brothers or sisters stopped by the police, we often snicker as we pass by thinking, "Better him than me." We seldom get involved when other Soldiers are giving us a bad name off duty even though, were we on duty, we would take corrective action. The Army is now seeing this attitude spread among our senior NCOs and junior officers. Why such a double standard between on- and off-duty activities?

Because we've allowed a few riders to give us a bad name, the first question asked when a Soldier has a motorcycle accident is, "What did they do wrong?" That question may seem unfair. However, in the Army — unlike the civilian world — most fatal accidents are the result of the rider's actions, not those of other motorists. Why is this the case? Is it because of ignorance, lack of skills or neglect? Most Army motorcycle fatalities are the result of at least one of these factors.

As Army riders, we face growing challenges. Fuel prices have made riding more popular and more Soldiers are taking to the road on two wheels. As that happens, it increases the chances a Soldier will make a wrong decision that can make all of us look bad. As riders, we are a minority among Soldiers and that's not likely to change in the foreseeable future. For our own benefit, we need to ride so that we protect ourselves, each other and our image as riders in the Army.

The Army Motorcycle Mentorship Program (MMP) is the greatest tool we have available to do that. Membership in an MMP gives NCOs an opportunity to positively shape Soldiers' behavior outside the gates, where so many die in needless accidents. The MMP is steeped in Army values and the tradition that we never leave a fallen comrade behind. Let's use our bond as a "band of brothers and sisters" to reduce losses among Army riders.

TRAVEL RISK

TRiPS

PLANNING SYSTEM

https://safety.army.mil

TRiPS has a new feature that helps subordinates and their supervisors more effectively discuss travel plans. On the "Review" page while filling out an assessment, there is a comment section for Soldiers and Army Civilians to share information about their trip with their supervisors. Feedback can also be provided by supervisors when they approve or disapprove the assessment. This two-way communication can capture details and guidance to ensure the trip is a safe one.

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A BAND OF BROTHERS & SISTERS

Happy Feet

DR. PAUL ST. ONGE
Qinetiq North America
U.S. Army Combat Readiness/Safety Center
Fort Rucker, Ala.

Nowadays, there is an overwhelming selection of shoes, sandals and boots available for just about every activity. Unfortunately, the No. 1 word in footwear is "fashion," so color and aesthetics often trump design, proper fit and comfort. However, matching the correct footwear to the activity can increase performance and reduce the potential for injury.

When choosing footwear, it is important to consider both the movement requirements of the activity and a comfortable fit. A correct fit should match the natural outline and contours of the foot and be snug, but not tight. While standing, there should be about a half-inch of space beyond the longest toe, and the toes need to be free to wiggle. The shoe's arch and heel should be supportive and match the curving contours of the bones of the foot and ankle. The shape of the top of the shoe, tongue and laces should be adjusted to match the top of the foot to provide a secure fit without squeezing or pinching.

In addition to fit, the foot should not move excessively, the toes should not bump against the front of the shoe and there should not be areas of concentrated pressure. Uncomfortable shoes can cause blisters or pain that can limit performance, happiness and physical activity. Shoes that cause feet to tingle, fall asleep or go numb can cause permanent nerve injury and must be replaced.

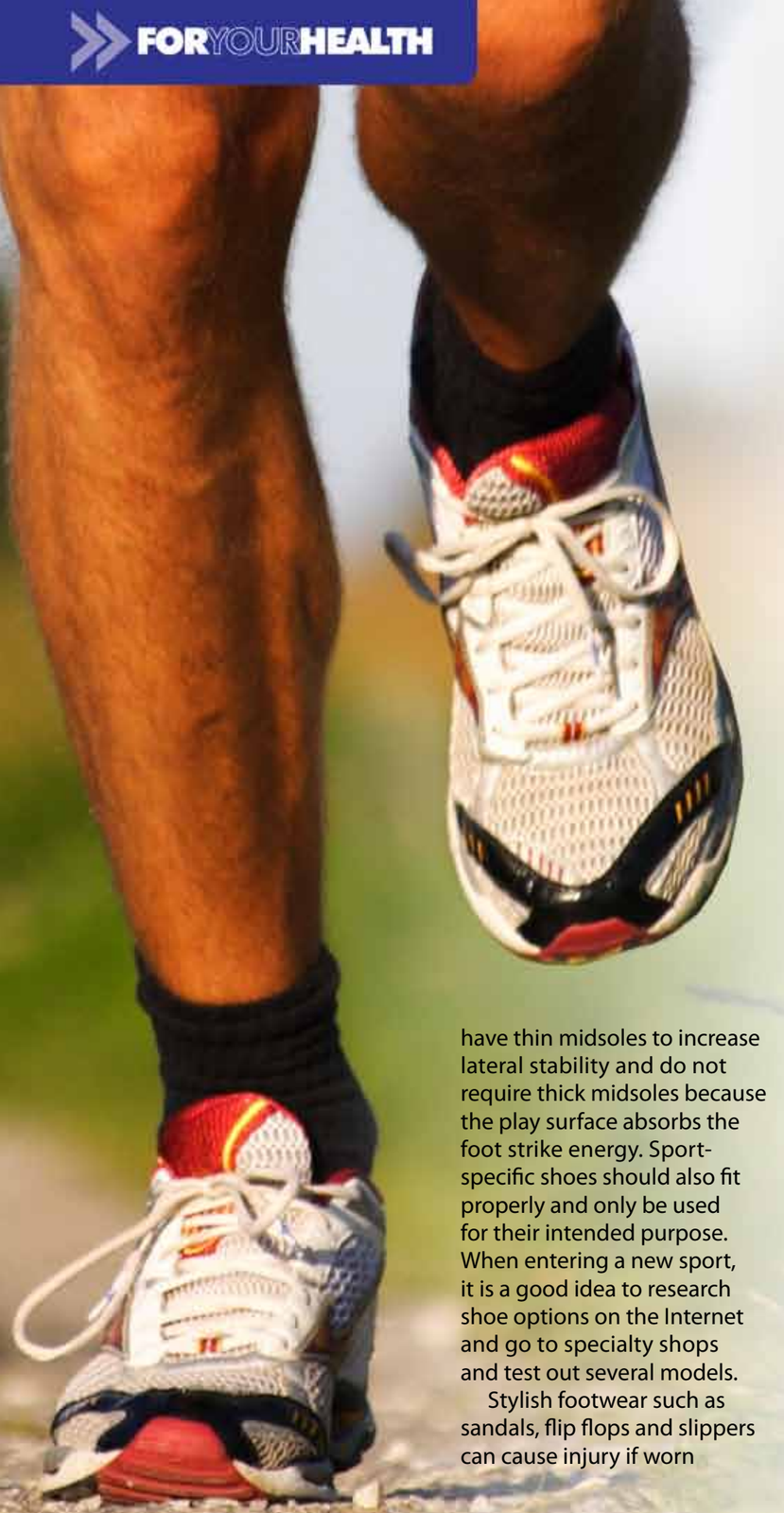
When fitting shoes, it is important to focus on comfort first, shoe design next and style last. Shoe designs can be divided into seven basic categories: dress shoes; boots used for hiking, hunting and work; court shoes used for basketball, tennis, aerobics, cross-training and volleyball; running/walking shoes designed specifically for those activities; field shoes used for golf, baseball, football and soccer; sport-specific shoes used for a single purpose such as rock climbing, bicycling, water sports and track and field events; and stylish footwear, including sandals, flip flops and slippers.

> "When **FITTING SHOES**, it is **IMPORTANT** to **FOCUS** on **COMFORT** first, shoe **DESIGN** next and **STYLE** last."

The basic characteristics that differ between designs are the outsole, midsole and lateral stability provided by the shoe. The outsole is the bottom of the shoe that contacts the ground. The midsole is the foam, gel or air section that absorbs energy when the foot strikes the ground. Lateral stability is the shoe's ability to support the foot and ankle during side-to-side motion. Boots, for example, typically have tough, non-slip outsoles and thick, cushioning midsoles and offer a high degree of lateral stability provided through upper materials that cover the ankle.

Court shoes and cross-trainer/aerobic sneakers are designed to have a non-marking sole, high to moderate energy-absorbing midsoles and provide good lateral stability with either above-the-ankle (high-top) or below-the-ankle (low-top) designs. Running and walking shoes are specially designed for forward movements and are constructed with energy-absorbing midsoles. However, these midsoles are unstable during lateral movements and can cause ankle injury when used for aerobics or sports that require quick side-to-side movements.

Field shoes typically have cleats integrated into the outsole to aid with traction on grass and dirt and may be either high- or low-top. They



have thin midsoles to increase lateral stability and do not require thick midsoles because the play surface absorbs the foot strike energy. Sport-specific shoes should also fit properly and only be used for their intended purpose. When entering a new sport, it is a good idea to research shoe options on the Internet and go to specialty shops and test out several models.

Stylish footwear such as sandals, flip flops and slippers can cause injury if worn often or in the wrong setting. Sandals and flip flops are often loose fitting with open toes and/or large ventilation holes that can cause broken toes. These also provide little to no lateral support, or have slick outsoles and thick or thin midsoles that could cause a sprained ankle or a fall. The loose fit requires active muscle contraction to keep the shoes on, which can cause muscle strain, and presents an often-overlooked tripping hazard. These shoes should never be worn when sports, athletic leisure activities or emergency situations are possible. When walking on the beach, these are great; however, wearing these shoes when running after a football or mowing the lawn can lead to disaster.

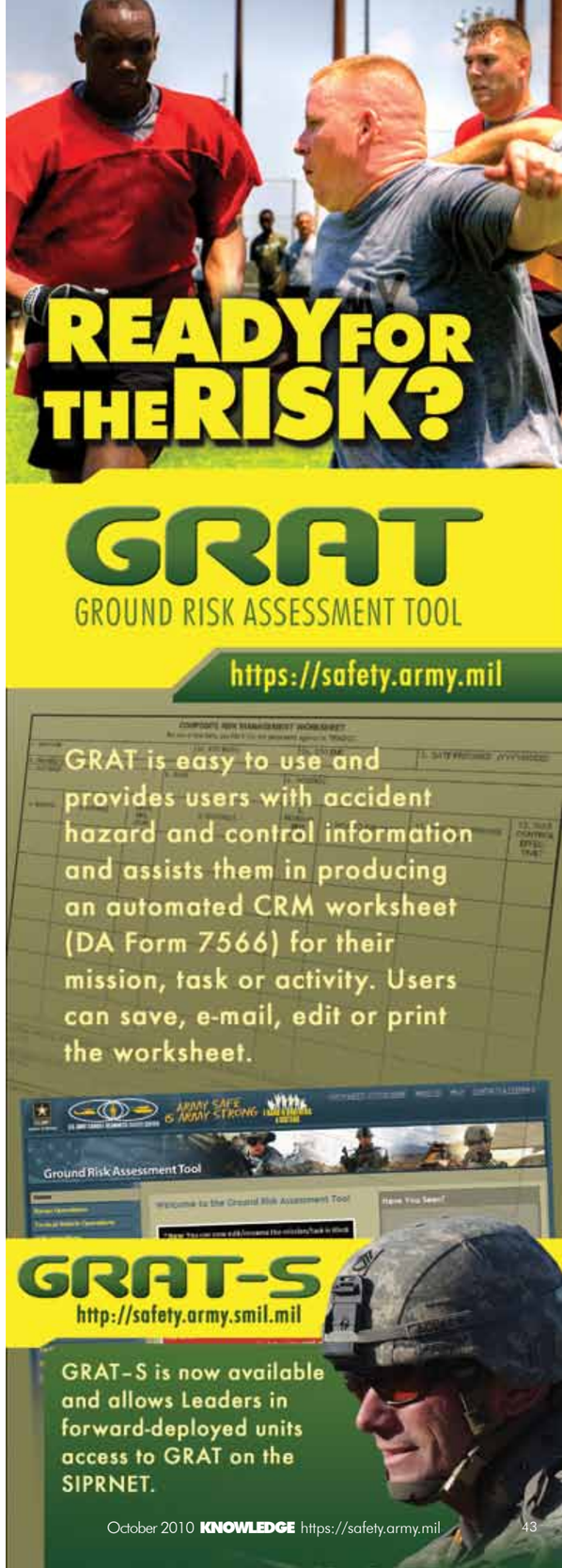
It is best to shop for shoes at the end of the day or after a long walk or run. Foot size can increase up to half a shoe size throughout the day or a workout because of swelling and expansion of the soft tissues in the feet. Also, always bring a set of the socks that will be worn with the new shoes. If you are unsure what socks to use, plan to purchase new socks at the same time.

At the store, try on at least three different brands. Shoe designers constantly change features and fit. A brand or a model that fit perfectly before may not fit as well as another brand or model the next time. Select shoes for the foot and ankle support features they provide and the activities for which they were designed, not for color or style. When trying on new shoes, take time to properly adjust and tie the laces for the best possible fit. Once the shoe is fitted, test each model by performing the moves you will use in the gym or on the court, field or road.

When trying on new shoes, don't be embarrassed to take the shoes for a real test. Some stores will even allow shoes to be tested outdoors. How each pair responds during real-world movements such as running, walking, zigging and zagging, kickboxing, jumping, skipping or kicking a ball should be evaluated. Test running and walking shoes and boots on an incline to evaluate uphill and downhill climbing performance. If the shoe does not feel like an extension of your foot, it is not right for you. The shoe should fit snugly without pinching, rubbing, crushing the toes or allowing the heel to move during most movements.

> "**SELECT** shoes for the **FOOT** and **ANKLE SUPPORT** features they **PROVIDE** and the **ACTIVITIES** for which they were **DESIGNED**, not for **COLOR** or **STYLE**."

When purchasing shoes for a specific activity, it is important to select those designed to match the physical movements of the task. Shoes that are designed for one purpose should only be used for that purpose. If you are selecting your shoes just because they look cool, you may end up wishing you had gone with something a little less cool and a bit more realistic.



LOST

Accidents occurred between June 1-30, 2010

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.

AVIATION

AH-64D

CLASS A

- The aircraft impacted terrain during night high-altitude mountain environmental training, resulting in Class A damage.

CH-47D

CLASS A

- During a rescue mission, the aircraft's main rotor blade (MRB) struck rising terrain while attempting to land. The aircraft's fuselage and MRB received significant damage.

CLASS C

- The left-side emergency exit door separated from the aircraft while in flight. The crew landed without further incident and recovered the damaged door.

OH-58D(R)

CLASS A

- The aircrew reported a loss of power while executing a right turn. They continued the turn to clear terrain and then applied power to gain airspeed; however, the aircraft continued to descend, entered a spin and then crashed into trees. The aircraft was destroyed.

- The aircraft contacted the ground shortly after takeoff from the forward arming and refueling point. The crew was able to egress with one injury; however, the aircraft sustained damage.

CLASS C

- The aircraft experienced an engine overtorque of 138 percent for one second and a mast overtorque condition of 123 percent for two seconds during manual throttle operations.

UH-60L

CLASS A

- The aircraft was Chalk 1 in a flight of four when it struck the ground during a descent. A postcrash fire ensued. Three Australian Soldiers and one American Soldier were killed.

CLASS C

- The aircraft's MRBs contacted a tree during descent to an unimproved landing zone. All four MRB tip caps were damaged, and one blade required depot-level repair.

RC-12K

CLASS A

- The crew reported loss of engine power during a go-around for engine-out training. The aircraft descended to ground impact, resulting in Class A damage.

RQ-7B

CLASS B

- The unmanned aircraft (UA) entered an uncommanded descent during the return leg of flight. The recovery chute deployed; however, the UA was never recovered.

CLASS C

- The UA incurred a generator failure during flight, followed by engine failure. The recovery chute deployed; however, the UA touched down inverted, causing damage.

LOSSES AVIATION

Class A/Fatalities as of Sept. 2, 2010

ATTACK	2/1
RECON	4/4
UTILITY	7/6
CARGO	4/0
TRAINING	0/0
FIXED-WING	3/0
UAS	6/0
TOTAL	26/11

GROUND

ACV

CLASS A

- A Soldier who was a rear passenger in a Mine Resistant Ambush Protected (MRAP) vehicle was killed when it overturned during a convoy security patrol. The gunner and a Soldier riding as the front-seat passenger were also injured.

- A Soldier was killed when he was pinned between an MRAP and the disabled Armored Security Vehicle he was preparing for towing.

- A Soldier died when he was ejected from an MRAP after it failed to clear an overpass, which caused the turret to separate from the vehicle.

CLASS B

- A Soldier suffered a permanent partial disability injury when he was ejected from an MRAP All-terrain Vehicle (ATV) during a convoy movement. The accident occurred when the right-rear tire blew, causing the vehicle to slide off the road and overturn down steep terrain.

AMV

CLASS A

- A Soldier was killed when he was ejected from an M998 HMMWV that overturned as the driver negotiated a curve in the road.

- A Soldier died when he was ejected from an M1151 HMMWV that overturned after it was rear-ended by a civilian vehicle.

CLASS B

- An M984 wrecker and the MRAP it was towing were destroyed when the driver lost control, causing the MRAP to fishtail and overturn. The accident resulted in a fuel spillage that ignited both vehicles.

LOSSES GROUND

Class A/Fatalities as of Sept. 2, 2010

AMV	14/6
ACV	11/10
PERSONNEL INJURY (includes weapons-handling accidents)	28/25
FIRE/EXPLOSIVE	5/3
PROPERTY DAMAGE	1/0
TOTAL	59/44

Personnel Injury

CLASS A

- Two contract range personnel and a Soldier were struck by rounds during live-fire training. One contractor was killed, while the other was struck in the shoulder. The Soldier suffered a graze injury.

DRIVING

POV

CLASS A

- A Soldier was killed when he drove his SUV through a "T" intersection, struck a tree and rolled the vehicle onto its left side. The Soldier's two passengers were transported for treatment.

- A Soldier and his civilian passenger were both killed when he lost control of his vehicle in a curve and collided with another Soldier's car head-on. The Soldier in the other vehicle was seriously injured and hospitalized for 17 days.

- A Soldier who was a passenger in a vehicle driven by an intoxicated civilian died when the driver lost control during a lane change, causing the vehicle to leave the road, strike a light pole and overturn. The driver was transported for treatment and later charged with reckless driving and driving under the influence.

- A Soldier was killed when he lost control of his vehicle while speeding, overturned and then struck a guardrail and several concrete pillars.

LOSSES POV/POM

Class A/Fatalities as of Sept. 2, 2010

CAR	36/37
SUV/JEEP	10/11
TRUCK	6/6
MOTORCYCLE	36/33
PEDESTRIAN	11/12
OTHER* (*Includes vans and ATVs)	3/3
TOTAL	102

Fiscal Year 2009: 98 Three Year Average: 108

POM

CLASS A

- A Soldier died when he lost control of his motorcycle while riding on a winding highway, went across the median and struck a guardrail. Police suspect alcohol was a factor in the crash.

- A Soldier lost control of his motorcycle and was later found lying face down in a ditch. The Soldier was hospitalized and is being maintained on life support equipment. The Soldier was not wearing his helmet or personal protective equipment.

OFF-DUTY

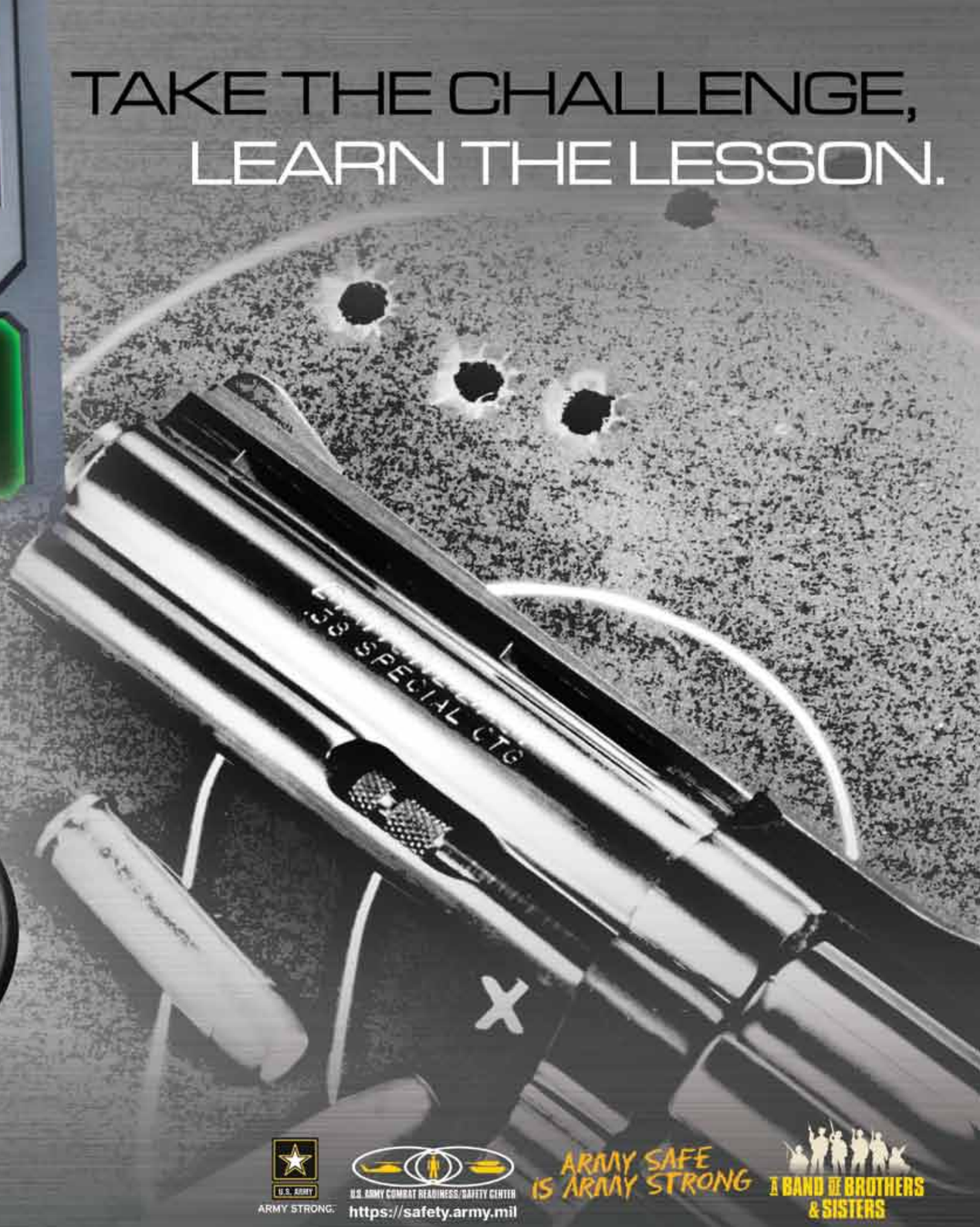
Pedestrian

CLASS A

- A Soldier was struck and killed by a vehicle when she stepped into a parking lot while en route to sick call.

Firearms Safety Techniques, an interactive site, is available for Soldiers, Family members and Civilians to learn about off-duty safe firearms handling. Visit the site for more useful firearms safety resources.

TAKE THE CHALLENGE, LEARN THE LESSON.



FIREARMS safety techniques

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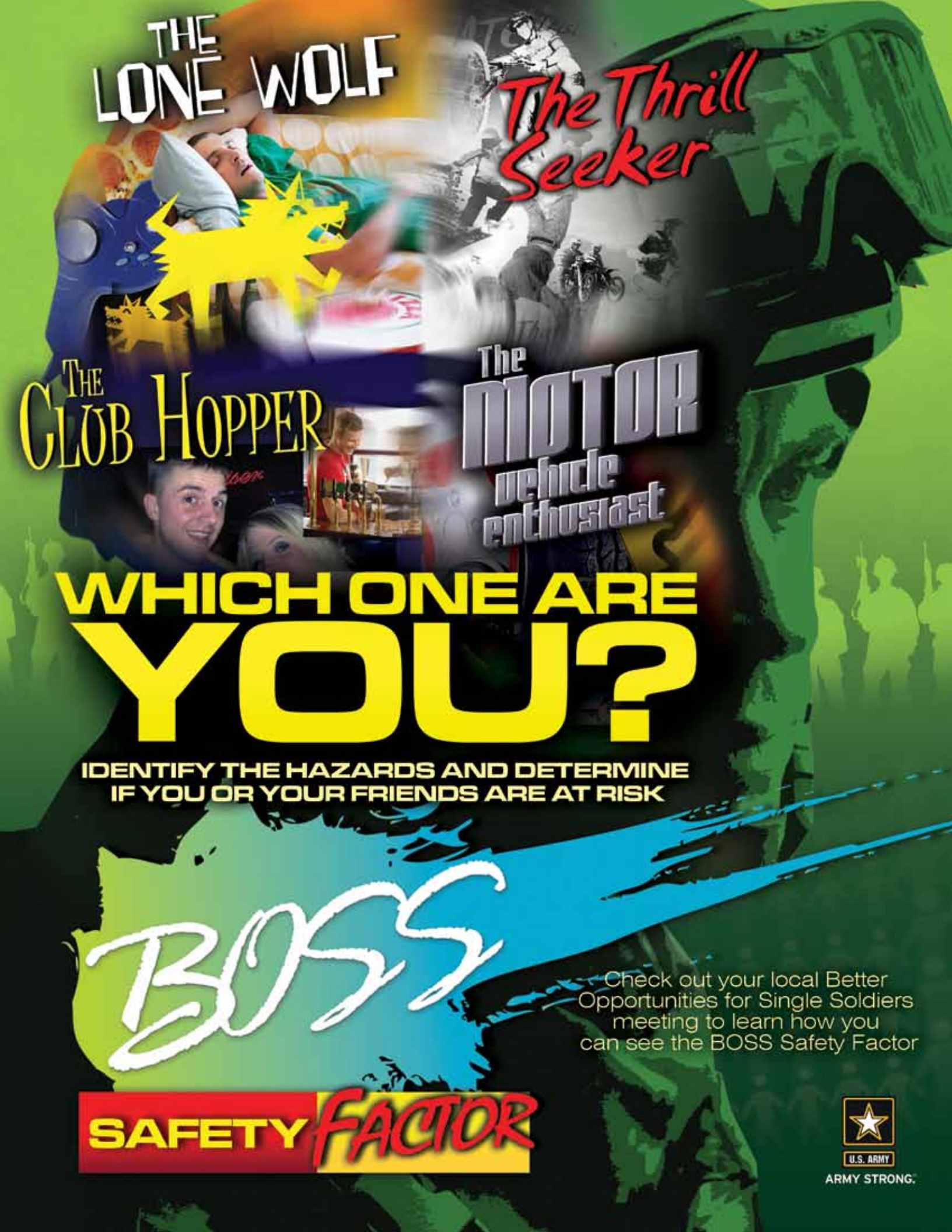
THE LONE WOLF
The Thrill Seeker
THE CLUB HOPPER
The MOTOR vehicle enthusiast
WHICH ONE ARE YOU?
IDENTIFY THE HAZARDS AND DETERMINE IF YOU OR YOUR FRIENDS ARE AT RISK
BOSS
Check out your local Better Opportunities for Single Soldiers meeting to learn how you can see the BOSS Safety Factor
SAFETY FACTOR
U.S. ARMY
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RANGE SAFETY: A LESSON LEARNED

KNOWLEDGE

VOL 4 NOVEMBER 2010

OFFICIAL SAFETY MAGAZINE OF THE U.S. ARMY

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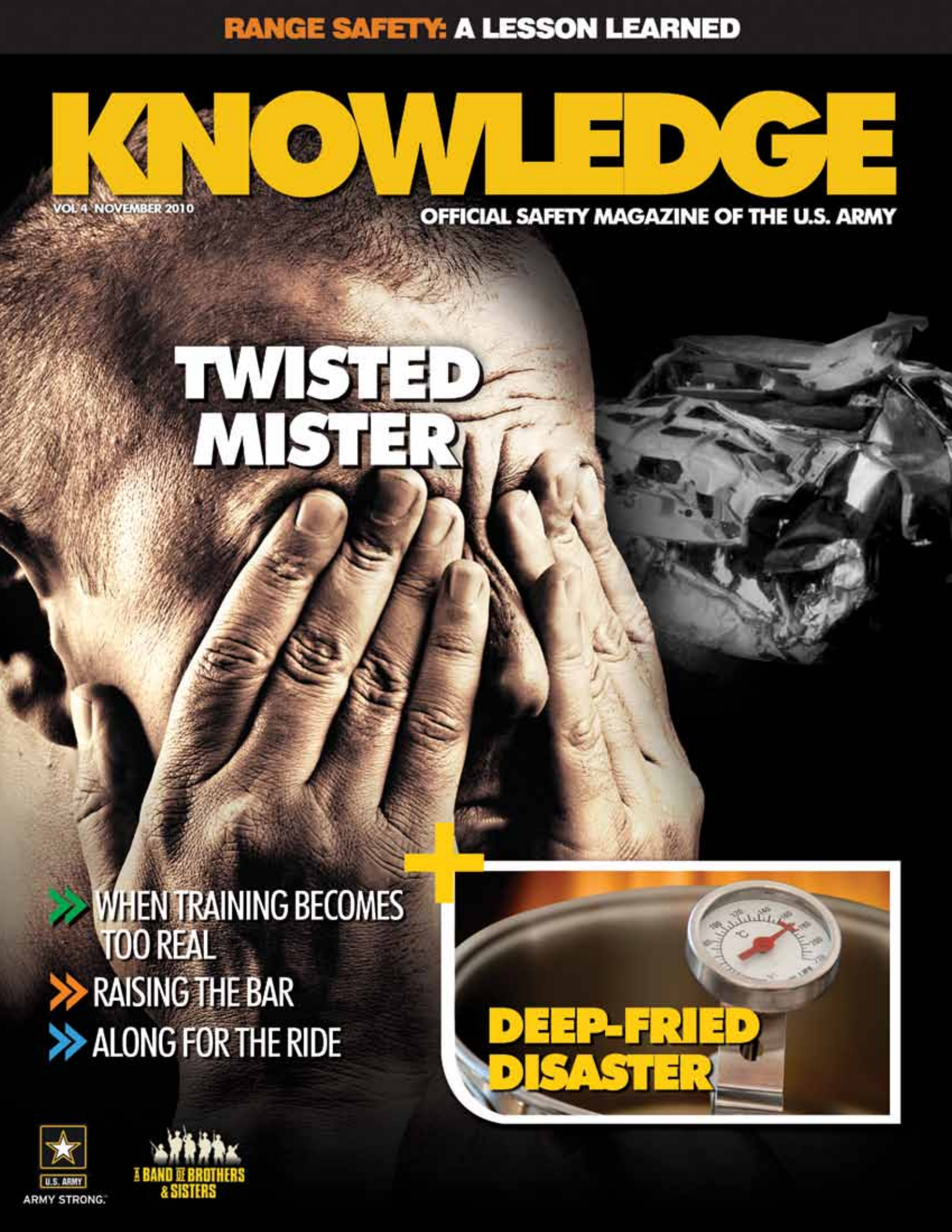

- WHEN TRAINING BECOMES TOO REAL
- RAISING THE BAR
- ALONG FOR THE RIDE

DEEP-FRIED DISASTER

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THE BAND OF BROTHERS & SISTERS

KNOWLEDGE

OFFICIAL SAFETY MAGAZINE OF THE U.S. ARMY

LEADERS SOLDIERS FAMILIES

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Mission statement: The United States Army Combat Readiness/Safety Center (USACR/Safety Center) supports our Army by collecting, analyzing and communicating 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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GIVING THANKS, LOOKING AHEAD

> "The senior **LEADER'S ROLE** is not only to also remain **ENGAGED**, but to **SUPPORT** their subordinate Leaders through **MENTORSHIP** and **EXAMPLE**."

This month, we honor the sacrifices of our men and women in uniform, past and present, and give thanks for the many blessings that distinguish the United States among all other nations in the world. I personally am thankful for the opportunity to serve alongside the Soldiers, Families and Civilians of this great Army. Each of you makes a tremendous impact every day, and I continue to be humbled by your service and sacrifice.

We have much to be thankful for as an Army. This past September, we officially transitioned from a combat mission to an advisory and assistance role in Iraq, marking the conclusion of more than seven years of armed conflict there and the transition to an Iraqi-led mission. Every member of our Army Family — Soldiers and Leaders on the front lines and those in support roles at the rear, loved ones maintaining watch at home and Civilian employees providing the foundation for sustained operations — has played a vital part in bringing this outstanding accomplishment to fruition. As we refocus our full attention to our continued role in Afghanistan, rely on the experience and knowledge you've gained thus far and the expertise of those around you to keep all your Soldiers safe and in the fight.

November is also the time of year we begin to compile the data outlining our Army's safety performance during the previous fiscal year. The good news is that, in fiscal 2010, we did not see a significant increase in Soldier fatalities following the historic reductions made in fiscal 2009. In safety, we always say a loss is a loss, no matter how it happens. But on the flip side, every Soldier saved is a Soldier saved, whether it's attributed to engaged leadership, intervention by Family and friends or simply increased awareness by the Soldier through education and training. We've learned over the past two years that all three of these measures work, but clearly the most important constant that time and again makes the largest difference across our Army is engaged leadership. The most critical point of this engagement is at the lowest level, where Leaders know their Soldiers the best. The senior Leader's role is not only to also remain engaged, but to support their subordinate Leaders through mentorship and example.

The hectic holiday season will get underway soon, and I ask that you redouble your efforts in keeping both yourself and your Soldiers, whether subordinates or peers, safe. The long holiday weekends observing Veterans Day and Thanksgiving Day will offer plenty of time for road trips, leisurely excursions close to home and food and fellowship with Family and friends. Use every tool in your safety arsenal to ensure everyone makes it back safely after the holiday, and start by talking to your Soldiers about their plans. You might be surprised at how open they'll be, so take advantage of this time to offer suggestions for mitigating the risks associated with each Soldier's scheduled activities. The new "comments" feature on the Travel Risk Planning System presents a great opportunity for subordinates and supervisors to open a dialogue on driving safety. Check out the tool at https://safety.army.mil.

By now, the chill of fall and winter can be felt in nearly every location our Army operates. Cooler temperatures and severe winter weather create hazards for our Army team both on and off duty, especially when working outside or driving on slippery roads. The USACR/Safety Center recently launched this year's Fall/Winter Safety Campaign ("No Time to Chill") to provide Leaders, safety officers and Soldiers vital information for staying safe during fall and winter activities. The 2010 campaign kit includes feature articles, posters and videos promoting awareness and mitigation of fall and winter hazards. All campaign products can be viewed and downloaded via the USACR/Safety Center website. Also be sure to encourage the hunters in your unit to visit the Firearms Safety Techniques challenge available on our website. While the challenge does not replace hunter education classes, it is a great awareness tool for weapons enthusiasts and hunters alike.

I thank you again for your contributions to the accomplishments of this past year and what you do every day for our Soldiers, Families and Civilians. Take that same passion forward in fiscal 2011, and remember to always stay engaged, stay informed and stay safe in everything you do. And wherever your plans take you, have a great November!

Army Safe is Army Strong!

WILLIAM T. WOLF
Brigadier General, USA
Director of Army Safety

Don't Let Complacency Sneak Up on You

RETIRED CHIEF WARRANT OFFICER 4 JAMES K. SCALA
Redstone Arsenal, Ala.

A dictionary defines complacency as "contented to a fault; self-satisfied and unconcerned." To a pilot, these traits are undesirable and could have deadly results. Yet, many accidents occur every year with the primary cause determined to be "pilot complacency."

Just because we do something repeatedly doesn't make it any less dangerous. I want to share a story about complacency in the cockpit, which occurred when I was a Chinook instructor pilot (IP) in the Army.

My job consisted of teaching various helicopter operations procedures to flight students and then evaluating them. One of the more dangerous areas is simulating an engine failure. This procedure is even more dangerous when using night vision goggles (NVG). When performing a simulated engine failure, the IP retards the engine condition lever (throttle) and, by doing so, risks the possibility of the engine actually failing or the student responding incorrectly. Therefore, it is imperative the IP maintain a high level of awareness.

As time went on, my experience level and confidence as an IP flourished. One night, I was to fly with a pilot using NVG to prepare him for NVG refresher training. The pilot had about 75 hours of flight time using the goggles, but he hadn't flown with them in two years. I knew the pilot well, had about 15 hours of flight time with him and had progressed him to readiness level one (RL1). I began his training with NVG, and he was well prepared. The next step was to hit the flightline.

Ready to Go

After the daily ritual of preflight, flight planning and checking weather, we were ready to go. It was a beautiful night — you could see every star and the moon was about 60 percent illuminated. Not a cloud in sight and the forecast was "severe clear."

We climbed into the cockpit and began the run-up process. Before long, we were beating the air into submission. For his first flight in two years, he was hovering very well. We soon took off from the base station and flew to a small airfield about 20 minutes away. I had performed many NVG training flights at this small airfield. Although it was late and the tower had already closed, I had communication with crash/rescue, a requirement of U.S. Army regulations before conducting emergency procedures training.

After conducting a couple of traffic patterns with no interference from me, I was ready to see how he could handle emergency procedures. Since he was doing so well, I started with a simulated single-engine failure. After all, I had given him the same emergency procedure numerous times during the day and he had performed fine.

With the before-takeoff checks complete, the pilot increased the thrust and off we went. On the downwind leg of the traffic pattern at 700 feet, traffic pattern altitude, I initiated the emergency procedure by retarding the No. 2 engine condition lever to ground idle. The pilot called out the first step of the emergency procedure, "Thrust adjust." Normally, the thrust is reduced to regain rotor RPM. I sat back and waited for the completion of the procedure when I noticed the rotor RPM continued to decrease to a dangerous point in which the main generators go offline. I then looked over and noticed he had increased the thrust.

Before I knew it, the aircraft was out of control. I announced, "I have the controls." The pilot became unresponsive and unwilling to relinquish the controls. I continued increasing the rotor RPM to within safe limits, but the attempt to recover the engine was ineffective. I noticed our climb rate had increased from 2,000 to 2,500 feet per minute and the altimeter had risen rapidly. Again, I said, "I have the flight controls!" but the pilot still would not relinquish the controls.

What is Going On?

The flight engineer, growing concerned, said, "What is going on?" as he felt the aircraft going out of control. I looked outside the window and all I could see were stars, indicating we were

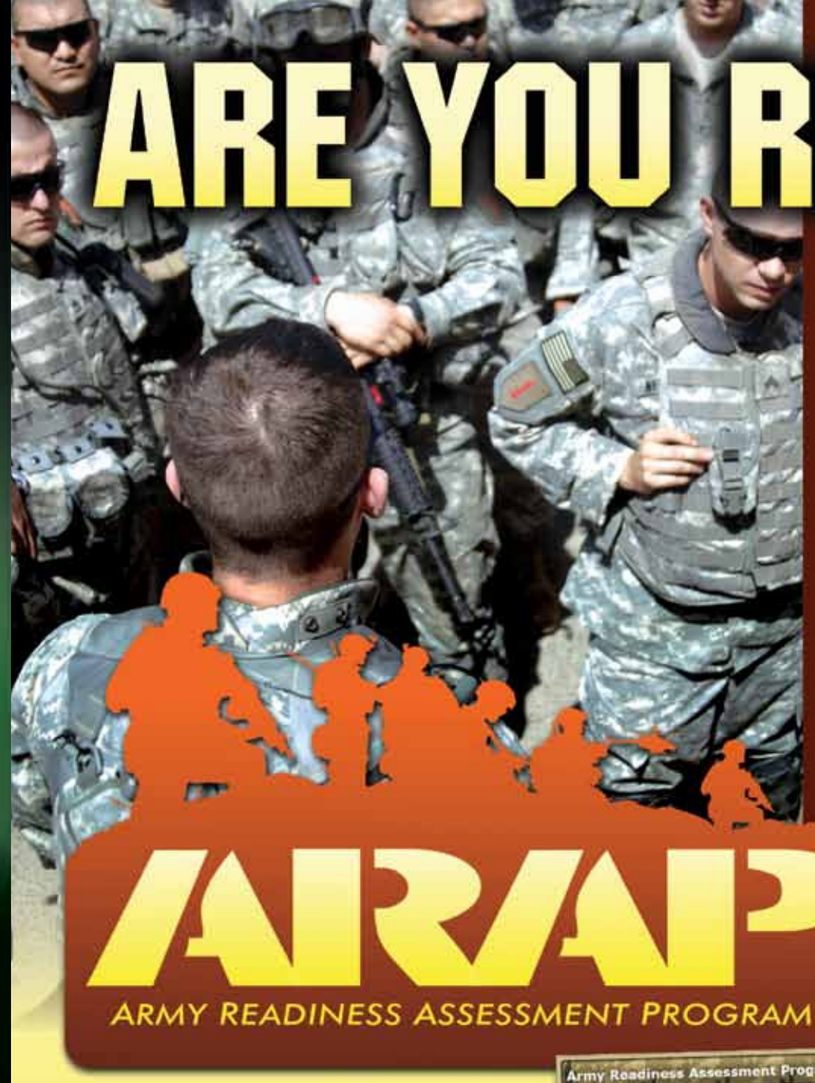
now in a nose-high attitude. Suddenly, the pilot let go of the controls and I reduced the thrust and regained control of the aircraft. After establishing a level flight attitude, I noticed we had climbed from 700 to 3,000 feet in what seemed like a matter of seconds. The pilot asked, "What happened?"

I recovered the engine and proceeded to land the aircraft. Once on the ground, I explained to the crew what had happened. After we all had a chance to catch our breath, I demonstrated the simulated engine failure, discussed it in detail and the pilot trainee performed another without error.

After the flight, I mentally went over the portion of the flight that will be forever etched in my memory. I was slow to react to a potentially deadly situation because I was complacent and unprepared for what happened. I had performed the procedure many times with this same pilot under a different flight mode, and he performed it flawlessly. I should not have taken such a lax position in the cockpit, knowing the pilot at the flight controls was not familiar with this flight mode.

After experiencing so many uneventful simulated emergency procedures, it took an alarming situation to reveal how complacent I'd become. Thomas Carlyle, a Scottish essayist, said, "The greatest of faults, I should say, is to be conscious of none." This is true today, as it was when he wrote it in the 19th century. Complacency can sneak up on you. Don't get too comfortable and let it take over.

> "After **EXPERIENCING** so many uneventful simulated emergency procedures, it **TOOK** an **ALARMING SITUATION** to reveal how **COMPLACENT I'D BECOME.**"



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ARMY SAFE IS ARMY STRONG

WHEN TRAINING BECOMES TOO REAL

SGT. TIMOTHY T. SANK JR.
B Company, 3rd Battalion,
126th Aviation Regiment (General Support Aviation Battalion)
Maryland Army National Guard
Edgewood, Md.

It was a brisk October morning, and we were into our second week of military police field training at Fort Indiantown Gap, Pa. We'd been practicing military operations on urban terrain (MOUT) tactics for several days. Our equipment consisted of all the vehicles and weapons a military police platoon would have. We were having a great time and feeling a little invincible. Our confidence level was high because all of our iterations had gone off without a hitch. We'd even done some unscheduled rappelling operations. Safety was the last thought on anyone's mind.

Eventually, the time came for force-on-force exercises, which allowed us to combine all of the skills we'd been practicing. We would be entering into the MOUT site for some squad individual tactics. The "opposing force" (OPFOR) would consist of no more than three individuals, and our job would be to neutralize any threats. Both sides would have weapons with blank ammunition, smoke grenades and grenade simulators.

My squad was up first and performed all of our tactics flawlessly. We eliminated the threats in record time. Everyone was really pumped as second squad readied for its turn.

In an effort to outdo us, second squad decided to change up things a bit. Rather than have their two teams enter the town on foot while their M1025 HMMWVs maintained overwatch — as my squad had done — the plan called for one of the HMMWVs to drive slowly down the road while the teams moved behind it. The HMMWV would act as concealment from the OPFOR, which, at the time, sounded like a good idea.

The M1025 crew was simple; just a driver and an M240B machine-gunner. The vehicle commander was outside with the teams so he could better coordinate the exercise. As the squad entered the town complex, a member of the OPFOR team stepped out from behind a building and skittered a grenade simulator down the road toward the front of the HMMWV. Unfortunately, the inexperienced driver panicked. She threw the vehicle in reverse and stomped on the gas to escape the grenade. The vehicle lurched backward, causing the two teams who were following close behind to scatter.

However, one Soldier did not get out of the way quickly enough. He was knocked to the ground and the vehicle began to run over him. The rear driver-side wheel came up his right leg, causing an open compound fracture of his tibia and fibula. The HMMWV continued to travel up the Soldier's body, crushing his right hip and pelvis, and then ran across his abdomen and onto his chest, breaking several ribs and puncturing a lung. The vehicle finally came to rest on the left side of his upper chest, breaking his left clavicle.

Everyone was screaming at the poor, confused driver that she had parked on top of a Soldier. Still in a state of panic, she threw the vehicle back into gear and stomped on the gas again, peeling off the Soldier. I, a trained paramedic, and another Soldier, who was a trained

emergency medical technician, rushed to the injured Soldier so we could stabilize him until an ambulance arrived. The Soldier was then transported to a local medical center, where he spent several hours in surgery.

The moral of this story is that even something as simple as routine training can be dangerous. We were out there to learn and ended up losing two Soldiers to a training accident. Neither the injured Soldier nor the driver was ever able to return to duty.

No one had thought about safety that day. We hadn't given a safety brief, nor had we appointed someone as a safety officer. No one wanted to volunteer to take on the extra responsibility of safety. We also failed to identify all the hazards, such as having an inexperienced vehicle operator who had not rehearsed the mission. In addition, Leaders never talked about potential threats and what the proper responses to those threats would be.

Sadly, the principles of composite risk management were never used, which led to a tough lesson learned. It doesn't matter where or how a loss occurs, the result is the same — decreased combat power or mission effectiveness.

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RAISING THE BAR

TASHA JONES
Fort Riley Garrison Safety Office
Fort Riley, Kan.

The 1st Infantry Division and Fort Riley, Kan., had just reached a milestone — 500 fatality-free days since Dec. 10, 2008. My safety director and I were discussing this achievement and in the process of preparing a memorandum for a well-deserved day off for the division's Soldiers and Fort Riley. Then, the unthinkable happened.

It was early the following morning when the Fort Riley Operations Center notified us of a privately owned vehicle (POV) fatality. The preliminary findings of the accident investigation revealed the Soldier, who was not wearing his seat belt, had crossed the centerline and struck another vehicle head-on. We were devastated. The whole intent of the Fatality Free Day celebration was to appreciate life. This tragic death was a sobering reminder that accidents could still happen. Although we couldn't recover the lost Soldier, we could try to prevent another loss. But the question was, "How?"

Refocusing

My safety director strongly believes that good Leaders will take the responsibility and time to understand an accident. For example, was the accident due to the Soldier poorly executing a good plan? Was it due to lack of support from other supervisors? Was it due to a lack of training? What was the Soldier's state of mind — was he angry, hostile or depressed? Did he overestimate his strengths and abilities? Sometimes, even after you've done everything you can to train and encourage Soldiers to be safe, you still come up short. Then what? What more can you do to prevent these tragic accidents?

We decided to refocus our leadership efforts. Despite the tragedy we'd suffered, we'd still made it 500 days without a fatality. That was a huge accomplishment that emphasized the successful efforts of Leaders and the garrison safety personnel to reduce accidents.

Resetting

Every 72 hours, a Soldier is killed in a POV accident. Army statistics for fiscal 2010 show POV accidents accounting for more than 60 percent of all accident fatalities. In many cases, POV accidents result from Soldiers speeding, drinking or driving fatigued — often at night when they're tired from a day's work or recreation. The harsh reality is this: Despite all of our preventive measures, we will not stop every accident every time. However, there are proven techniques that help reduce fatalities.

We know repetition is essential to learning, so we will continue emphasizing not driving distracted, under the influence of drugs or alcohol, aggressively, fatigued or without wearing a seat belt. We will also continue to refute the irrational belief that to have fun, Soldiers must do something highly risky. We will continue emphasizing to Soldiers that they are personally responsible for their own safety. We will continue to teach them that safety is not a burden — it's their first responsibility.

We are determined to do these things for our Soldiers because it is possible to reduce fatal accidents and prevent the resulting grief to families, friends and fellow Soldiers. We had made it 500 days, so it is possible to be successful and effective. Our goal is now to raise the bar even higher. Our Soldiers deserve it.

Do You

Us?

Check out the U.S. Army Combat Readiness/Safety Center's Facebook page for the most recent news stories, videos and photos by the Army's premier safety professionals.

ARMY SAFE IS ARMY STRONG

Deep-Fried Disaster

MASTER SGT. VINCENT L. WILSON
3rd Marine Regiment
Kaneohe Bay, Hawaii

This Thanksgiving, many Americans will choose frying over roasting when it comes time to cook their turkey. When done right, the result is a moist, tender bird. When done wrong, your holiday plans — and maybe even your house — can go up in flames.

It was a brisk autumn morning and my father was outside, preparing to cook his famous Cajun-fried turkey for a family gathering. He had made a name for himself among his friends, co-workers and neighbors for his delicious fried turkeys. In fact, his fried turkeys were so good that he even won the $1,000 grand prize at our community's annual fall festival cookout.

As dad got the fire going, he noticed he needed more deep-frying peanut oil and sent me to the garage to grab another bottle. I told him we were out of peanut oil, so he decided to use vegetable oil. He normally never deviated from his recipe of 100 percent peanut oil, but he was in a hurry to finish before our guests arrived.

Everything seemed to be going well when it started to rain, which caused the oil in the fryer to splatter more than usual. Dad quickly moved the fryer under the patio to keep the rain out. That did the trick, but not before oil had coated the patio walls and ground. Once the oil had reached its proper cooking temperature, he placed the turkey inside the fryer. Suddenly, the fryer was engulfed in flames. Before it was able to spread, however, dad put out the flames and saved our home — thanks to the training he received on the proper use of fire extinguishers.

Fortunately, no one was injured that day and there was no damage to our home. Others, however, haven't been so lucky. Each year, the improper use of turkey fryers results in numerous burn injuries and property damage.

According to safety experts at Underwriters Laboratories (UL), backyard chefs who plan to fry their turkey this holiday season may be sacrificing safety for good taste. Because of the organization's concern over increased reports of fires related to turkey fryer use, UL has not certified any with its trusted "UL" symbol. Some of the potential hazards listed by UL include:

- Many units could tip over, spilling gallons of hot oil.
- It is easy to overfill the cooking pot with oil. If this happens, oil may spill out of the unit when the turkey is placed into the cooking pot. Oil may hit the burner and possibly cause a fire.
- Partially frozen turkeys placed into the fryer pot can cause a spillover effect. This, too, may result in a fire.
- With no thermostat controls, the turkey fryers have the potential to overheat the oil to the point of combustion.
- The sides of the cooking pot, lid and handles get dangerously hot, posing severe burn hazards.

There are currently several electric

DID YOU KNOW?

Cooking fires peak on Thanksgiving Day. Most fires from turkey fryers occur while the oil is being heated, before the turkey is added.

Source: Firesafety.gov

turkey fryers on the market that provide the same deep-fried deliciousness without the propane and flames. Some of these products can even be used indoors, which is a major no-no for conventional turkey fryers. For those who still plan to fry their bird this Thanksgiving on an outdoor gas cooker, the Consumer Product Safety Commission (CPSC) recommends the following safety guidelines:

- Keep the fryer in full view while the burner is on.
- Place the fryer in an open area away from all walls, fences or other structures.
- Never use the fryer in, on or under a garage, breezeway, carport, porch or any structure that can catch fire.
- Raise and lower the food slowly to reduce splatter and avoid burns.
- Cover bare skin when adding or removing food.
- Check the oil temperature frequently.
- If the oil begins to smoke, immediately turn off the gas supply.
- If a fire occurs, immediately call 911. Do not attempt to extinguish the fire with water.

For safest operation, the CPSC recommends consumers follow these guidelines as they prepare to use a turkey fryer:

- Make sure there is at least two feet of space between the propane tank and fryer burner.
- Place the propane tank and fryer so that any wind blows the heat of the fryer away from the tank.
- Center the pot over the burner on the cooker.
- Completely thaw (the U.S. Department of Agriculture says 24 hours for every four to five pounds) and dry the turkey before cooking. Partially frozen and/or wet turkeys can produce excessive splatter when added to the oil.
- Follow the manufacturer's instructions to determine the proper amount of oil to add.

Following the close call at our house, my father reviewed his emergency action plan, which stated that he was never supposed to cook under the patio in the first place. He was in such a hurry to get the turkey cooked before our guests arrived that he failed to follow his own safety rules. Be extra vigilant this holiday season and keep these safety tips in mind before frying your Thanksgiving turkey. It only takes one mistake to turn your holiday celebration into a deep-fried disaster.

FILL 'ER UP!

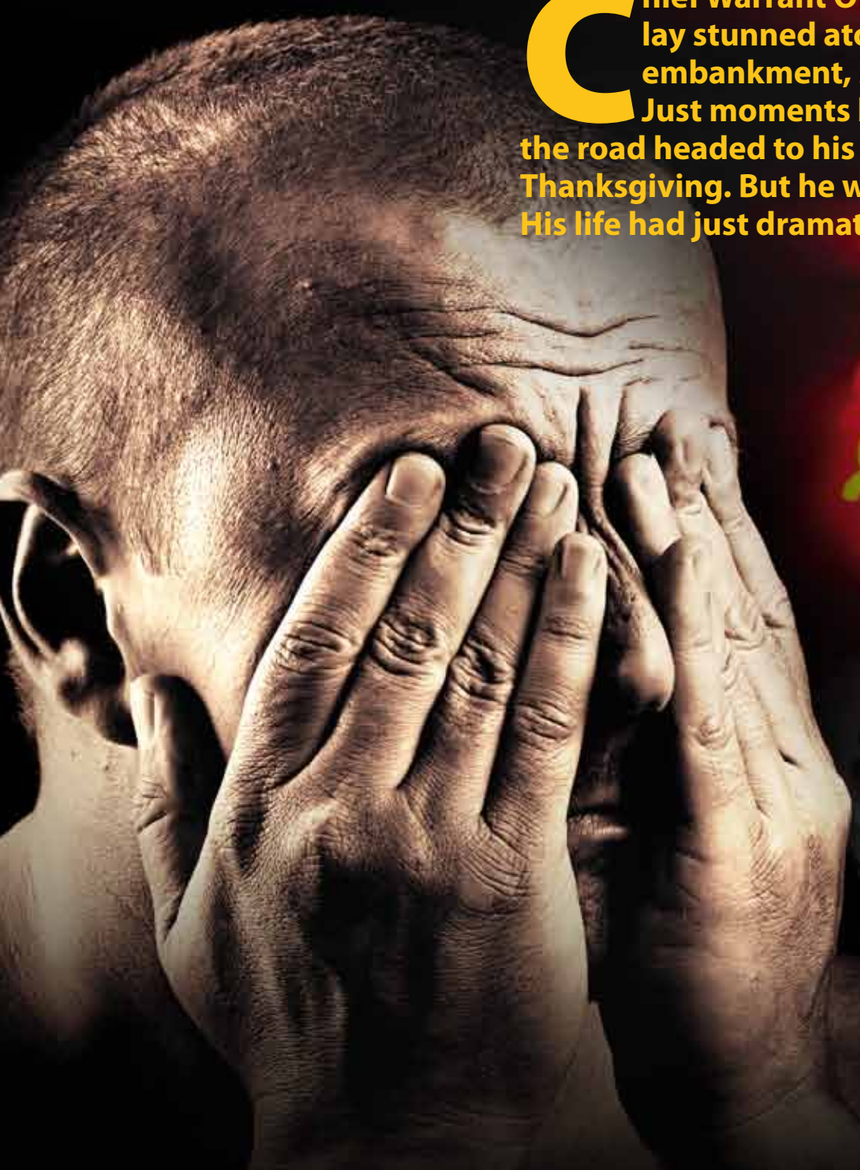
So what is the proper amount of oil to deep-fry a turkey? Your fryer's instruction manual should tell you exactly how much you'll need. If you don't have the instructions, the Consumer Product Safety Commission recommends you follow these steps:

- **Place the turkey in the pot.**
- **Fill the pot with water until the turkey is covered by about a half-inch.**
- **Remove and dry the turkey.**
- **Mark the water level, dump the water, dry the pot and fill with oil to the marked level.**

TWISTED MISTER

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

Chief Warrant Officer 2 Kris Paulson lay stunned atop the railroad embankment, staring at the sky. Just moments before, he'd been on the road headed to his parents' house for Thanksgiving. But he wasn't going to make it. His life had just dramatically changed.



Originally, the young Kentucky Army National Guard Apache pilot had planned to spend Thanksgiving at home in Louisville, Ky., doing some house repairs. However, his dad called and asked him to come to Flint, Mich., to spend the holiday with his family. That meant a six-hour drive, so Paulson called a buddy who owned a Hyundai Sonata with the idea of swapping his gas-guzzling SUV for the more economical car. His friend agreed and they met at Fort Knox, Ky., and traded keys.

Paulson had already packed for the trip and took off an hour early. As the afternoon wore into the evening, he munched sunflower seeds to keep himself awake behind the wheel. Still, in his tired condition he missed the interchange from Interstate 65 to I-69 in Indianapolis. When he saw he was approaching Lafayette, Ind., he realized his mistake and called an old Army buddy he'd served with in Iraq to see if he could spend the night.

Paulson got to his friend's house about 8 p.m. Ideally, he should have gone to bed early enough to be well-rested for the next day. But that's not how things went. Happy to see each other again, Paulson and his friend drank a few beers and then went to a bar. Before they left the bar, Paulson drank a Samuel Adams Utopias — a beer with a 27 percent alcohol content. Neither was in any condition to drive, so they took a taxi back to the house and went to sleep.

Paulson woke up about 9 a.m. and quietly packed up his gear and left. Pulling onto a two-lane road that would take him to I-69, he tried to make up time by speeding. He'd barely gotten onto the road when another driver pulled out in front of him.

"I slammed onto my brakes and my sunflower seeds flew off the passenger seat onto the floor where I couldn't reach them," he said. "I unbuckled my seat belt, reached down, picked them up and kept on going. I never put my seat belt back on — I never thought about it. … I'm sure I would have thought about it eventually."

But "eventually" never came. About 20 minutes later, tired and feeling the effects of the previous night's drinking, he fell asleep and drifted toward the right shoulder. Startled when his tires hit the rumble strip, he jerked the wheel to the left. Realizing he'd overcorrected, he swerved to the right, sending the Sonata across the shoulder and down a railroad embankment. As the Sonata hit the bottom, its front end smashed into the railroad tracks, sending the car tumbling end over end. Unbelted, Paulson flew around inside the car, bouncing off the seats and roof. Then something even more dramatic happened.

"I remember the power of centrifugal force, angels, God — whatever — sucking me out of the car," he said. "I shot right out the sunroof."

Paulson cartwheeled

"UNBELTED, Paulson **FLEW** around **INSIDE** the car, **BOUNCING** off the **SEATS** and **ROOF.** Then **SOMETHING** even **MORE** dramatic **HAPPENED."**

through the air, landing on top of the far side of the embankment. As he lifted his head to check for injuries, he was shocked to see his heels — not his toes — pointing skyward. From the waist down he'd literally been twisted backward.

He said, "I dislocated and decompressed my spine in two places. I broke five vertebrae and eight ribs — five of which I shattered. I bruised my lungs … and from my bellybutton down I couldn't feel anything."

Paulson reached into his coat pocket for his cell phone and tried, unsuccessfully, to call his friend. Paulson said, "I never thought about calling 911. … I didn't know where I was, so it wouldn't do them any good. What was I going to say? 'I'm somewhere here in Indiana on the ground — you're going to have a hard time finding me.'"

But someone did find him. Ken Werts, Indiana's golf coach of the year, saw the crashed car's taillights and stopped to see what had happened. Approaching the wreck, he saw Paulson lying on the embankment about 50 meters away.

"He came up to me and positioned his arm underneath my head. He didn't try to move me — he just put it beneath my head because my neck was starting to get tired holding my head up. We were face-to-face and he just started talking to me, trying to keep me calm," Paulson said.

With his back, hips and legs hurting and fearing he might pass out, Paulson described his pain to Werts so he could pass the information to emergency personnel. Nearby, Werts' wife stood by praying as their son called 911 and provided directions to the accident. Within 10 minutes, emergency medical services arrived.

Placing Paulson on a backboard and securing him, they had to grab his hips and straighten them out. The pain was "rough," Paulson said. As they carried him down and across the embankment and up the far side, Paulson felt every jolt. The paramedics loaded him into the ambulance and stabilized him for transportation, but they couldn't give him anything for his pain.

Because of his back injuries, Paulson was taken to St. Elizabeth's Hospital in Lafayette. The ride was agonizing, but the worst was yet to come. Placed in an MRI, he was told to hold his hands above his head, stretching his broken ribs and back. Minutes felt like hours during the ordeal. Only when the MRI was complete was he given pain medication and taken to the operating room.

That night, Paulson had an operation to repair the tremendous damage to his body. The surgeon placed two titanium rods along with screws and stabilizers across the top and bottom of his back. When he awoke the next day, it was to a new reality.

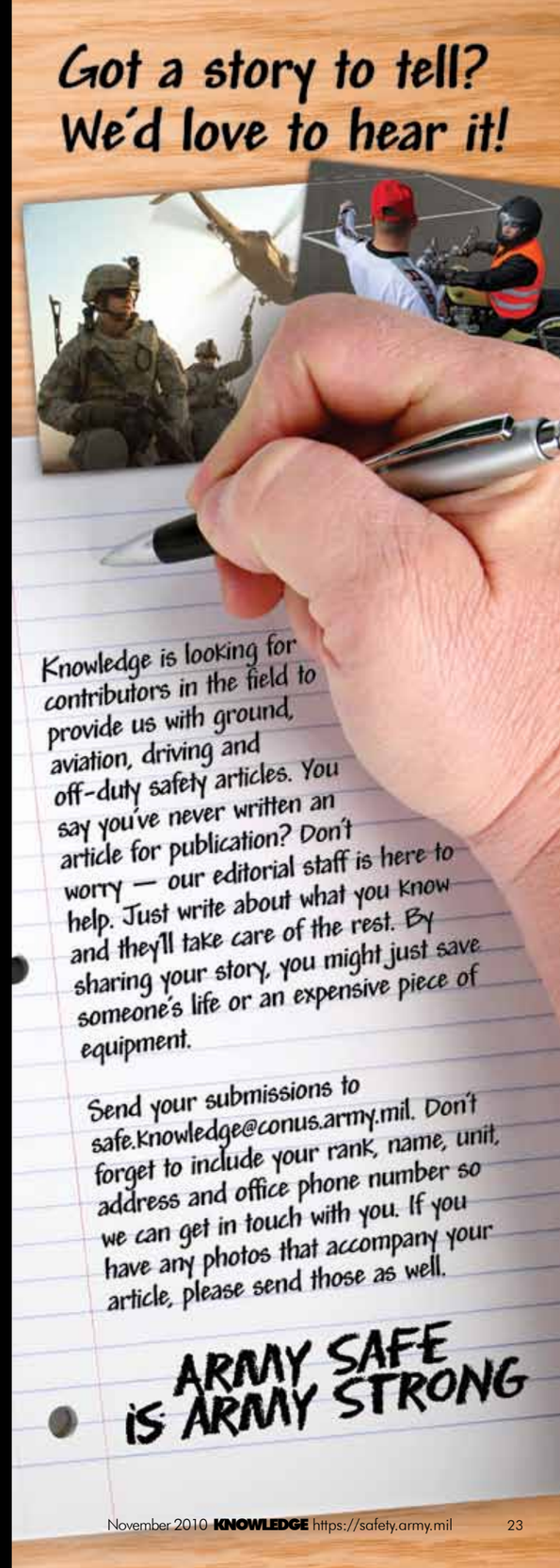
"I was paralyzed from the waist down. … Nothing moved, nothing worked," he said.

Paulson spent 29 days in the hospital and a much longer time recovering at home. Today, with the help of special supports for his legs and feet, he can again walk. Through great determination, he has returned to work for the Army and now helps train aviators in the survival skills they'll need should they be shot down. Paulson beat the odds of ever walking again, but his dreams of running marathons or flying Apaches have long since faded.

Looking back on the accident, Paulson accepts responsibility for his own decisions. He knows his decisions about drinking set him up for disaster.

"I should have been drinking less and sleeping more," he said. "Imagine how much better shape I could have been in if I'd been sleeping that night instead of drinking. I'm glad I'm the only person that I hurt. What if I had fallen asleep and gone onto the other side of the road and killed some kid — maybe some 17-year-old cheerleader? What if I'd killed some mother and her daughter because I fell asleep from trying to do too much and being out drinking the night before?"

The past is a closed book, but the future offers hope. Paulson believes Leaders, by sharing their own experiences, can show Soldiers that risks are real, not just imagined. And he hopes Soldiers will learn a vital lesson from his accident: While you can choose whether to be safe, you can't choose the consequences. He is living proof those can last a lifetime.



along for the ride

CHIEF WARRANT OFFICER 2 HOWARD Y. ESTERBROOK
B Company, 1-171st Aviation Regiment
Schofield Barracks, Hawaii

The mission was to insert personnel into a landing zone (LZ) that was at 7,000 feet pressure altitude and 30 C. We reconned the LZ to determine the size, wind direction and approach path. Everything looked normal. As I started the approach for landing, things were going good until the last 30 feet. Then, my passengers and I were just "along for the ride."

Knowing we were heavy, I progressively brought in the power to terminate our approach when the aircraft suddenly began to drop. As I applied all power available, the rotor RPM started to droop. I pushed the cyclic forward to attempt a high-speed shallow approach, but subsequently bounced the aircraft twice and skidded about 20 feet until we finally came to rest. The aircraft landed with minimal input from me. Fortunately, nobody was hurt and the aircraft landed without a scratch. However, it scared the heck out of us.

When operating any type of vehicle, whether it's a helicopter, tactical vehicle or even your own privately owned vehicle (POV), the term "along for the ride" means just that; you are in a situation where you have little or no control of that vehicle and what's happening. This condition is most often self-induced or brought on by circumstances beyond your control. It is within our safety culture to identify and eliminate as many hazards as possible within our control, especially ones that we have created. In vehicle operations, we sometimes choose to ignore or forget that our habits can cause unintended consequences.

In the incident described earlier in this article, we discovered afterward that we had incorrectly figured our weight, which ultimately affected the performance of the helicopter. I, as the pilot in command, had calculated the total weight of the aircraft, passengers and cargo incorrectly. I also had the co-pilot calculate our total weight, but I neglected to compare his numbers with mine, as we were in a hurry to take off. Besides, both of us had done this numerous times before, so it was OK (or so I thought). Our complacency had set us up for a situation that we would never forget.

Another incident occurred while I was driving home after visiting a friend. It was a rainy day with a lot of standing water on the road. As I neared my house, I took a wide turn off the freeway and found myself losing control of the car and skidding. Once again, I was "along for the ride" and ended up smacking the barrier.

I'm a good driver (or so I thought), so why did this happen to me? Once more, I got too comfortable driving on this off-ramp as I had done so many times before, including rainy days where nothing ever happened. Over time, I had neglected to adhere to the posted speed limit and gradually ignored the signs, as I was perfectly able to handle myself (or so I thought). This was yet another wake-up call. Getting comfortable and lazy had cost me again.

Sometimes, performing repetitious tasks can lead us to believe that we are always in control of any given situation. We forget we are human and subject to making mistakes. Complacency can set in when we choose to ignore or forget the fact that operating any type of vehicle or performing a task can be inherently risky. We should be ever vigilant in the operational environment, whether we are on or off duty, to assess the risks and take steps to reduce or eliminate them. Ask yourself if you are getting too comfortable with the situation and the vehicle you're operating. By doing this, you can help identify a situation where you may be setting up yourself to be complacent.

My experiences have taught me to never take things for granted when operating a vehicle, whether it is a helicopter, HMMWV, boat or POV. By performing a self-assessment in which I ask myself, "Am I getting too comfortable with operating this vehicle in this situation?" I have a chance to think for a moment and consider whether I might need to correct myself. Being aware of complacency will ultimately reduce the chances of your going "along for the ride." The payoff is that you will live to fly another day. Your co-workers, friends and loved ones will be glad you did.

A Lesson Learned

STEPHEN SCHWARTZ
2nd Stryker Cavalry Regiment
Qalat, Afghanistan

It was a good training day. We were conducting a command-sponsored train-the-trainer event for M-249/M-240B machine gun qualification tables to show subordinate unit Leaders what "right looks like." So far, we had executed well and "right" looked pretty good.

We started early in the morning with a huddle and went over the pre-execution checklist. All details were dispatched and completed on time. Following a safety and range procedures briefing and a quick preliminary marksmanship refresher training session, the range was "hot" by 0800 and we sent the first round downrange by 0830. Things were going well. Murphy must have been on leave because he certainly hadn't shown up today.

We conducted all of our firing tables, including the 10-meter zero/qualification, 100- to 800-meter day transitional and night transitional fire. More than 100 gunners and assistant gunners went through the course during the 10 hours of daylight, burning up more than 70,000 rounds. As nightfall approached, the range was still hot and lively. All pieces of the machine were hard at work with 10 lanes going.

Because of our shooters' inexperience, I posted a safety for each lane during the night fire, as part of our risk assessment and mitigation process. The assigned range safety officer (RSO) was doing a great job observing all moving parts forward of the firing line and regulating traffic.

Prior to going hot for night fire, I had held a short planning huddle to rehearse the shutdown and clearing of the range and recovery back in the rear. I could tell that everyone had put in a hard day's work and felt good about the training. Still, we were getting a little tired and looking forward to a hot shower and going to bed. I think that was around the time Murphy showed up.

We cleared the range with the RSO personally clearing each M-249 at a central point as the weapons came off the range. Somehow, one of the weapons made its way to the staging tables without being cleared. I personally oversaw the range-clearing execution and could see our RSO doing his job. However, someone didn't follow the route or proper procedure for clearing weapons off the range and brought an M-249 to the table with a round in the chamber.

Fortunately, when we conducted a second check on the weapons with their feed tray covers up, we spotted the round in the M-249. We avoided what could have been a fatal accident, but the experience left its mark on all of us. With more than 150 personnel buzzing around the range policing brass and tearing down equipment, had this weapon discharged, chances are someone would have been injured or killed.

That night we learned an important lesson: We are never immune to the dangers caused by complacency. We all joke that Murphy's Law gets in the way of every good plan just when the execution phase begins. However, I believe Murphy usually shows up when we let down our guard — like when we reward ourselves for our hard work before the mission is complete. We sometimes give ourselves and each other "attaboys" and forget that we're still in the fight. No matter how well an operation is going, if it's still going, anything can happen!

Our near miss taught us that being complacent and letting down our guard can lead to tragedy. Thankfully, we learned that lesson without it costing a Soldier's life.

WHEN HELL *Came to Breakfast*

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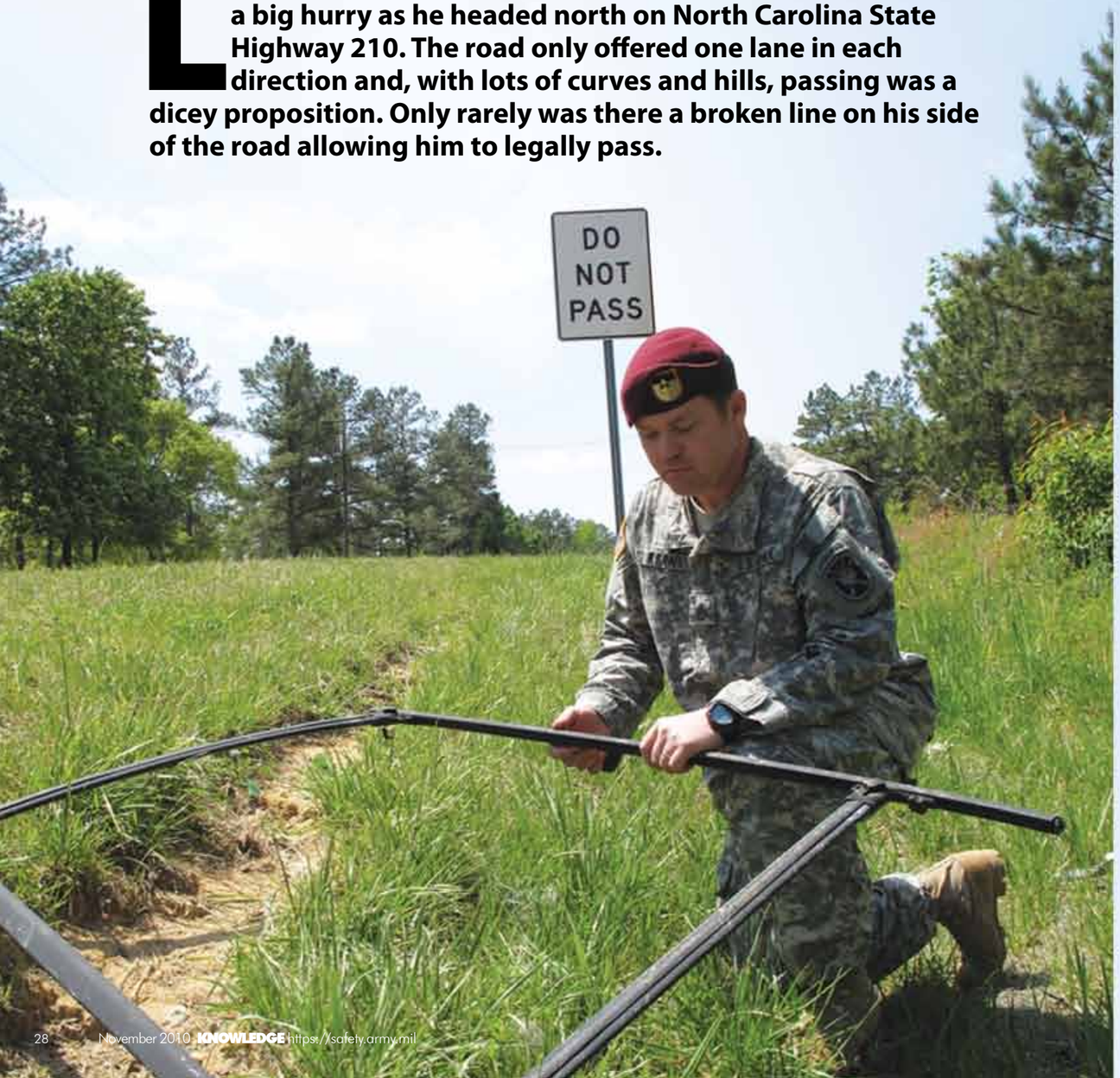
U.S. Army Combat Readiness/Safety Center
Fort Rucker, Ala.

Larry Wade (a fictitious name to protect his privacy) was in a big hurry as he headed north on North Carolina State Highway 210. The road only offered one lane in each direction and, with lots of curves and hills, passing was a dicey proposition. Only rarely was there a broken line on his side of the road allowing him to legally pass.



But he wasn't in the mood for patience. In fact, any sense of personal safety or respect for the law was long gone that November morning. The sun had not yet come up as he gunned his car and repeatedly crossed the double yellow line to pass traffic. The road began to climb over a low hill and, eager to pass a couple of cars ahead of him, he once again cut into the oncoming lane. As he neared the top of the hill, he saw a light flicker on the horizon — but it wasn't the sunrise. In the southbound lane, Sgt. 1st Class John Kerns was switching to his low beams to avoid blinding the drivers approaching from the opposite side of the crest.

The oncoming headlights told Wade he was in the wrong place at the wrong time. Panicking, he swerved to the right to reenter his lane and, in the process, clipped the front bumper of the car he was passing. The impact sent Wade's Toyota Camry out of control off the right side of the road. Overcorrecting, Wade jerked the wheel to the left and sent his car sliding sideways into the southbound lane. Kerns, who was headed to Monday morning PT formation and then back home for breakfast, never had a chance to touch his brakes. It was 5:55 a.m. on Nov. 30, 2009, and hell had come to breakfast.

"He just appeared. All of a sudden, there was this car there and 'wham!'" Kerns said. "All I remember is a black flash (the car was black) that I thought was a station wagon until I found out later that it was a Toyota Camry. That just tells me it happened so quickly and suddenly that I couldn't tell, definitively, exactly what kind of car it was."

Kerns' Honda Civic hit the Camry on the passenger side just behind the front door. At a combined speed of more than 100 mph, the Civic sliced the Camry in half behind the front seat. The Camry's front half careened off the road into a ditch on Kerns' side of the road while the back half landed in a line of trees behind where he had stopped. Kerns was stunned by the violent impact.

He said, "I remember that I had my foot on the gas and still had the presence of mind to manipulate the brake. But, at that point, it didn't really matter because my wheels weren't rolling."

In fact, his car couldn't roll. The impact tore off the Civic's right-front tire and dropped the engine and transmission onto the road where they dragged against the asphalt until the car ground to a halt.

"The damage on the front of my car was such that I don't know what benefit the brakes would have offered at that point — but I was going through the motions," Kerns said.

Despite the severity of the impact, the Civic stood up pretty well. The dash and steering wheel were pushed back toward Kerns, but not to where the wheel touched his chest. Every air bag in the car had deployed and Kerns noted, with humor, that the inside of his car looked like a party at McDonalds. But he was alive and conscious.

"The first thing I did was a self-check," he said. "I looked around and thought, 'I'm still alive!' I had glass in my mouth and cuts on my face — I had blood on my face and arms. I remember pulling the parking brake and turning the key off and then I immediately got out of the car to assess the damage. When I did, the first thing that came to my mind was, 'My God, this looks like situations I have seen in Afghanistan and Iraq — this is like an IED attack!' I hadn't seen that kind of damage since working on main supply route Irish (a 12-kilometer stretch of highway in Baghdad). There were bits and

pieces of this guy's car everywhere."

Pieces of both vehicles were strewn for at least 150 feet up and down the road and on the shoulder. The Camry's fuel tank lay in the southbound lane. Kerns looked around, amazed at the damage, and then started looking for the Camry's driver, who he felt might need first aid. But he didn't get far.

"I made it about three or four feet and couldn't breathe," he said. "My initial impact was starting to catch up with me and I took a knee and sat down. I remember lying back on the asphalt, looking up at the stars and pulling my phone out and calling 911. I said, 'I've been in an accident and we need ambulatory assistance. At least two people here are injured — maybe more.' The dispatcher asked me, 'Where are you?' I told her, 'I'm on Highway 210.' She kept asking, 'Where on 210?' I told her, 'Lady, just tell your ambulance to go until they find smoke and fire, because that's where we are.'"

The pain hadn't yet fully set in, but Kerns was feeling stiff and found it increasingly painful to get his breath. He declined an offer to be taken in an ambulance to a civilian hospital. Instead, not realizing the extent of his injuries, he called his supervisor and asked for a ride to work. As they drove toward Fort Bragg, the adrenaline began to wear off and the pain set in with full intensity.

"I never would have believed that a person could hurt quite that bad," he said.

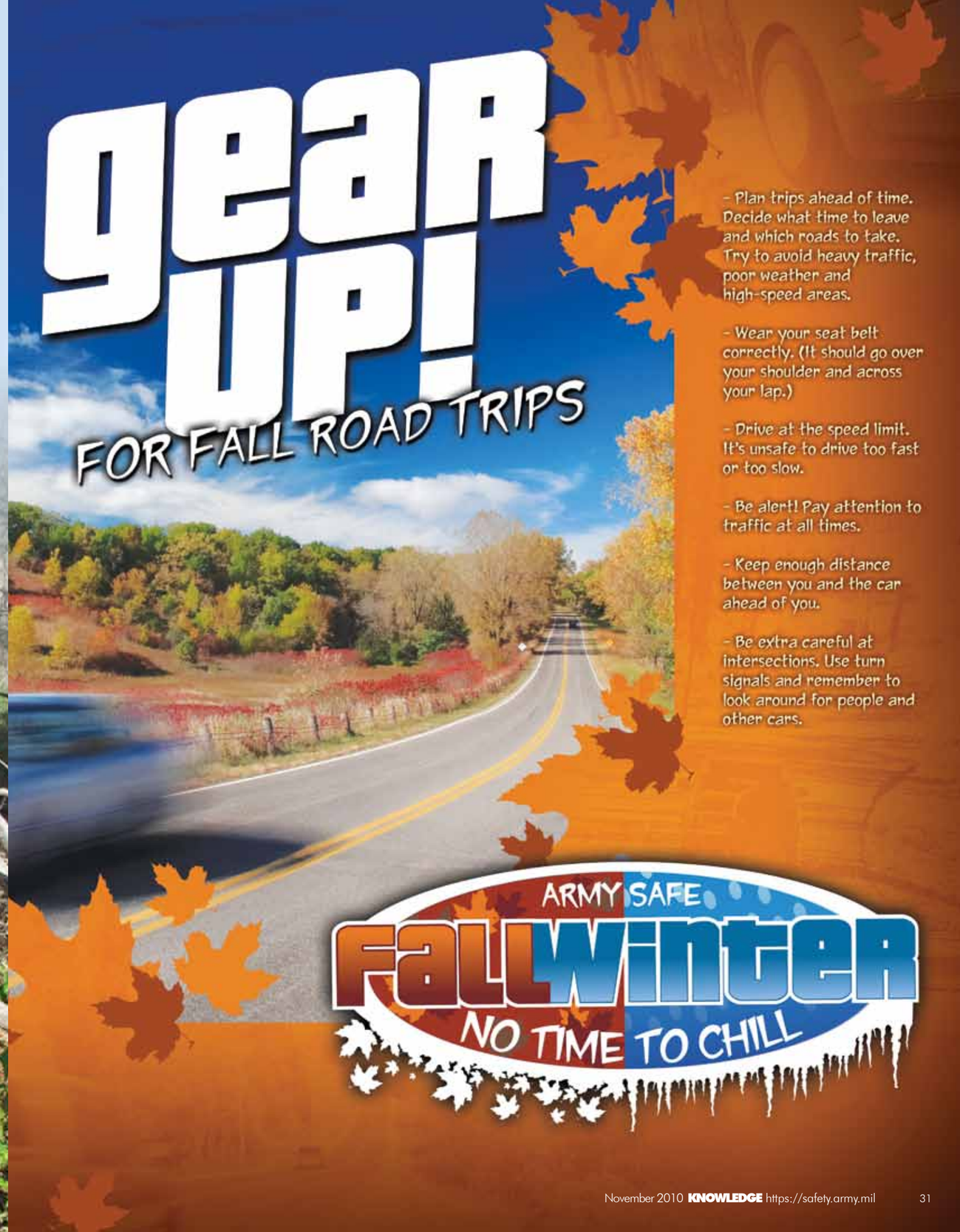
Kerns asked his supervisor to take him to Womack Army Medical Center. When he arrived, he was immediately taken to the emergency room and examined. Doctors found he had suffered cracked ribs and bruised internal organs — particularly on the lower-right side of his abdomen where the seat belt and shoulder restraint crossed his body. Still, the pain from those injuries beat the alternative. Instead of being thrown through the windshield and killed, he survived and, although sore for a couple of weeks, returned to his unit after six days' quarters. Since then, Kerns has often contemplated what happened that day and the difference the safety systems in his car made in his survival.

"I thank God for air bags and seat belts," he said. "There is no doubt in my mind that they saved my life."

While Kerns was raised to use his seat belts, his accident made him even more committed to taking that extra couple of seconds to buckle up. His accident has only reinforced his appreciation for how modern restraint systems — particularly seat belts and air bags — can protect innocent drivers from the reckless actions of others on the road.

The accident has also led to Kerns having a different mindset when he gets behind the wheel. He knows he can do everything right and still be the victim of someone else's bad decisions. He no longer assumes other drivers won't do something dangerous, no matter how foolish. Now he searches the road for risks with increased intensity.

"We make a lot of assumptions throughout our daily lives," he said. "Driving down the road, I make the general assumption that the (other) car is not going to pull out in front of me. While I don't necessarily assume every car is going to do something like that, the thought crosses my mind a lot more now than it did before."



A Minor Event

CHIEF WARRANT OFFICER 2 AARON T. KELLNER
Company A, 1/135th Attack Reconnaissance Battalion
Missouri Army National Guard
Whiteman Air Force Base, Mo.

A while ago, while flying night vision system (NVS), I did something that made me quite unhappy. I had recently completed the AH-64A Instructor Pilot (IP) Course at the Western Army Aviation Training Site outside of Tucson, Ariz., and was eager to get in a couple of additional flight training periods before heading off to a long nonflying course. It had been almost two months since I'd flown at my home station and about that long since I had a backseat flight at night. In the Apache IP Course, most of the flying is performed from the front crew station.

That afternoon entailed a joint air attack training mission with local Air National Guard assets. I was crewed with a pilot in command during the afternoon, allowing me to reorient myself to the local area and the backseat. The plan was to turn around and fly with a junior pilot that evening on a day out/night return mission that would involve a standard local area flight scenario. We would next hit the local tactical training area, then one of our commonly used local airports and then reverse our route and perform our tasks at night.

We departed our airfield after changing aircraft due to a maintenance issue. We flew the route as intended with no issues. We hit the training area for some confined area approaches and low-level flight. Then we flew over to the airport, performing standard airfield maneuvers. We then "systemed up" and performed a few more approaches and landings.

NVS flying isn't quite like riding a bicycle to me. Generally, when I haven't flown under NVS for more than a week or two, I need a little time to warm up. That was the purpose of the airfield work. I could get my crosscheck going under NVS and gain my feel for the aircraft before heading out to the training area at night.

We flew the pattern for a while and decided, due to time considerations, that heading to the tactical training area was the best idea. My front seater had the controls as we approached the tactical training area. Flying at about 1,200 feet above ground level (AGL) and 110 knots, I took the flight controls to facilitate a front-seat frequency change and radio call required upon entry into the training area.

After the radio call was complete, I initiated a slow descent to training area altitude. I reached down to change the UHF from an Air Traffic Information Service frequency back to a unit internal frequency. The cockpit lighting was inadequate and I fumbled for the preset switch, eventually having to look down to find it. I then looked to the other side of the cockpit for the lighting rheostat and back to the UHF preset after adjusting the lighting to make the frequency change.

At this time, I heard my front seater say with a sense of urgency, "Do you have that rate of descent?" I brought my head to the 12 o'clock position and saw a rate of descent well over 1,000 feet per minute and an AGL altitude of less than 400 feet. "Yeah, I've got it," I responded, keeping an even tone, trying to sound like I meant to induce the descent. I pulled out of the descent with plenty of altitude and no erratic control application and we continued the mission with no issues.

From the time of this minor event until this day, I have to wonder what could have happened. What if it wasn't the first time we flew together and we were comfortable with each other's flying? What if my front seater was a little more timid and didn't speak up, believing more in my abilities and judgment than her own? What if we didn't do a full mission brief, emphasizing the free flow of aircraft and mission information? Perhaps I would have caught the descent in plenty of time. I probably would have … but maybe not. This very minor event could have turned into something much worse.

run for your life

1ST SGT. SCOTT THIERET
B Company, 1st Battalion, 134th Aviation Company
Missouri Army National Guard
Jefferson City, Mo.

During my 20-year military career, I — like a lot of Soldiers — have had many titles. From aircraft mechanic to supervisor and private to first sergeant, I've held them all. However, despite which hat I was wearing at the time, safely accomplishing the mission was always at the forefront of every job.

I feel the Army has made me an excellent steward of safety. On the job, one oversight could destroy a multi-million-dollar aircraft or, even worse, claim Soldiers' lives. However, I did not realize the value of safety until the past few years.

For years, I did not put much emphasis on using personal protective equipment (PPE) at home. Yeah, wearing it on the job was mandatory, but who needed PPE at home? What's the worst that could happen?

After leading by example on the job for years, I figured now, since I have children, I needed to lead by example at home as well. My old attitude of "I'm just going to make this one cut with the saw without using safety glasses and hearing protection" had to change. Even though wearing PPE can be cumbersome, it allows my little girls to see daddy doing the right thing. Sure, they ask a thousand questions about why I wear it; but taking the time to explain only reinforces the importance and teachings of doing the right thing.

As usual, my alarm went off at 4:30 a.m. I got out of bed and dressed in my most comfortable jogging attire. It was a cool morning, so I wore a sweatshirt, stocking cap and gloves. I then stretched and headed out the door with everything I needed — or so I thought.

While protecting my sight, hearing and extremities has always been important to me, I never gave much thought into protecting my body as a whole. A close encounter with a car while on my morning jog served as a wake-up call. Here's what happened:

About 20 minutes into my run, I noticed a car approaching from behind. I glanced over my right shoulder and moved as far to the left side of the street as possible. I thought for sure the driver saw me; but when I looked over my right shoulder again, I realized I was in the car's direct path.

With the car about 30 yards away and quickly closing in, I decided to run off the roadway into the grass. Just as my feet hit the grass, the car sped by, nearly hitting me. After a few choice words aimed at the driver, I took a moment to catch my breath. It was then I realized something; I was not wearing my reflective belt. Was it possible the driver never even saw me?

I was lucky. This simple oversight to wear my reflective belt could have been catastrophic for me and my family. After closely evaluating my mistake, I changed how I prepare for my morning run. I now ensure all necessary items are identified and placed in clear sight the night before so I don't forget anything.

So what was it that made me forget to wear my reflective belt? Could it have been complacency? Was I tired? Or was it just poor planning and lack of composite risk management? I believe it was a combination of all of these things. Whatever the case may be, sometimes all it takes is a close call to get your head back into the game.

DID YOU KNOW?

According to Army Regulation 385-10, wearing portable listening devices such as MP3 players is prohibited while jogging/running, bicycling or skating/skateboarding on or adjacent to roadways or roadway intersections on Department of Defense installations.

FYI

In addition to wearing bright-colored and reflective gear, you should run against the flow of traffic. This will help you see potential problems up ahead and increase your chances of avoiding an accident.

UFO Unrestrained Flying Object

CHIEF WARRANT OFFICER 2 BILL HUTCHENS
B Company, 1st Brigade, 82nd Attack Reconnaissance Battalion
Fort Bragg, N.C.

It was just after morning formation and I was on my way to an appointment. As I pulled out of the airfield, I found myself behind a very slow driver. We stopped at a red light and, when it turned green, she just sat there. I tapped my horn and she finally began moving. I followed her through a left-hand turn and, because I felt she was driving erratically, passed her. Continuing to watch her in my rearview mirror, I saw her come to a complete stop for a blinking yellow caution light.

I continued down the road and stopped at a red light. When I glanced again in my rearview mirror, I saw her quickly approaching and realized she wasn't going to stop. I looked down and saw I wasn't wearing my seat belt. All I could think to do was lean back in my seat and prepare for the impact.

The woman never braked and slammed into me at full speed, causing my air bag to deploy. However, without my seat belt to restrain me, my head hit the air bag and went around its right side and struck the dash next to the stereo. To make matters worse, the previous night I'd tried to remove my truck's stereo. Unfortunately, the metal rods I'd been using to pry the stereo out were still sticking out of its sides. One of the metal rods scraped the left side of my forehead, temple and ear and caused a nasty gash. Looking back, I realize how lucky I was that I did not lose an eye.

I got out of the truck, my adrenaline pumping so hard I didn't notice the gash or the blood coming out it. When I went back to check on the lady who hit me, her teenage daughter got out. She immediately began apologizing and told me her mother was taking several prescription drugs.

My truck was totaled. When she rear-ended me, she pushed me into the vehicle ahead. Fortunately, no one was injured and they only suffered some minor damage to their rear bumper. After the police arrived, they filled out the accident reports and ticketed the woman. An emergency medical technician cleaned the blood off the side of my head and asked if I needed an ambulance. I told him I didn't, but later I had my wife take me to the emergency room.

> "From a **SAFETY** standpoint, there were **MANY THINGS** I **SHOULD** have done **DIFFERENTLY**."

Although I was extremely sore for a few weeks after the accident, I was thankful my injuries were so minor.

From a safety standpoint, there were many things I should have done differently. I should have put my seat belt on immediately after I got into my vehicle. If I'd been wearing it, it would have kept me in the proper position to benefit from my air bag. Instead, I became a UFO (unrestrained flying object) headed for a nasty collision with the dash. When I noticed the woman was a hazard on the road, I should have immediately called and reported her. That might have caused her to be stopped, which would have prevented the accident. Finally, leaving sharp objects protruding from the dash or lying loose inside a vehicle is never a good idea. In a crash, they can cause serious — even deadly — injuries.

Before you get on the road, make sure you've done all you can to protect yourself and others riding with you. Most importantly, before you back out, buckle up. You won't have time to reach for your seat belt when an approaching driver's grill suddenly fills your rearview mirror.

Coulda, Shoulda, Woulda

COMPILED BY THE KNOWLEDGE STAFF

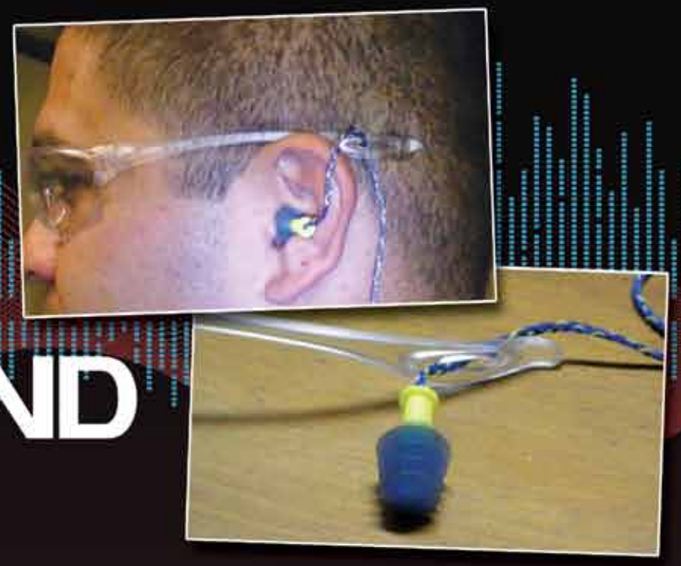
How many times have we heard someone say, "I should have done this" or "I could have done that," after they had done something else or, perhaps, nothing at all. The same applies to the word "would." Too often, unfortunately, we hear those words after an accident occurs. Think a minute the next time you hear or say the following statements:

- I should have checked the weather more closely before we left.
- I should have taken a bit more time checking the condition and the rigging of the sling load.
- I could have cleared the trees coming out of that confined area if I'd had a bit more power.
- I would have planned the flight differently if the "head shed" hadn't put pressure on me to get the mission accomplished.
- I could have made it with a bit more fuel.
- I would have written up that anomaly, but we needed to complete the maintenance and get the aircraft up.
- I should have made sure my passengers were properly briefed.
- I should have spoken up when I realized the mission would extend well beyond my crew day.
- I should have known the dust would cause a brownout.
- I should have known that loose towel would get airborne.
- I should have told him about the rotor blades.
- I would have worn my survival vest, but it was just a routine mission.
- I should have checked the survival radios.

Hindsight is great for lessons learned, but foresight is the key to accident prevention. Identifying hazards and developing and implementing controls to eliminate or reduce risks before and throughout the mission are the best ways to avoid lamenting what you "coulda, shoulda or woulda" done after a painful accident. Turn your coulda, shoulda, woulda statements into control measures before an accident happens.

SIGHT AND SOUND

FRANK MCCLANAHAN
Civilian Task Force
U.S. Army Combat Readiness/Safety Center
Fort Rucker, Ala.



Each year, thousands of people are blinded by work-related eye injuries. An employee from Corpus Christi Army Depot, Texas, recently shared a safety tip to prevent on-the-job injuries.

For those required to wear both eye and ear protection as part of their duties, they can don protective eyewear such as that shown in the photograph above. This combination of eye and ear protection is designed to keep both devices readily available to the user, as well as keep the earplugs untangled. The earplug cord also serves as a lanyard, allowing the user to wear the eye protection around the neck until needed.

Besides convenience, the employee stated that this combination device prevents discarded earplugs from creating foreign object damage to aircraft engines. There are numerous variations on this concept, including protective eyewear which has the hearing protection mounted on hinges that can be folded away from the ear when not needed; protective eyewear with earmuffs attached; and hard hats that have both eye and ear protection attached.

No matter how routine the task or low the risk, always wear the proper eye and ear protection for the job. It's your best defense against an accidental injury or loss. Remember, the best piece of personal protective equipment is the one you actually wear.

DID YOU KNOW?

Workplace eye injuries result in more than $300 million per year in lost production, medical expenses and worker's compensation. In addition, the Centers for Disease Control and Prevention estimates that 22 million workers are exposed to hazardous noises on the job, and an additional 9 million are at risk for hearing loss from other agents such as solvents and metals.

LOST

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.

AVIATION

AH-64D

CLASS A

- The aircraft crashed into terrain during unit night high-altitude mountain environmental training.

CLASS B

- The flight crew conducted emergency procedures after detecting the smell of smoke in the cockpit, followed by the transmission chip light illuminating. The main rotor blades (MRBs) contacted trees during the descent, causing damage to all four blades.

CH-47D

CLASS B

- The aircraft was flown to a fairground for static display when its rotor wash blew over a tent, resulting in injuries to several spectators on the ground.

CLASS C

- The left-side emergency exit door separated during flight. The crew landed without further incident and recovered the damaged door.

CH-47F

CLASS A

- The crew experienced engine failure during short final at about 200 feet above ground level (AGL) and then contacted a ground obstacle.

MH-60L

CLASS A

- While on short final to the taxiway, a vehicle pulled in front of the aircraft. The pilot on the controls (PC) immediately stopped forward movement to avoid impact with the vehicle. After the vehicle moved a safe distance away from the aircraft, the PC landed the aircraft. On postflight, the crew discovered the MRBs had contacted the ALQ-144, resulting in the replacement of all four blades.

C-23C

CLASS D

- While flying straight and level on a parachute drop mission, a medium-sized bird struck the forward portion of the fuselage. The crew completed the lift and returned to the airfield. During inspection of the aircraft, the crew discovered damage to the radome.

UAS

A160

CLASS A

- The unmanned aircraft (UA) experienced loss of power turbine speed (NP) during an in-flight fuel transfer. The UA was placed in autorotation mode but contacted the ground tail-first and slid on its side 50 feet.

RQ-7B

CLASS B

- The UA experienced a spike in operating temperature and then engine failure. The recovery chute deployed, but the UA was never located.

CLASS C

- The UA operator experienced a GEN/IGNITION FAIL indication, followed by loss of RPM. The recovery chute deployed and the UA was recovered with damage.

LOSSES AVIATION — Class A/Fatalities as of Oct. 5, 2010

ATTACK	2/1
RECON	4/4
UTILITY	8/11
CARGO	4/0
TRAINING	0/0
FIXED-WING	3/0
UAS	6/0
TOTAL	27/16

GROUND

Other

CLASS A

- A Department of the Army Civilian was killed when the forklift he was performing maintenance on fell off its jack stands, pinning him underneath.

Personnel Injury

CLASS A

- A Soldier drowned when he jumped into the water to help another Soldier recover a fishing boat that had drifted away from the dock.
- A Soldier died after he fell from a cliff during combat operations.
- A Soldier drowned when his combat logistics patrol convoy was caught in a flash flood. The Soldier was swept away as he tried to climb out of his Mine Resistant Ambush Protected (MRAP) vehicle to seek higher ground.
- A Soldier drowned when he lost his footing and was swept downstream as his team crossed a river.
- A Soldier died after he was pinned under a panel that fell from a radar system he was working on.

Explosive/Fire

CLASS A

- A Soldier was killed and another Soldier was injured when an unknown explosive detonated as they were inventorying ammunition at a holding facility.

CLASS B

- An MRAP was damaged when it caught fire while being towed following a radiator fan belt failure.

LOSSES GROUND — Class A/Fatalities as of Oct. 5, 2010

AMV	17/7
ACV	12/10
PERSONNEL INJURY (includes weapons-handling accidents)	31/27
FIRE/EXPLOSIVE	6/3
PROPERTY DAMAGE	2/0
TOTAL	68/47

- A Soldier had three fingers amputated at the first joint when he lost his grip on a live 60 mm round and it fell down a gun tube and detonated.

DRIVING

POV

CLASS A

- An unbelted Soldier was partially ejected and crushed by his SUV when he lost control in an "S" turn, left the road and overturned.
- An unbelted Soldier died when he was partially ejected from one of the car's windows as it overturned after leaving the road.
- An unbelted Soldier was thrown through his windshield and killed when he lost control of his SUV, went off the road and flipped over a guard rail.
- A Soldier was killed when his vehicle struck a parked trailer in a marked construction zone.
- Two Soldiers died when the rented vehicle they were riding in hit a pothole, went out of control and struck a tree.

POM

CLASS A

- A Soldier was killed when he struck a civilian van whose driver had violated right of way at a T-intersection. The Soldier, who suffered severe spinal injuries, was transported to a hospital for treatment, but later died.

LOSSES POV/POM — Class A/Fatalities as of Oct. 5, 2010

CAR	39/40
SUV/JEEP	10/11
TRUCK	8/9
MOTORCYCLE	43/40
PEDESTRIAN	12/13
OTHER* (*Includes vans and ATVs)	3/3
TOTAL	115/116

Fiscal Year 2009: 110 — Three Year Average: 118

- A Soldier died when he lost control of his motorcycle, fell off and was struck by a car.
- A Soldier was leading a group of riders at high speed when he failed to negotiate a turn, hit a stop sign and was killed.
- A Soldier died after an accident where he had gotten ahead of the group of riders he was with and crashed in a turn.
- A Soldier is being maintained on life support after he failed to negotiate a turn, struck a guardrail and was thrown from his bike.
- A Soldier died after his motorcycle struck a guardrail and he was thrown to the ground.

Pedestrian

CLASS A

- A Soldier was killed by a hit-and-run driver while conducting personal physical fitness training.

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FIRE PREVENTION: KEEPING THE HOLIDAYS HAPPY

KNOWLEDGE

VOL 4 DECEMBER 2010

OFFICIAL SAFETY MAGAZINE OF THE U.S. ARMY

KILL THE CHILL

- THE RIGHT CALL
- CHECK YOUR HEAD
- WINTER, YOUR CAR AND YOU

JUST ANOTHER DAY IN BAGHDAD

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KNOWLEDGE

OFFICIAL SAFETY MAGAZINE OF THE U.S. ARMY

LEADERS SOLDIERS CIVILIANS FAMILIES

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Mission statement: The United States Army Combat Readiness/Safety Center (USACR/Safety Center) supports our Army by collecting, analyzing and communicating 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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The holidays are upon us once again, and spending time with Family and friends will be at the top of many wish lists this year. I'd like to take this opportunity to thank you, our Army Family, for all you do every day and especially during this most special of seasons. Even in the face of extreme sacrifice and little rest, each of you — Soldiers, Family members and Civilians — continue to maintain steadfast watch over our nation and its people. As you take your seats at the holiday table, be it at home with loved ones or in a dining facility with your fellow warriors overseas, please know your service is remembered and appreciated by those you protect.

I wish you all a blessed, healthy and safe holiday season and look forward to the continuing successes 2011 will bring our great Army. Happy holidays and, as always, Army Safe is Army Strong!

WILLIAM T. WOLF
Brigadier General, USA
Director of Army Safety

"The **LESSONS** learned during this **CRITICAL TIME** can pay **GREAT DIVIDENDS** throughout the new year and **ENHANCE** Soldier **SAFETY** both **ON** and **OFF DUTY**."

REMAINING FOCUSED DURING THE HOLIDAYS

The 2010 holiday season is upon us. One of the best things about the holidays is having time to spend with Family and friends, and for many of our Soldiers, their Family members and our Civilians, visits like these are long overdue. Between deployments, assignments in locations far from home and the daily rigors of Army life, the holidays are often the only time Soldiers can relax and catch up with their loved ones. This downtime greatly benefits our Soldiers and the Families who support them, contributing to the overall resiliency and well-being of our total force. But it also provides a perfect opportunity for spouses, parents, siblings and other relatives to engage with their Soldiers and each other on safety, especially regarding driving and other off-duty hazards.

During last year's holiday exodus, we lost four Soldiers to off-duty accidents. Three of these deaths occurred in privately owned vehicles during the late evening or early morning hours in parts of the country affected by severe winter weather. The fourth fatality was a Soldier, home a little more than a month from a rotation to theater, who accidentally shot himself with a newly purchased handgun at his parents' house. All four Soldiers were on leave away from their duty stations at the time of their accidents, highlighting the critical need for active Family engagement when supervisors and peers aren't there to correct unsafe behavior.

While every individual is different and no single approach will work with all Soldiers, parents and spouses often know what it takes to reach their loved ones. Leaders are missing out if they don't leverage this influence every day of the year by involving Families in their safety programs and sharing information when needed, beginning with the holiday season. The lessons learned during this critical time can pay great dividends throughout the new year and enhance Soldier safety both on and off duty. Leaders can find great ideas and tips for involving Families in their safety programs by checking out the Family Engagement Kit on the USACR/Safety Center website at https://safety.army.mil.

Although the holidays are sure to be busy, we can't forget about our Band of Brothers and Sisters during the coming days and weeks. Take care of your buddies and remember to look out for those who don't have holiday plans. And for those of you continuing the mission through the holidays — whether downrange or at home station — ensure your peers and subordinates stay focused even though their minds may be somewhere else. Be extra vigilant, watch for those Soldiers who might be having a hard time and share the ways you've coped during holidays away from home. Never underestimate the positive impact your "war stories" and kind words can have on a struggling Soldier.

Finally, arm yourself with the best knowledge available to fight the hazards of cold weather. Snow and ice make for great fun on the slopes but are extremely dangerous on roadways, and winter weather, alcohol and speed are nearly always a lethal combination. This year's Army Safe Fall/Winter Campaign includes videos, posters, media articles and a toolkit that Leaders, Soldiers and Families can use to build safety programs and enhance safety awareness. The full campaign is available on the USACR/Safety Center website via the "Campaign Corner."

I wish you all the best the season has to offer and many blessings throughout the coming year. Wherever you are and whatever your plans, have a happy and safe holiday!

Army Safe is Army Strong!

MICHAEL EYER
Command Sergeant Major
U.S. Army Combat Readiness/Safety Center

THE RIGHT CALL

As a young warrant officer on my first assignment out of flight school, I was chomping at the bit to go out and do great things. I considered myself fortunate to be assigned to Joint Task Force-Bravo at Soto Cano Air Base in Honduras, a unit with an active peacetime mission.

CHIEF WARRANT OFFICER 3 PETER R LEONE III
U.S. Army Reserve
St. Augustine, Fla.

For the first several months, I flew hundreds of hours under the mentorship of many great pilots, including some Vietnam-era aviators near the end of their careers. With only one dot on my bar and about four months left on my tour, I received pilot in command (PC) orders and was told to make the commander proud.

My first assignment as a new PC was a five-day mission to deliver Air Force medical personnel to several small villages to conduct immunizations of Honduran nationals. My UH-1 was old, but she cleaned up nice. I was looking forward to the challenges of pre-global positioning system navigation using only charts and time/distance/heading to navigate to settlements that, in many cases, were nothing more than a cluster of huts in the middle of nowhere.

The initial leg of the flight was a long one. The first hour or so was filled with the happy chatter of a crew with good morale and glad to be in the air doing their job. The crew chief pinned open the doors and, after about an hour, boredom settled in. The warm breeze and the steady whine of the T-53 engine overhead threatened to put everybody to sleep in the back.

The door gunner came on the intercom and suggested we spice up the flight by dropping down and doing some terrain flight along a narrow, winding river below. His suggestion was met with a chorus of approval from the rest of the crew. I could see the passengers were excited over the possibility.

During our mission planning brief, we discussed low-level modes for this type mission. The rule was low-level modes were to be used "as necessary," and the unit standing operating procedures left this up to the PC's discretion. My first thought was that low-level flight really wasn't "necessary" at this point in the mission, but the temptation was there to have a little fun and treat the troops to some turn-and-burn excitement.

After months of doing what other PCs wanted to do, the decision was now up to me. Since I hadn't yet given a flat "no" to the idea, the crew sensed I might be on the fence. Now the pressure came from all sides. The intercom was jammed with "Come on, sir!" and "Let's do it!" The Air Force colonel in charge of the medical detail borrowed the door gunner's headset and challenged me to "show the Air Force how it's done." Even my co-pilot, a captain, joined in.

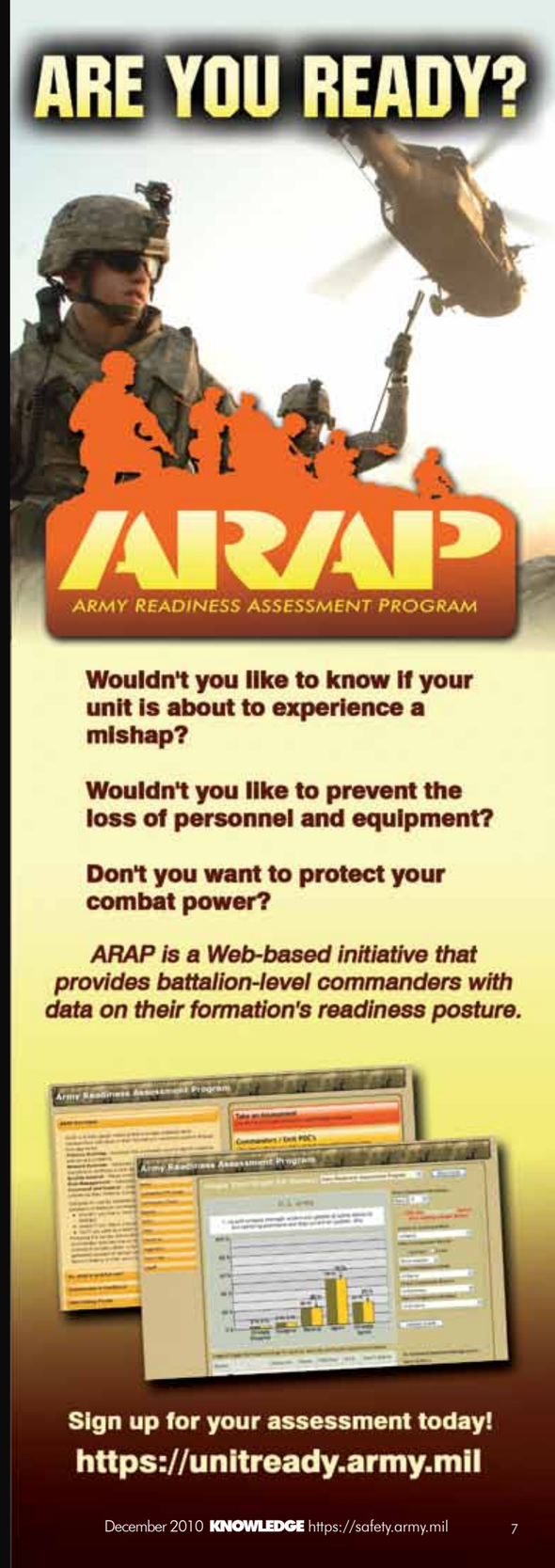
I had learned long ago to trust my gut, and an unplanned deviation for a joyride just didn't pass the gut check. They weren't going to leave it alone, so a go/no-go was required. There was universal disappointment when I rendered my decision of "negative."

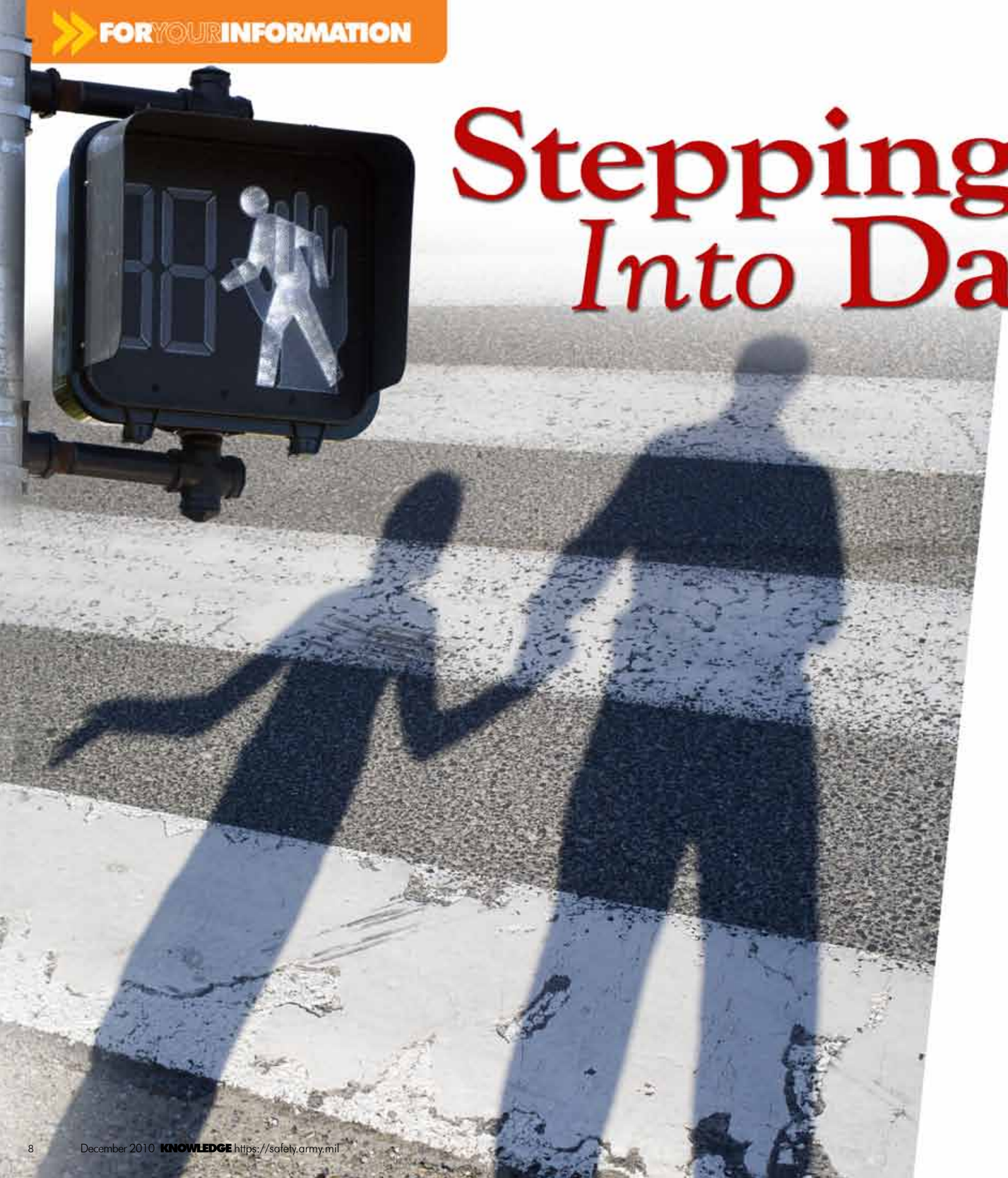
We continued the mission, visiting more than a dozen villages over the next two days. On the third day, I noted the next village on the list was located on the same river where I had previously declined to fly low level. I conducted a recon of the landing and pickup zones prior to landing. The first thing I noticed was the village actually straddled the river — half the village on one side, half on the other.

On short final, I detected a steel cable strung across the river between the two settlements. I inspected the cable after landing and estimated it to be about 2 inches in diameter. The cable was used to slide messages and packages from one side of the river to the other. Then it hit me like a bolt of lightning. If I had chosen to run the river at low level, my helicopter would've likely collided with that cable! At 90 knots, the wire strike protection system wouldn't have been effective against a cable that large and the collision would've been catastrophic. In short, my aircraft, crew and all aboard would have been dead at the bottom of the river.

I called the crew over and showed them the cable. Asking the group if they remembered their request to fly low-level, I let the significance of what I was showing them sink in. Our crew chief just shook his head and said, "Good call, sir." Several times over the next few days, he stopped whenever he saw me and repeated, "Good call, sir."

This incident drove home many lessons for my crew and me. I made the right call on this occasion, despite heavy pressure from my entire crew and some senior officers. However, I fault myself for even considering it. In this case, wrong would have meant dead. As aviators and Soldiers, we are risk takers by nature and necessity, but we don't have to be risk seekers.





Stepping Into Danger

GEORGE C. ARZENTE III
Installation Safety Office
Fort Campbell, Ky.

I was on temporary duty (TDY) at Naval Air Station Jacksonville, Fla., in December 2009 when I had an experience that reinforced the importance of pedestrian safety.

I had just refueled my government vehicle on base and headed out the gate. Within five minutes, I got caught up in bumper-to-bumper traffic. I remember thinking, "I'll bet someone had a fender-bender ahead and now I'm stuck in this traffic." The longer traffic continued to move at a snail's pace, the more annoyed I became. I thought, "It was probably someone texting or talking on a cell phone. Someone wasn't paying attention to what they were doing and here I am being inconvenienced."

After about 30 minutes, the line of traffic snaked through a mall parking lot. I was stopped at a red light when I noticed a man sitting on the ground to my right. He had his back against the front tire of a police car and was holding his head in his hands. I was puzzled for a moment until I looked ahead and saw an abandoned car stopped in the left lane of traffic. Beneath it, a white sheet covered someone's body. It struck me that the body under the sheet was awfully small for an adult. Then it hit me — it was a child!

With 23 years working as a safety professional, I immediately felt foolish I hadn't considered this could be a fatal accident. The next evening, when I arrived back home in Tennessee, I went on the Internet and discovered the little body under that sheet was that of a 6-year-old girl. The report said the little girl, her 5-year-old brother and her mother were walking home after Christmas shopping and had to cross a six-lane major thoroughfare.

The mother hadn't crossed this intersection before and didn't know she needed to push the crosswalk button for more time to cross safely. Once the traffic light had turned red and traffic stopped in all six lanes, she and her children began crossing the intersection. She was pushing her son in a stroller and holding her daughter's hand. They'd only passed the second lane of traffic when the light turned green. The mother said she heard a car rev its engine and, seconds later, her little girl was lying dead on the street. The mother suffered broken ribs and a broken leg — only her son escaped uninjured. A background check of the driver revealed a history of traffic violations. Those included multiple tickets for speeding, running stop signs and driving with an expired license or registration.

The driver's statement on the crash was never published, so I don't know his explanation of what happened. However, the fact remains he was responsible for operating his vehicle in a safe and alert manner. Even though he had the green light, he was responsible for ensuring the crosswalk was

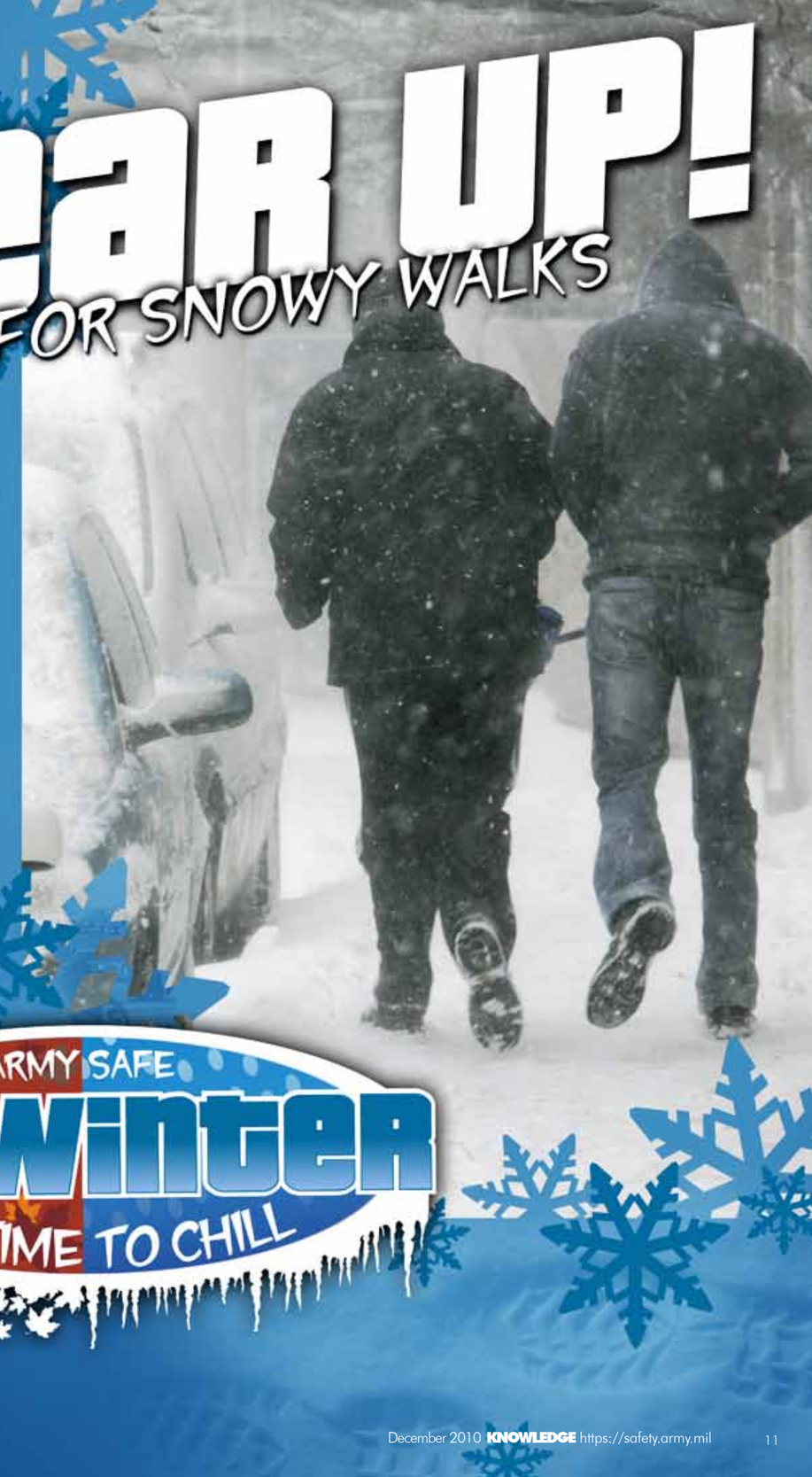
clear in front of him. But he didn't. As a result, six days before Christmas, a little girl lost her precious life in a terrible pedestrian accident.

The grief felt by that family was echoed by the families of Soldiers in fiscal 2010. Between Oct. 1, 2009, and Aug. 20, 2010, one Soldier died in an on-duty pedestrian accident and 11 more in off-duty pedestrian accidents — nine of which occurred between 9 p.m. and 4 a.m. In some cases, Soldiers put themselves in danger by walking along or crossing roads after drinking. In other cases, careless motorists ran down Soldiers in crosswalks or while jogging. In one case, a Soldier on her way to sick call was killed by a car when she stepped from the sidewalk into a parking lot. Two Soldiers trying to be Good Samaritans were struck and killed by passing vehicles as they stopped to assist other motorists. Most recently, an intoxicated Soldier was walking down the middle of a road when he was struck and killed. In perhaps the most bizarre case, two Soldiers got into an argument while driving on an interstate, pulled onto the shoulder, got out and began fighting. Both Soldiers were struck and killed by a passing motorist.

Nothing can be done for these Soldiers. However, you don't have to join them in the accident reports. Here are some safety tips for you when you're traveling via the "shoe leather express."

- Always walk on the sidewalk. If there is no sidewalk and you must walk in the roadway, always walk facing traffic.
- Dress to be seen. Wearing bright or light-colored clothing helps drivers see you. Reflective clothing is the best, but never assume drivers can or have seen you.
- Cross streets only at marked crosswalks or intersections.
- If crossing a multiple-lane roadway, pedestrians should visually check each lane as they proceed to ensure they are clear.
- If a car is parked where you are trying to cross, look for other drivers who may be pulling out and not see you because they are looking for traffic.
- Remember, telephone poles, utility boxes and parked vehicles can interfere with an oncoming driver's ability to see you.
- Look LEFT – RIGHT – LEFT in countries like the United States, where motorists drive on the right side of the street. In Japan or other nations where drivers use the left side of the road, look RIGHT – LEFT – RIGHT prior to entering the street.
- Give drivers ample time to stop before you enter the crosswalk.
- Crossing at locations with traffic signals helps motorists see you.
- Wearing headphones while walking, skating, jogging, bicycling or riding a motorcycle, pocket bike or moped on post is prohibited. If you choose to wear headphones off post, always remove them while crossing the street so you can hear approaching traffic.
- Always hold a child by the hand while crossing a street. Remember, walk, don't run.
- If the intersection has a pedestrian walk button, press it and cross when you are cleared to go, keeping in mind that all crosswalks do not allow the same amount of time to cross.

gear up! FOR SNOWY WALKS



- Never assume drivers can see you or will stop for you.

- Make eye contact with drivers to ensure they see you.

- Don't take a walk signal, a green light or a driver for granted. Look both ways to be certain.

- Crossing safely is your responsibility.

ARMY SAFE
FALL WINTER
NO TIME TO CHILL

CHECK YOUR HEAD

GUNNERY SGT. SHANE LEVINGS
1st Battalion, 4th Marines, 1st Marine Division
Camp Pendleton, Calif.

When I was a young, hard-charging lance corporal, I was put in charge of a vehicle that had a mounted .50-caliber heavy machine gun. I had a very experienced machine-gun team and we'd conducted several live-fire evolutions over the past few months. We were doing very well — so well that all of us were getting big heads.

When we returned to base after 27 days in the field, we were surprised to find we had several newbies straight from the U.S. Marine Corps School of Infantry. Being the junior vehicle commander in the company, I never expected any of these new Marines to be placed in my truck. Man, was I ever wrong.

I received a new private as a gunner, while my experienced gunner was placed in a different vehicle. This was upsetting to me and the rest of my crew because we'd lost one of the best machine-gunners in the battalion. This would be the first time I had to train a new Marine in his job, but I accepted the challenge with great pride.

The whole team was doing well during the next field exercise, but we noticed the disadvantage of losing our previous gunner. Still, the new private was coming along faster than expected, and we were helping train him to the best of our abilities. About two months into that training, we were working like a well-oiled machine and back as one of the best teams in the company. Once again, though, we were getting complacent because we trusted each other's decisions and actions.

Around March, we were out on another long training exercise with the battalion. We were good. The commanders from other companies were requesting the whole section to support them because all the vehicle teams were very proficient and well rounded. This confidence is what got to us — especially me.

We had five HMMWVs in our section. We used two of them to mount our Browning M2 .50-caliber machine guns; two for our tube-launched, optically tracked, wire-guided (TOW) systems; and the section leader had an MK-19 machine gun. When the convoy was traveling, I was in the lead vehicle while the section leader was in the third vehicle to center him in case we were attacked from any direction.

If you are familiar with the .50-caliber, you know headspace and timing are vital for the weapon to operate properly. As a machine-gunner, we have three simple rules to follow when dealing with the .50-caliber: 1) Check the headspace and timing any time you conduct a barrel change; 2) Check the headspace and timing whenever there is a change in gunners; and 3) Check the headspace and timing whenever the gunner is in doubt. These are our golden rules and we're supposed to follow them at all costs.

We were returning to our battalion's defense after conducting some deliberate attacks. Because the .50-caliber gets very dirty in the desert, we'd positioned our trucks in the perimeter and were conducting our weapons maintenance and drawing range cards, which we do after every mission. I went up top to assist my gunner with the cleaning because we received intelligence that we were going to be attacked within the hour.

We were in the process of getting the .50-caliber back together when the section leader called the vehicle commanders together to give us a down-and-dirty situation report. He then sent us back to our trucks to get ready for the upcoming attack. It was about to be "on" and my truck was ready — or so I thought.

Right as the attack was about to kick off, I got a call from the section leader to jump up on the gun and take over because there were many higher-ups watching us. I did as ordered, but I failed to do one important thing before I loaded my rounds and began to fire — check the headspace and timing! One of the three times you check it is when you change gunners, and I plain out failed to check it due to complacency.

As that first round fired to travel downrange, so did the barrel. The .50-caliber casing exploded inside the receiver and sent shrapnel everywhere. By the grace of God, my assistant gunner and I weren't injured. (You see, when this accident occurred, eye protection and gloves were not mandatory as they are today, so my assistant gunner and I are extremely lucky we both still have our vision.)

So what happened? As the gunner and I were putting the .50-caliber together, I was called away, so he finished by himself. In a rush, he put the barrel back in the barrel support but never screwed the barrel in or checked headspace and timing. Some might say this accident was his fault, but how could it be? My negligence was the cause. I was the one who failed to follow one of the three golden rules: Check headspace and timing whenever there is a change in the gunner.

This accident could have killed or seriously injured both of us. It was a leadership failure and failure to comply with the standards. This accident was preventable until complacency took over. It's a mistake I won't make again.

"This **ACCIDENT** could have **KILLED** or seriously **INJURED** both of **US**. It was a **LEADERSHIP** failure and **FAILURE** to **COMPLY** with the **STANDARDS**."

IS THE SAFETY ON?

The Range & Weapons Safety Toolbox is a collection of resources to help Leaders establish and maintain an effective range and weapons safety program.

RANGE & WEAPONS SAFETY TOOLBOX

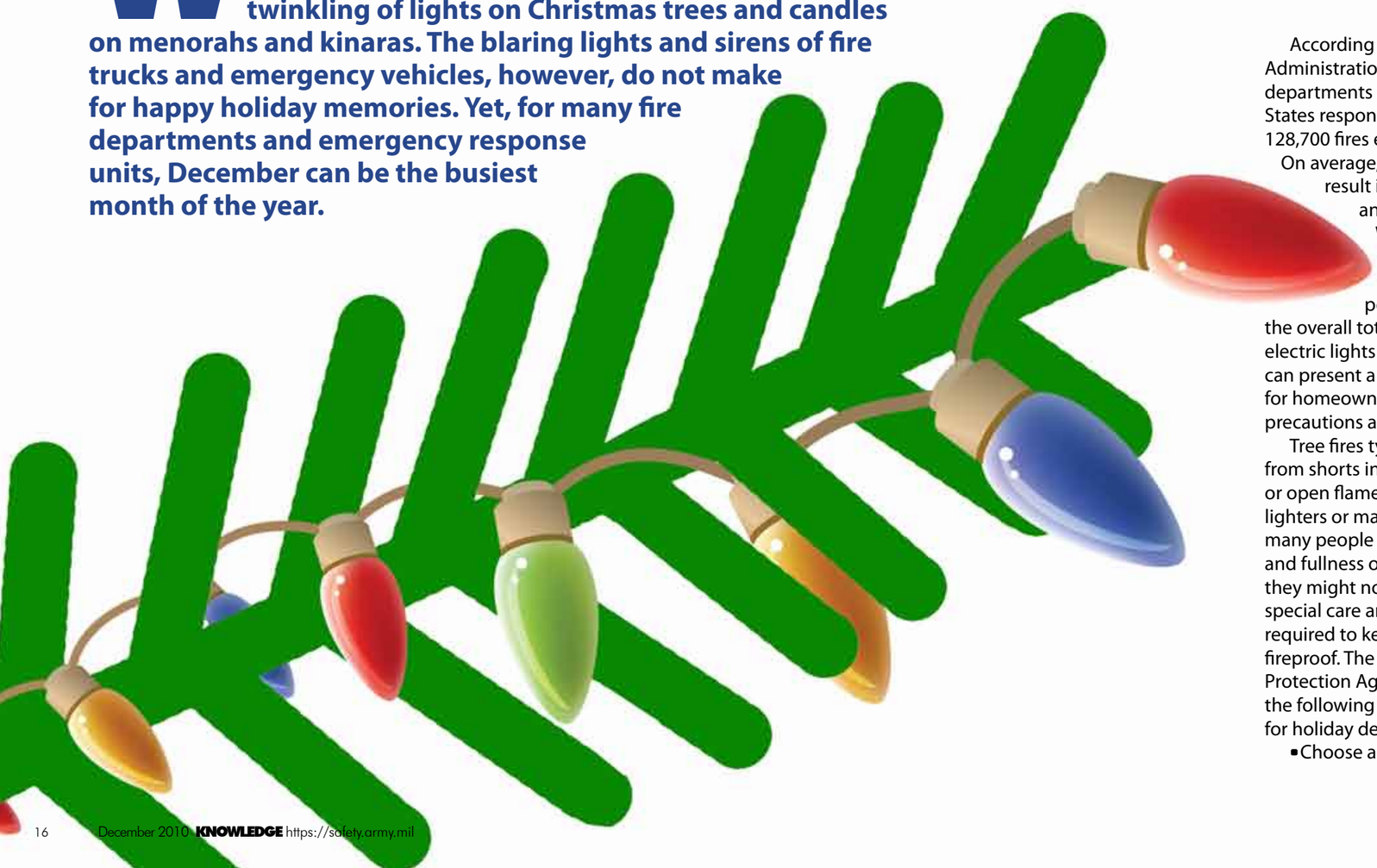
CHECK IT OUT TODAY!

https://safety.army.mil/rangeweaponssafety

Keeping the Holidays Happy

TRACEY RUSSELL
Ground Task Force
U.S. Army Combat Readiness/Safety Center
Fort Rucker, Ala.

When thinking about December, many warm thoughts come to mind: snowball fights, celebrations with Family and friends and the twinkling of lights on Christmas trees and candles on menorahs and kinaras. The blaring lights and sirens of fire trucks and emergency vehicles, however, do not make for happy holiday memories. Yet, for many fire departments and emergency response units, December can be the busiest month of the year.



According to the U.S. Fire Administration (USFA), fire departments across the United States respond to an estimated 128,700 fires every December. On average, these incidents result in 1,650 injuries and 415 deaths.

While Christmas tree fires account for only a small percentage of the overall total each year, electric lights and candles can present a very real hazard for homeowners if proper precautions aren't taken.

Tree fires typically start from shorts in electrical lights or open flames from candles, lighters or matches. And while many people prefer the smell and fullness of fresh-cut trees, they might not be aware of the special care and maintenance required to keep these trees fireproof. The National Fire Protection Agency provides the following safety tips for holiday decorations:

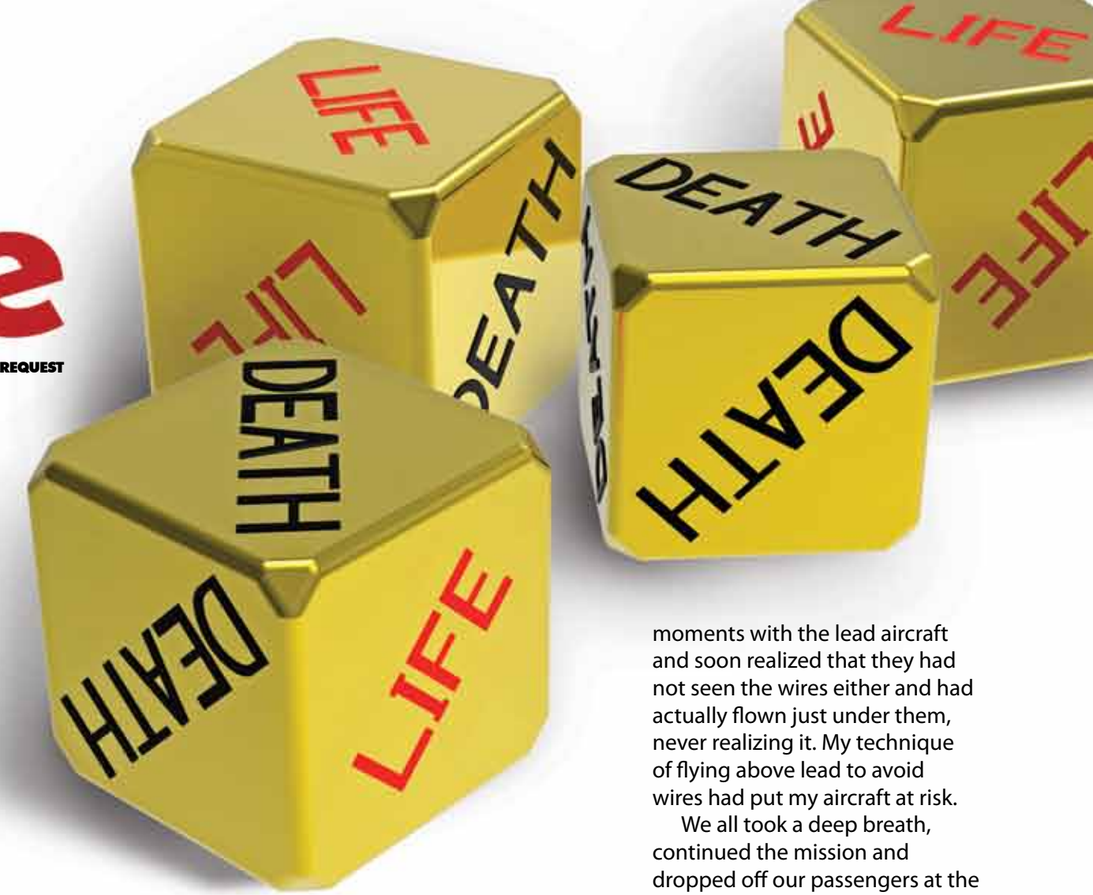
- Choose a tree with fresh, green needles that do not fall off when touched. Before placing the tree in the stand, cut 1 to 2 inches from the base of the trunk.
- Ensure the tree is at least three feet away from heat sources, such as fireplaces, radiators, candles, heat vents or lights, and that it's not blocking an exit.
- Add water to the tree stand. Be sure to add water daily and always turn off Christmas tree lights before leaving home or going to bed.
- Choose decorations that are flame resistant or flame retardant. Ensure artificial trees are labeled, certified or identified by the manufacturer as fire retardant.
- Keep lit candles away from decorations and other items that can burn. Never use lit candles to decorate a tree.
- Use lights that have the label of an independent testing laboratory.
- Replace any string of lights that has worn or broken cords or loose bulb connections.
- Use plastic clips, not nails, to hang lights so the cords are not damaged.

Once you've decked your halls, apply the same fire safety awareness to preparations for your holiday meal. According to the USFA, cooking fires are the leading cause of residential blazes during the month of December. Never leave items unattended on the stove and be extremely careful with towels and oven mitts near open flames.

The holidays can get a bit chaotic, but take time to think about fire safety before and during your celebrations. An extra moment of attention is all it takes to keep your season peaceful and ensure the only fire you experience is the one that's burning safely in your fireplace.

A Roll of the Dice

NAME WITHHELD BY REQUEST



While deployed to an Eastern European country in the late 1990s as a chief warrant officer three, I was a maintenance test pilot assigned to a UH-60L air assault company. My unit was more than halfway through our deployment with no major aircraft accidents. Well, at least none yet!

I started my duty day late in the afternoon with the intent of flying a night vision goggle (NVG) currency mission later that evening. I was in the flight operations office reviewing the mission and maintenance status boards to determine what needed my attention to support the night's missions. Seeing no major issues, I went about planning my own mission while the other night crews planned theirs.

A short time later, one of the pilots in command (PC) approached me regarding a two-ship air assault mission scheduled for that night. He asked if I was available to fill in for his pilot (PI) if he was unable to perform the mission. I told him I was available, and since it would meet my currency requirements, it was all the better. The PC replied he would let me know when he knew. The afternoon progressed and I heard nothing, so I continued planning my own mission.

The PC informed me later that evening I was needed for the air assault mission. "Great," I thought. Now I had to jump through my butt because the takeoff for the assault mission was rapidly approaching. The mission briefs were changed to reflect the correct crews; however, the PC had already conducted the detailed crew brief and there wasn't time to get me up-to-speed on what the mission entailed. The PC of my aircraft said it was an easy mission and all we had to do was follow lead. I knew better, but went with the flow. That was mistake No. 1.

> "We were just lucky, **PLAIN AND SIMPLE.** The dice were **ROLLED** and **WE CAME OUT ON TOP.**"

We found no issues during our preflight. It was during our run-up checks that the first issue surfaced. Our NVG searchlight would only extend about 45 degrees. It swiveled fully left and right and turned on and off, but it just wouldn't fully extend. After a brief discussion of the meaning of an "operational" searchlight in Army Regulation 95-1, we decided it was sufficient for our mission. Mistake No. 2.

The rest of the run-up, linkup and pickup of our passengers went off without a hitch. So, off we went with me on the controls into the inky blackness of the mountains of Kosovo to drop off 22 infantrymen on some dark ridgeline. I knew nothing about the route or the location. Mistake No. 3.

The flight to the mountains was also uneventful. I was flying and my PC was comfortably watching the world go by. I continued fiddling with the searchlight, hoping like hell that just one more cycle of the switch would free the stuck light and provide enough illumination for my totally dark environment. Instead, all I had was the 30- to 40-degree illumination under and slightly forward of the nose. Also during this flight, I was applying a technique I had subconsciously learned of flying higher than lead in the belief that as long as I was above and behind the lead aircraft, I wouldn't hit any unnoticed wires that might be along the route of flight. Mistake No. 4. Never mind that we had an updated hazards map onboard and flying the specified route would have eliminated that hazard.

We entered the mountain range in a valley and flew up that valley at about 100 knots indicated airspeed. I clearly saw the lead ship navigating up the valley, probably 100 to 200 feet below me and 10 rotor disks ahead, with an infrared (IR) searchlight illuminating his pathway. This is where the fun began.

For whatever reason, I pushed the IR searchlight button one more time to attempt to see in front of me. Lo and behold, what did I see? Three sets of large wires were spread evenly and neatly dead center in front of our windshield! I reacted instinctively, yelling, "Wires!" across the internal communication system (ICS). I then yanked all the collective I could pull, applied aft cyclic and mentally prepared for impact. The engines screamed in rapid response and the rotor held its 100 percent RPM, but I just knew it was too late. Suddenly, a thought flashed through my mind of what our sleepy passengers were thinking in the back, oblivious to what I had just yelled across the ICS and what was about to happen to us.

I knew I had reacted soon enough to avert a full head-on strike, but I was also dreadfully aware it would be a miracle if the tail section or tail landing gear didn't snag those wires. After a few terrifying seconds, nothing happened. The PC was pulling himself together asking what had just happened, so I told him. He never saw the wires. We continued flying, discussing the last few moments with the lead aircraft and soon realized that they had not seen the wires either and had actually flown just under them, never realizing it. My technique of flying above lead to avoid wires had put my aircraft at risk.

We all took a deep breath, continued the mission and dropped off our passengers at the designated landing zone without further incident. We flew back to base, shut down and pulled out the maps of the section where the incident had occurred. We immediately realized that not only had lead underflown the wires, but they were plainly marked on my PC's and the lead ship's hazard map. Talk about complacency, overconfidence and a lack of discipline that created a chain of events that nearly led to disaster.

In this case, the result wasn't an accident. Nevertheless, it wasn't due to any planning on our part either. We were just lucky, plain and simple. The dice were rolled and we came out on top. Why was it that I just happened to turn on the searchlight moments before a potential impact can only be answered by the big overwatch guy in the sky. Needless to say, we changed our ways.

Winter, Your Car and You

NATIONAL SAFETY COUNCIL
www.nsc.org

Editor's note: For Soldiers driving in combat, the biggest threat on the road is spelled "I-E-D." For Soldiers driving at home this Christmas, the biggest threat may well be spelled "I-C-E." Will you be its victim?

Driving in the winter means snow, sleet and ice that can lead to slower traffic, hazardous road conditions, hot tempers and unforeseen dangers. To help you make it safely through winter, here are some suggestions from the National Safety Council to make sure that you and your vehicle are prepared.

Weather

When winter weather sends temperatures plunging, snow and ice affects the road and driving conditions and can pose serious problems. Therefore, it is important to listen to radio and television news forecasts. You can also check out your local daily paper. Being forewarned is being forearmed.

Your Car

Make sure your car is prepared for winter. Start with a checkup that includes:

- Checking the ignition, brakes, wiring, radiator hoses, fan belts and wiper blades. Replacing cracked or worn hoses and belts now can save you a headache later.
- Changing your spark plugs according to the scheduled maintenance plan shown in your owner's manual. This will ensure better mileage and easier starts in the cold.
- Checking the air, fuel and emission filters along with the positive crankcase ventilation valve (PCV). This will make your car run smoother and improve mileage.
- Inspecting the distributor (if your vehicle has one). Look for cracks or chips. These can cause your car to run poorly.
- Checking the battery. If possible, check the fluid level. Check the date the battery was installed and inspect the cables and connections for corrosion.
- Checking the tires for air pressure, tread depth and the condition of the sidewalls. Worn or improperly inflated tires can be hazardous any time, especially on snow and ice.
- Checking the antifreeze levels. The optimum coolant combination is a 50-50 mix of antifreeze and water. Refer to your owner's manual.

Service your car according to the scheduled maintenance listed in your owner's manual to ensure higher gas mileage, quicker starts and better passing performance.

Necessary Equipment

An emergency situation can arise at any time and you must be prepared. Here are some items you should have with you on the road:

- Spare tire (properly inflated), wheel wrench and proper jack.
- Shovel. A small, foldable camping shovel or entrenching tool will work fine.
- Jumper cables. Invest in a good set.
- Tow and tire chains.
- Bag of salt or kitty litter.
- Tool kit. Basic tools like screwdrivers, an adjustable wrench, pliers, hammer, spare fuses and electrical tape can come in handy. If you have to get out of your vehicle, consider wearing a reflective vest or belt to help passing drivers see you.

Essential Supplies

Be prepared by keeping a "survival kit" in your car. Replace any of the items you use. Essential supplies include:

- Working flashlight and extra batteries
- Flares
- Reflective triangles and a brightly colored cloth
- Compass
- First aid kit
- Windshield cleaning squeegee
- Ice scraper and snow brush
- Wooden, strike-on-anything, stick matches in a waterproof container
- Scissors and string or cord
- Non-perishable, high-energy foods such as unsalted canned nuts, dried fruits and hard candy

In addition, if you are driving long distances under cold, snowy and icy conditions, you should also carry supplies to keep you warm. These include items such as heavy woolen mittens, socks, a cap and blankets.

If You Become Stranded

- Do not leave your car unless you know exactly where you are, how far it is to possible help and are certain you will improve your situation.
- To attract attention, light two flares and place one in front of your vehicle and one behind it at a safe distance to warn approaching vehicles.
- If you are sure the car's exhaust pipe is not blocked, run the engine and heater for 10 minutes every hour or so, depending on how much gas you have in the tank.
- Use the woolen items and blankets to keep warm and protect yourself from hypothermia and frostbite.
- Keep at least one window slightly open. Heavy snow and ice can seal a car shut.
- Eat hard candy to keep your mouth moist.

So, do you have a plan to survive your road trips at home this winter? Whether the threat is spelled "I-C-E" or "I-E-D," you don't have to be a victim.

"An **EMERGENCY** situation can **ARISE** at **ANY TIME** and you must be **PREPARED.**"

ROAD RULES

POV TOOLBOX

The Privately Owned Vehicle (POV) Risk Management Toolbox is a tool for commanders, Leaders, supervisors and subordinates to use in their organizations. The toolbox contains best practice examples and lessons learned that can be used as accident prevention measures when developing a unit POV safety program.

Test Drive It Today!

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ARMY SAFE IS ARMY STRONG

1 BAND OF BROTHERS & SISTERS

KILL THE CHILL

VICKI ARNESON-BAKER
Commandant of the Marine Corps-Safety Division
Fort Rucker, Ala.

Each year, Soldiers experience cold weather-related injuries. The responsibility for preventing these injuries is a command and leadership function, as well as a personal responsibility for each Soldier.

Exposure to the cold can lead to a variety of problems for Soldiers and Leaders. However, while the cold makes military tasks more difficult, it does not make them impossible. The key to overcoming the cold and successfully completing the mission lies within an understanding of cold weather injuries and how to prevent them. Officials at the Armed Forces Health Surveillance Center offer the following descriptions of the most common cold weather injuries and information on how to prevent them.

Chilblains

Chilblains are a nonfreezing cold injury resulting from repeated, prolonged skin exposure to cold and wet (high humidity) temperatures above freezing. Exposed skin becomes red, tender and hot to the touch and is usually itchy. These symptoms can worsen to an aching, prickly (pins and needles) sensation and then numbness. Chilblains can develop in exposed skin in only a few hours. The most commonly affected areas are the ears, nose, fingers and toes.

Immersion Foot/Trench Foot

Immersion foot/trench foot is a nonfreezing injury that results from prolonged exposure to wet conditions between 32 F to 60 F or inactivity with damp socks and boots. Immersing feet in cold water, not changing socks frequently, not maintaining proper hygiene and allowing sweat to accumulate inside boots or socks will soften the skin, causing tissue loss and often infection. Symptoms in affected areas include cold, swollen, discolored and waxy flesh accompanied by tingling sensations, numbness and pain. In extreme cases, the flesh dies and amputation may be necessary.

Frostnip

Frostnip is the freezing of the top layers of skin tissue and is considered the first degree of frostbite. Frostnip usually results from short-duration exposure to cold air or contact with a cold object such as metal. Exposed skin such as the cheeks, ears, fingers and wrists are more likely to develop frostnip. The top layer of frozen skin

DID YOU KNOW?

According to the U.S. Army Public Health Command, the typical cold weather casualty …

- is 20 years old.
- is from a southern state.
- is an E4 or below.
- has less than 18 months in service.
- has experienced a cold weather injury before.
- wears cold weather gear when not needed.
- sleeps in a vehicle.

becomes white and waxy and feels hard and rubbery while the deeper tissue is still soft. Affected areas feel numb and may become swollen but do not blister. Frozen skin thaws quickly, becoming red and painful with eventual peeling. Complete healing usually occurs within 10 days, and frostnip is normally reversible.

Frostbite

Frostbite is the actual freezing of skin tissue. It can extend through all layers of the skin and freeze muscle and bone. Frozen skin may turn red and then gray-blue with blisters. In the worst cases, the skin dies and turns blue-black. At this stage, amputation is often required. Deeply frozen skin feels "wooden" to the touch and the affected body part is too stiff to move.

Instantaneous frostbite can occur when skin comes in contact with super-cooled liquids, including petroleum, oils and lubricants; fuel; antifreeze; and alcohol — all of which remain liquid at temperatures as low as minus 40 F.

Hypothermia

Hypothermia is a potentially life-threatening condition. It is defined as a general cooling of the body's core temperature below 95 F (normal body temperature is 98.6 F). Hypothermia sets in when body heat loss exceeds the body's heat production due to prolonged cold exposure. Although hypothermia is usually associated with cold climates, it can occur at temperatures well above freezing, especially when a person is exposed to wet conditions over an extended period of time.

Signs and symptoms of hypothermia change as body temperature falls. Mental functions typically decline first, marked with impaired decision-making ability, slurred speech, disorientation, incoherence, irrationality and possible unconsciousness. Muscle functions deteriorate with shivering and loss of fine motor ability (e.g., unable to complete tasks with hands), progressing to stumbling, clumsiness and falling. In severe cases, shivering ceases and the victim exhibits stiffness and an inability to move. Pulse and respiration rates can decrease, progressing to unconsciousness, irregular heartbeat and death.

Unfortunately, early signs and symptoms of hypothermia can be difficult to recognize and may go undetected. Victims may deny they are in trouble, so believe the symptoms, not the victim.

Dehydration

Dehydration is a lack of water in the body. Most people associate dehydration with hot weather, but it is very easy to become dehydrated in cold weather. Soldiers can fall victim to dehydration when they fail to drink enough liquid and underestimate fluid loss from sweating. Proper hydration is especially important in cold weather because dehydration adversely affects the body's resistance to cold injury, increasing the chance of cold weather injuries. Remember that proper hydration is essential to supplying the fuel and energy necessary for heat production.

Conclusion

Understanding the factors contributing to cold weather injuries provides a better understanding of the best methods to combat the cold. Environmental factors that can contribute to cold weather injuries include temperature, wind, rain and altitude. Additional factors include immersion; workload; duration of cold/wet exposure; and individual risk factors such as physical fitness, fatigue, health, prior history of cold injury, use of medications, alcohol, nicotine and poor nutrition.

Cold weather injuries are preventable, so people of all ages — Soldiers, Civilians and Family members — must be prepared to kill the chill. Remember, battling the cold is like battling any other enemy — mission success happens only through proper planning and training. Don't get left out in the cold this winter.

PREVENTING COLD INJURIES

Individuals can work and play in cold environments if they are properly prepared and understand basic control measures to prevent cold weather injuries.

Keep the Body Warm

- Keep moving by exercising big muscles (arms and legs) to keep warm.
- Avoid alcohol use. Alcohol impairs the body's ability to shiver and gives a false sense of warmth.
- Avoid all tobacco products, as they decrease blood circulation to the skin.
- Eat all meals to maintain energy.
- Drink water or warm non-caffeinated fluids to prevent dehydration. Drinking warm liquids like decaffeinated tea and hot chocolate that contain sugar provides energy to help the body generate additional heat.
- Limit the amount of time spent outside on extremely cold days and periodically move into warm areas such as warming tents.

Wear Proper Clothing

- Wear several layers of loose clothing rather than one or two bulky layers. Air trapped between layers acts as insulation against the cold. Layers may also be removed if you become too hot. Additionally, loose clothing allows blood to circulate to the extremities.
- Ensure all clothing is in good condition, clean and dry. Change wet, damp clothes immediately.

Protect Feet

- Carry extra pairs of socks and change damp socks immediately. Use foot powder to help absorb moisture.
- Avoid tight socks and boots, and never over-tighten boots or shoes.
- Wear overshoes to keep boots and socks clean and dry.

Protect Hands

- Wear gloves or mittens, preferably with inserts, to avoid frostbite injuries.
- Keep gloves and mittens clean and dry. Change damp gloves immediately.
- Warm hands under clothes if they become numb.
- Avoid skin contact with snow, fuel or bare metal that has been exposed to the cold for extended periods.

Protect the Head, Face and Ears

- Wear a hat. As much as 70 percent or more of the body's heat is lost through an uncovered head.
- Cover your face and ears with a scarf to prevent frostbite injuries. In combination, a hat and scarf protect the skin and retain body heat.
- Warm your face and ears by covering, but not rubbing, with your hands.
- Exercise facial muscles to help maintain circulation.

Protect Friends and Family

- Watch for signs of frostbite and other cold weather injuries in your buddies.
- Ask about and assist with rewarming the feet, hands, ears and face.
- Immediately treat persons showing any signs or symptoms of cold injury.
- Remove sick and injured individuals from the cold; they are very susceptible to cold injuries.

More information on cold weather safety and many other winter safety topics is available on the U.S. Army Combat Readiness/Safety Center website at https://safety.army.mil under the Fall/Winter Safety campaign tab.

Just another Day in Baghdad

STAFF SGT. ANTHONY R. DAVIS
TRADOC Flight Detachment
Fort Monroe, Va.

The day started just like any other in Baghdad, Iraq. We began by reviewing the mission plan and manifest for the day. The route of flight was briefed and all flight crew actions were discussed. We agreed on a timeline to meet at the aircraft after dinner. I had no real concern for this mission's crew mix in the area of operations.

We returned from dinner and began to prepare our weapons and gear with only minimal discussion as the crew began to set up all necessary items for the mission. After preparation to fly, I heard, "Clear the P," which stands for auxiliary power unit. I responded, "P is clear." With a thunderous roar, the Black Hawk came to life. I climbed through my gunner's window as I had so many times before in preparation to take off.

We received clearance to depart the taxiway and transition via what we call "Mike." This was a direct path to Forward Operating Base (FOB) Liberty. Upon landing at FOB Liberty, I exited the aircraft to load my passengers (PAX) at the pickup zone. With PAX in tow, we boarded the aircraft and prepared for takeoff. I heard the major say, "I have the controls." The instructor pilot (IP) then said, "You have the controls." I was a little surprised because the major hardly ever flew due to his position at the staff level.

We took off out of FOB Liberty in a direction that wasn't familiar to me, but I didn't think much of it at the time. I then heard the IP say, "Hey, sir, I think we just flew through a ROZ (restricted operations zone)." The major said, "Oh, well, no big deal."

Seconds later, the aircraft shook violently and began to vibrate. We heard traffic over Baghdad radio that a persistent threat detection system (PTDS) had been cut, so I began to scan higher than normal. I responded, "Sir, I think we just cut down the balloon." There was much confusion in the cockpit. It seemed the major had turned down the radios and was unaware of the balloon's cut tether.

We requested to return to parking and began the shutdown process. Upon exiting the aircraft, I was shocked by the major's haphazard attitude as if nothing had happened and just how close we came to an accident and possibly dying. With my flight gear still on, I began inspecting the rotor system and blades, all the time grateful we were alive. I was disheartened to see the damage to one of the rotor blade tip caps — a tear one-half the length of the cap.

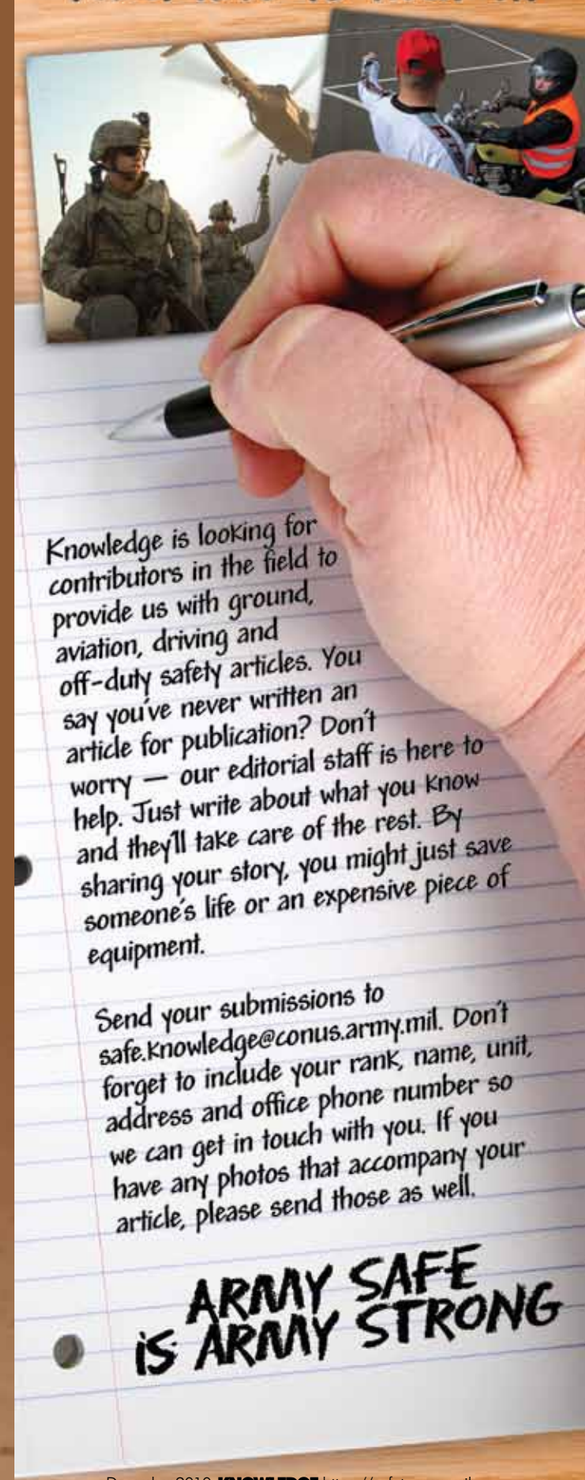
Everything slowed down for a minute as the aviation safety officer arrived on the scene. He informed us the PTDS had been severed from its tether and we were required to go to the doc for blood toxicology and urine samples.

That night was very long and drawn out, as was the rest of the week. I was grounded, pending an investigation, as I awaited the accident report findings. The findings stated the lack of crew cohesion was the main reason for the crew coordination breakdown. The staff officer lacked sufficient flight time in the area of operations, and both the pilot and co-pilot were deficient in responding to the violation of flying through the tethered aerostat. Neither one of the pilots did anything to correct the problem, nor did they coordinate with the crewmembers in the back of the aircraft. In sum, it was a series of severe crew coordination breakdowns that caused the problem and the destruction of a UH-60L tip cap and more $1 million damage to the PTDS.

What Can Your Unit Do?

- Ensure all aircrew members are trained and evaluated on the most current Aircrew Coordination Training-Enhanced programs available for your aircraft.
- Conduct crew and passenger briefings religiously and meticulously using a Leader-approved checklist as part of a standing operating procedure. Brief the actions and responsibilities of all aircrew members beforehand so if an emergency does occur, there is a plan in place instead of trying to "make it up as you go."
- Ensure team rehearsals are conducted before mission execution with emphasis on crew coordination, duties and responsibilities. Plan for the worst scenario, especially if the aircraft is "hot and heavy" or the weather is marginal.
- Emphasize to aircrews the importance of continuing to "fly the aircraft," asking for assistance, offering assistance and continuing to communicate, especially when things start to go bad.
- Conduct after-action reviews or debriefs after the mission and discuss crew coordination successes and deficiencies and how to improve.

Got a story to tell?
We'd love to hear it!



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ARMY SAFE IS ARMY STRONG

My Seat Belt Saved Me

MASTER SGT. MILTON I. LEACH
Northern Regional Medical Command
Walter Reed Army Medical Center
Washington, D.C.

It was a chilly 28 F when I got up early on a December morning to go to work at Ireland Community Hospital on Fort Knox, Ky. During good weather, it typically took me 30 minutes to cover the 18 miles from my home in Elizabethtown, Ky. However, it had snowed overnight, so I knew it was going to take me much longer than usual. What I didn't know was it would take me 2½ hours to reach the hospital and, when I did, I'd be in the back of an ambulance.

That morning, I got into my black 2000 Oldsmobile Intrigue and buckled up — as is my normal habit — and cautiously drove toward Fort Knox on U.S. Route 31. The snow on the road was about 3 inches thick and more snow was piled alongside the highway from road-clearing operations. I kept my speed down to 15 mph until I reached Old Fort Knox Road. I then turned onto the road, which ran straight about 30 feet before transitioning into a lazy S-turn that sloped downhill for a half mile.

Although there was only light snow on Old Fort Knox Road, I continued to drive very cautiously. However, I was unaware that there was a sheet of black ice covering the road beneath the snow. My car suddenly began sliding and twice I swerved back and forth across the road, trying to regain control. Nothing I did helped, and I went off the right shoulder, down a slope and into a ravine. As my car began rolling over, I started praying. After rolling four times, the Oldsmobile came to rest on its wheels and water flowed through every opening into the car. I was very scared, but at least I was alive and able to move. I unhooked my seat belt and attempted to get out of the car, but the door was jammed. I tried again to push it open, but the door wouldn't budge. Still very scared, I climbed out through a window and found myself standing chest deep in very cold water. The top of my car was smashed down and the windshield, rear window and side windows were all broken out. I couldn't see the trunk or hood — both were underwater.

> "**NO ONE** had **WITNESSED** the **ACCIDENT** and my calls for **HELP** went **UNHEARD** and **UNANSWERED**."

It was still dark and the roads were empty. No one had witnessed the accident and my calls for help went unheard and unanswered. I tried to climb out of the ravine but kept slipping because the sides were covered with ice and snow. I was scared and in pain. Using my cell phone, I called 911, explained the situation and requested help. I then called the operating room, knowing one of my on-call technicians would be there. I told them I'd run off the road and needed help. Ultimately, the fire department and emergency medical technicians arrived on scene. After a brief rescue operation, I was put on a stretcher, given a neck brace and taken to the hospital in the back of an ambulance.

After a complete examination, the doctor diagnosed me with a bruised left shoulder (from the seat belt). Although I was in a lot of pain, I was alive and fortunate not to have broken any bones, suffered any serious cuts or experienced a concussion or amnesia. My car was destroyed, but I had survived. The ambulance crew, firefighters and doctors were astonished that my injuries weren't worse and attributed that to my seat belt use.

That morning, my seat belt saved my life — of that I am sure. Had I been unbelted, I could have been injured or lost consciousness as my car rolled and been unable to escape when it flooded. Some people are afraid to wear seat belts, scared they will be trapped inside their car if it goes into the water. I found out the opposite was true — because of my seat belt, I was able to escape and survive.

I never put my car in gear without first buckling up and making sure my passengers do so too. I learned that December morning what a difference seat belts can make in a rollover accident. My seat belt saved my life and yours could do the same for you.

The bottom line message is simple — buckle up before you start up. Take care of safety first!

Do the Right Thing

1ST SGT. JAMES SITES
82nd Maintenance Company
Georgia Army National Guard
Fort Benning, Ga.

It was the fall of 1993 and I'd just joined the Georgia Army National Guard. After being out of the Army for a little more than a year, I was eager to return to service.

My first drill was at Fort Stewart, and the unit was heading to the field. Upon meeting my platoon sergeant, I was asked if I could drive a 5-ton truck. I proudly told him I was licensed to drive all of the Army's wheeled vehicles, 10-ton and below. As I began my preventive maintenance checks and services (PMCS), the platoon sergeant told me the truck had already been checked and was fine. "Just drive it," he said. At that moment, I had a choice to make. Do I do the right thing and stand firm, or do I concede to fit in.

The first thing I thought about was a specialist I knew who died in an accident during Desert Storm. She was an 88M (motor transport operator) and could drive a truck better than anyone I'd ever seen. I was a mechanic, and we became fast friends during motor stables. Every time I saw her, she was carrying her -10. She believed you could never be too careful. "Check your equipment before getting in," she would always say. It was something that was drilled into her head during driver training.

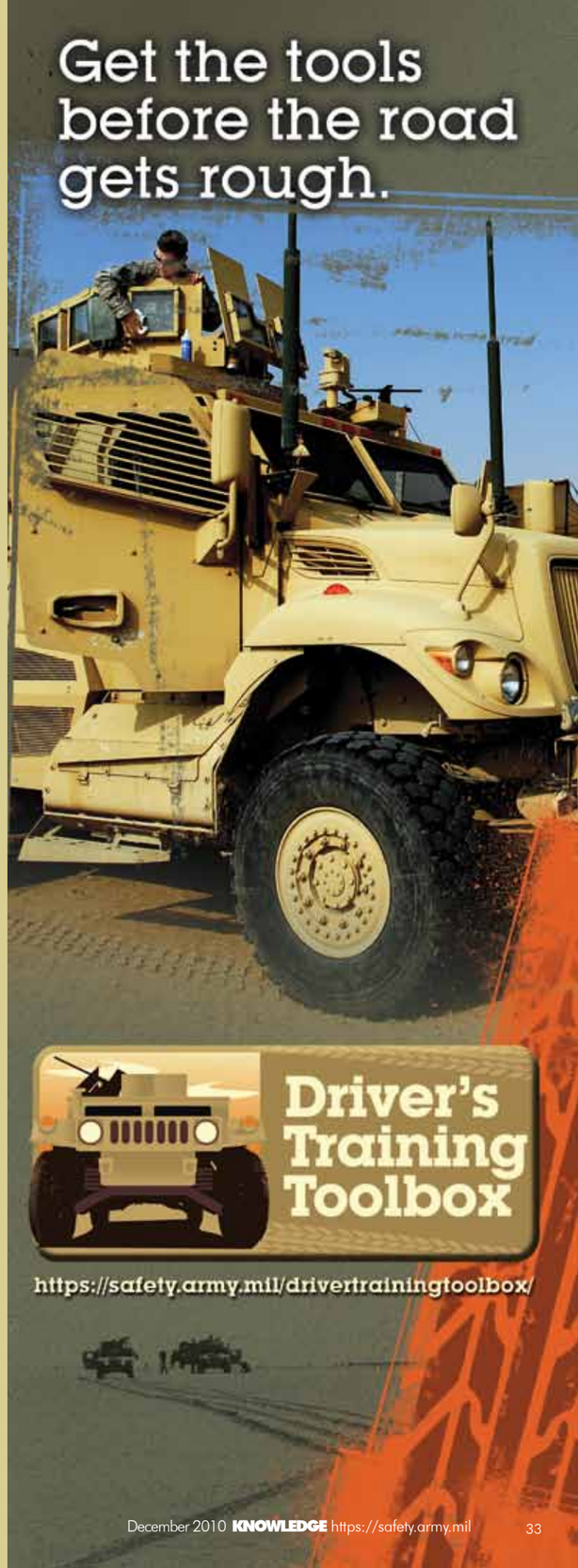
I then thought about how it felt to hear she'd died when the truck she was driving flipped. That memory gave me the strength to take the hard road. I told the platoon sergeant the requirements stated the one operating the vehicle was to conduct PMCS, not someone else. He wasn't too happy with me and said he'd find someone else to drive the truck.

While he was looking for another mechanic to drive the truck, I inspected it. When I got to the tires, I noticed the right front was low on air and the inner tread was worn. I couldn't believe someone had driven this truck in this condition on the interstate from Savannah to Fort Stewart.

When the platoon sergeant returned, he had another mechanic with him who was ready to jump into the seat and take off to the field. Before he could leave, I showed the platoon sergeant the tire. He decided to send the truck to the motor pool to have the tire replaced. As the young mechanic took off across the staging area toward the motor pool, I heard a loud bang. I looked up just in time to see the truck swerve sharply.

As I ran to check on the driver, I could see the tire had exploded and the truck was resting on its rim. Fortunately, the driver was all right. I then realized that if I'd taken the platoon sergeant's word that the truck was fine and driven to the field, the tire would have blown out on me. Driving at a higher rate of speed, I may have been seriously injured or even killed.

As I look back on this incident, I believe my friend was watching out for me. Remembering her commitment to safety gave me the courage to stand up for what I believed was right. Who would have thought that her driver training would have rubbed off on me? It might have saved my life that day.



SLOSHED on the SLOPES

RETIRED 1ST SGT. DAVID G. HARPER
Headquarters, Headquarters Company
501st Sustainment Brigade
Camp Carroll, South Korea

For some, alcohol is as much a part of skiing as zipping down the mountainside. In fact, a common visual is the sleek hero — drink in hand — flanked by several snow bunnies while relaxing in front of a roaring fire. On one ski trip, however, a friend and I learned alcohol has no place on the slopes.

It was the early 1980s and I was young, skilled and bulletproof — at least in my mind. I was fresh from a European tour, where I had haunted the slopes of the Alps in various countries. Now that I was stationed at Fort Carson, Colo., the Rocky Mountains were calling my name. A bunch of buddies and I decided a trip was in order, so we piled into a van one morning at "0-dark-thirty" and headed for Monarch Mountain's deep, white powder.

On the ride up to the slopes, a thermos was passed around with "Irish" coffee — you know, just to keep us warm. Once at the lodge, we wasted no time suiting up. I grabbed my bota bag, which was full of "warm-up juice," and headed for the lift. My friend, Joe, and I tore up the slopes until midday. By then, we were feeling tired, hungry and more than a little buzzed, so we headed for the lodge to get some chili and a few brews.

After warming up, it was back to the slopes. On the ride up the lift, Joe said, "Let's race; loser buys the beer at the end of the day." Of course, I was

ALCOHOL AND WINTER WEATHER

There is a common misconception that alcohol can warm your body in cold weather. In reality, it encourages dehydration and causes surface blood vessels to dilate, which cools the blood, thereby decreasing the body's temperature. The false sense of warmth you get actually leaves you more susceptible to cold weather injuries such as frostbite and hypothermia. In addition, the lack of oxygen at higher altitudes can intensify the effects of alcohol. Alcohol clouds judgment and common sense, creating a false sense of confidence. That's not a good thing before undertaking any dangerous activity.

more than game for the challenge. I got the jump off the lift and had the initial lead; however, by mid-slope, Joe started to gain on me. I tucked in and tried for even more breakneck speed, but I hit a slight bump, got squirrelly and lost my momentum. As Joe buzzed by, I could see him laughing. Unfortunately, he didn't get to collect on our bet. He did get a free helicopter ride and two weeks in the hospital — the victim of speed, overconfidence, alcohol … and a tree.

We've all been bombarded with the message that it is illegal to drink and drive, but many are unaware that the same rules apply to activities such as skiing, boating or snowboarding. In fact, if you are found under the influence after a skiing accident, you can be held financially liable. Some locations are also prosecuting offenders. It has become such a problem at some resorts that the ski patrol now carries breathalyzers and has violators arrested. What's more, Colorado has enacted a law targeting skiers acting in a careless manner that allows for a $1,000 fine for being drunk and stupid.

Fortunately, Joe recovered from his injuries and we both came away from this experience with an important lesson learned. When you're on the slopes, leave the booze behind. In addition to risking your own life, you're jeopardizing the safety of others on the mountain with you.

SKI PATROL!

Skiing can be a great way to spend a vacation. Before hitting the slopes, keep in mind the following safety tips provided by the National Ski Patrol.

- **Get into shape.** You'll enjoy skiing more if you're physically fit.
- **Obtain proper equipment.** Be sure to have your ski or snowboard bindings adjusted correctly at a ski shop. You can also rent good ski or snowboarding equipment at resorts.
- **Take a lesson.** The best way to become a good skier or snowboarder is to take a lesson from a qualified instructor.
- **Drink plenty of water.** Be careful not to become dehydrated.
- **Curb alcohol consumption.** Skiing and snowboarding do not mix with alcohol or drugs.
- **Dress in layers.** Layering allows you to accommodate your body's constantly changing temperature. For example, dress in polypropylene underwear (top and bottoms) which feels good next to the skin, dries quickly, absorbs sweat and keeps you warm. Wear a turtleneck, sweater and jacket.
- **Be prepared.** Mother Nature has a mind of her own. Bring a headband or hat to the slopes. Wear gloves or mittens (mittens are usually better for those susceptible to cold hands).
- **Wear sun protection.** The sun reflects off the snow and is stronger than you think, even on cloudy days!
- **Always wear eye protection.** Skiing and snowboarding are a lot more fun when you can see.
- **When buying skiwear, look for fabric that is water and wind resistant.** Look for wind flaps to shield zippers, snug cuffs at wrists and ankles, collars that can be snuggled up to the chin and drawstrings that can be adjusted for comfort and keep wind out. Be sure to buy quality clothing products.
- **Know your limits.** Learn to ski and snowboard smoothly — and in control. Stop before you become fatigued and, most of all, have fun!

For more information, visit the National Ski Patrol website at http://www.nsp.org.

Be Smart When You Jump-Start!

BOB VAN ELSBERG
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Fort Rucker, Ala.

It was just after New Year's and my wife and I were driving from my parents' home in Little Rock, Ark., back to Bonaire, Ga. It was back in the early 1990s, and Old Man Winter had plunged the temperatures through the floorboard in the Midwest and even parts of the South. We crawled along Interstate 40 east from Little Rock to Memphis, Tenn., running between 25 and 30 mph on patches of snow and black ice. By driving carefully, we avoided joining the other vehicles that had gone off the road. Nightfall came between Memphis and Nashville, and the snow reached the point I could no longer see to drive. Finally, exhausted and running out of my third gallon of antifreeze windshield washer fluid (something you need lots of on long trips in snowy conditions), we pulled off the road and found a hotel. It wasn't the Hilton, but any room with a warm bed looked pretty good that night.

Come morning, we dressed and headed out to the car with our luggage. There was a restaurant next to the hotel, so we planned to load our luggage, have breakfast and then hit the road. In the hotel parking lot, there was a Mercedes-Benz sedan with its hood up. I walked over to the owner and asked what was wrong. He told me his car had been running fine the previous night, but now he couldn't get it to turn over. He explained the car's diesel engine was hard to start on cold mornings — apparently much harder than a normal gasoline-powered engine. I felt sorry for his plight. I could tell he — like us — wanted to get back on the road.

Since his hood was up, I looked inside the engine compartment to locate the battery. Fortunately, the parking spots beside his car were empty, so I pulled my car close enough that my jumper cables could reach both our batteries. I connected the cables, making sure to attach them in proper sequence. He tried to crank his car, but it wouldn't start. He explained it would take time for his battery to develop a sufficient charge to turn over his engine. I started my engine and let it run for several minutes while my car warmed up and I cleared the snow off my windows, hood and trunk. Finally, the Mercedes started and I unhooked the battery cables, put them in my trunk and then went to breakfast with my wife. As we ate, two things stuck out in my mind: I'd better always have jumper cables with me during the winter, and maybe I needed to rethink the idea of buying a diesel-engine vehicle.

In wintertime, keeping jumper cables with your vehicle and knowing how to use them beats waiting for a tow truck. The National Safety Council offers the following tips on how to use your jumper cables so neither you nor your battery comes to a "shocking" conclusion.

If your battery's charge is too low to start your engine:

- Position another vehicle with a healthy battery next to your car, being careful they don't touch each other. Be sure both batteries are of the same voltage.
- Read the owner's manuals for both vehicles for any special directions.
- Turn off the ignitions of both vehicles and set the parking brakes. Place automatic transmissions in "Park" and standard transmissions in neutral.
- Wear safety glasses and gloves while using cables.
- Unless given different directions in the owner's manual, use the booster cables in this order:
  1. Clamp/connect one end of the positive (+) booster cable to the positive (+) post of the dead battery.
  2. Connect the other end of the same cable to the same marked post (+) of the booster battery.
  3. Connect the negative (-) booster cable to the negative (-) post of the booster battery.
  4. Make the final negative (-) booster cable connection on the engine block of the stalled vehicle away from the battery.
- Start the booster vehicle and let it run for a few minutes. Then, start the disabled vehicle.
- Remove the cables in the reverse order of connection, being very careful not to let the booster cable clamps touch each other or come in contact with car parts. Also, avoid the engine cooling fans, as they can sometimes run without the engine being on.

> "**JUMPER CABLES** can be handy **ANY TIME** of the **YEAR**, but **WINTER** puts an extra **STRAIN** on **BATTERIES**."

Jumper cables can be handy any time of the year, but winter puts an extra strain on batteries. Before you hit the road this Christmas, make sure you've got a good set of cables and know how to use them. After all, Santa won't have time to stop and give you a tow!

Preflight ... Complete!

CHIEF WARRANT OFFICER 4 SEAN HIGGINS
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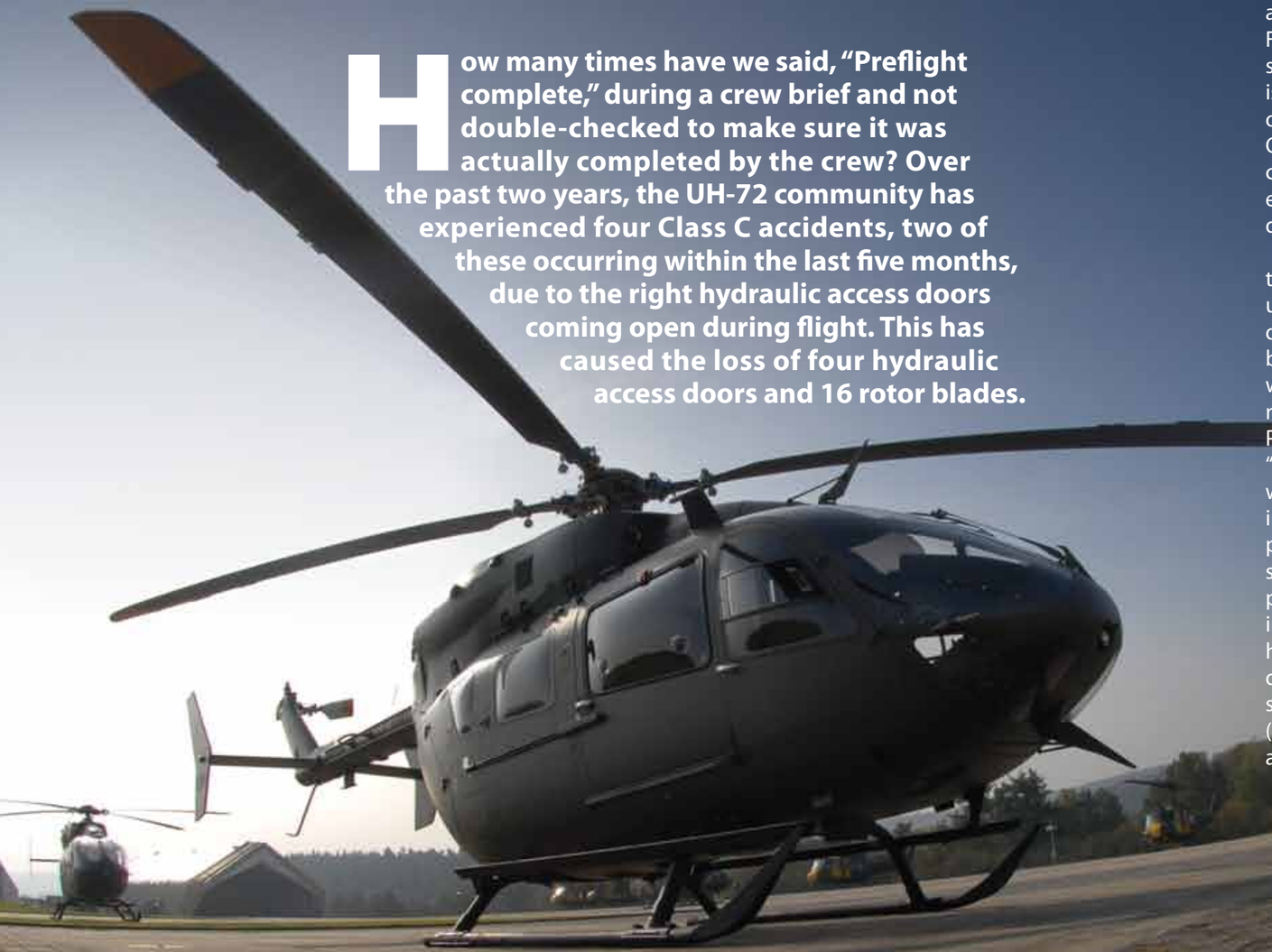

How many times have we said, "Preflight complete," during a crew brief and not double-checked to make sure it was actually completed by the crew? Over the past two years, the UH-72 community has experienced four Class C accidents, two of these occurring within the last five months, due to the right hydraulic access doors coming open during flight. This has caused the loss of four hydraulic access doors and 16 rotor blades.

Two human-error factors caused each of these accidents. The first aircrew-related cause factor was a crewmember failed to secure the hydraulic access door after checking the hydraulics system in accordance with the Rotorcraft Flight Manual (RFM). The RFM states, "The preflight check is essentially a visual check of the helicopter condition." One of the required preflight checks in the RFM before each flight is "Hydraulic access door – Closed, secured."

The second cause factor was the crew failed to notice the unsecured hydraulic access door during their walk-around before flight. In accordance with the aircrew training manual (ATM), Task 1022, Perform Preflight Inspection, "The PC (pilot in command) will ensure that a walk-around inspection is completed prior to flight." The ATM also states, "If circumstances permit, accomplish a preflight inspection during daylight hours." If you cannot preflight during daylight, then you should use an unfiltered (white) lens to supplement available lighting.

What Can We Do?

- Crewmembers should not become distracted during preflight. If you run into a maintenance problem during preflight, correct the issue and then preflight the area again.
- If you split up the preflight, sit down as a crew and go over the entire preflight checklist to ensure you visually inspected the aircraft and all required checks were completed in accordance with the RFM.
- The entire crew must do the walk-around, not just one person. As a technique, have one rated crewmember (RCM) walk clockwise and the other RCM counterclockwise before getting into the aircraft. If you have a nonrated crewmember, have him do one as well. The more sets of eyes, the better the chance of finding a problem. Remember to use an unfiltered lens during the walk-around if it is dark.

Summary

These accidents could have been prevented had the PC ensured the aircraft preflight was conducted in accordance with the RFM and ATM. As the PC, it is your responsibility.

Trouble in Paradise

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Editor's note: Swimming safety isn't a topic we give much thought to in December. However, every year, thousands of winter-weary travelers jet off to tropical locales to spend the holidays relaxing on the beach. What happened to the author is a perfect example why we can never give safety a day off — even while on vacation.

It was December 2004, and my family and I were enjoying a Hawaiian-style Christmas on the island of Oahu. We were even treated to a "white" Christmas at the renowned North Shore of Oahu, where the waves churned up a frothy seascape. As inviting as the water looked to the "snowbirds" who migrate to the islands during the winter, there were signs posted in the area that warned of the possibility of strong currents and rip tides. These hazardous conditions are common for Hawaii in the wintertime, so the beaches remain open for swimming and surfing for those willing to accept the risks.

I decided to get into the water with my sons, who were 15 and 14 at the time. My 14-year-old son is a native Hawaiian who I had adopted two years earlier. I assumed he was a strong swimmer since he was born and raised on the island. That false assumption was the catalyst that set off a chain of events I will never forget.

We'd been playing in chest-deep water for about 20 minutes when my older son yelled to me that the younger one was in trouble. I turned around in time to see that he'd been caught in an undercurrent and was now over his head and gasping for air. My older son and I had only taken a couple of strokes toward him before we, too, were caught in the riptide. I panicked, which was compounded by the fact that my foot brushed across what felt like hair near the bottom. I had now lost sight of my older son, and I thought it was his head that my foot had brushed against. As my younger son popped up and gasped for air again, he yelled, "Dad, help!" That was the exact moment when my panic took a back seat to action, as I called upon the overwater and open-water survival training I received over my years as an aviator.

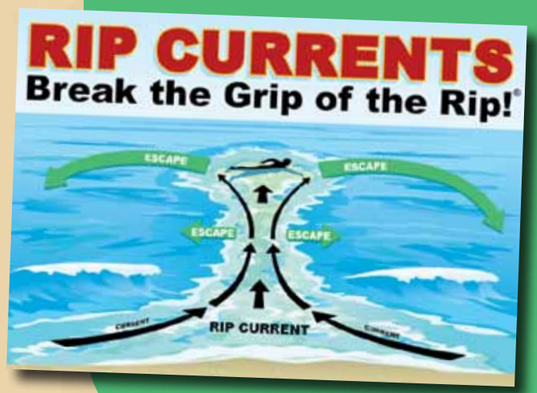
I thought briefly about my battalion overwater instructor leering down from the poolside, telling me to swim away from the wall, compose myself and breathe slower. Unfortunately, he never mentioned which son to choose to help when they're both drowning — and you're likely going down with them. I swam to my younger son and told him to keep swimming. I remember yelling, "Don't you dare quit on me!"

Fortunately, it worked. I maneuvered behind my son and began pushing him toward the shore. I would push him, submerge, resurface, breathe and then repeat the process. He kept swimming and I kept pushing and yelling. This unorthodox technique managed to attract the attention of a lifeguard on the shore. With much effort, we eventually reached shallower water and crawled out of the surf and onto the beach. It was at that moment the lifeguard arrived on the scene and without so much as getting his feet wet yelled, "Get out of the water!" I know what you're thinking and trust me; if I had retained enough strength, I would have said something equally inspiring back to him.

I ignored the lifeguard and turned to look for my other son. As I completed my scan, I spotted him walking out of the surf about 150 yards away. How he was able to make it out safely amazes me to this day. He had paid attention to a safety briefing one of our young lieutenants had given to the Soldiers and our Family members at the installation pool one day and employed what he had learned.

The lieutenant was closer to the target audience's age and was an avid surfer, which, in my book, made him the right choice for the water safety instructor. On an easel pad, he drew a depiction of a rip current and taught us how to get out of one by swimming parallel to the shore. Once clear of the current, you can swim ashore unhindered. That was exactly what my son had done.

As for what my foot had brushed against — seaweed, Jimmy Hoffa or Elvis — it was irrelevant at that point. That day was a victory for the home team.



Courtesy of the National Weather Sevice

FYI

Keep the following tips in mind before participating in any risky activity:

- **DO conduct your safety training with the mindset that the information you are conveying can save someone's life.**
- **DO include Family members whenever possible when the topics are relevant to activities they may participate in.**
- **DO research the area where you will be swimming and know the hazards you may encounter.**
- **DO NOT guess about your Family members', Soldiers' or friends' swimming abilities. Ensure you identify weak swimmers and avoid risky swimming situations until they have completed swim training.**
- **DO NOT ignore or marginalize warning signs when they are posted.**
- **DO NOT allow yourself to operate without a safety outlet when participating in risky activities.**

LOST

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.

AVIATION

CH-47F

CLASS A

- The aircraft was damaged when the crew experienced brownout conditions during landing. The aircraft came to rest on its side.

OH-58D(I)

CLASS C

- The aircraft experienced an overspeed and struck the ground before the crew could initiate recovery.

OH-58D(R)

CLASS C

- The aircraft experienced a power turbine (NP) spike of 124 RPM for four seconds during an engine run-up for a FADEC check.

TH-67A

CLASS B

- The main rotor blade contacted the ground as the aircraft initiated a left-hand roll during liftoff to a hover. The main rotor, tail boom and transmission separated from the aircraft.

UH-60L

CLASS A

- The aircraft sustained damage upon landing on steep terrain to recover survivors of a civilian aircraft accident.

C-12U

CLASS C

- The aircraft was struck by lightning and sustained damage to the right side, to include the engine.

UAS

MQ-1B

CLASS A

- The unmanned aircraft (UA) lost data link, and controllers were unable to initiate emergency recovery procedures. The UA rose to 3,500 feet and then descended, losing radar contact.

RQ-11

CLASS B

- The UA experienced RPM decay on final approach, followed by the loss of the engine and loss of link. The UA crashed and was deemed unrecoverable.

RQ-7B

CLASS B

- The UA experienced a drop in RPM at 1,200 feet above ground level (AGL), followed by engine failure. The chute deployed and the UA was recovered with damage.
- The UA landed hard on the airfield after it was unable to gain altitude following launch.

LOSSES AVIATION

Class A/Fatalities as of Nov. 3, 2010

ATTACK	0/0
RECON	0/0
UTILITY	0/0
CARGO	0/0
TRAINING	0/0
FIXED-WING	0/0
UAS	2/0
TOTAL	2/0

CLASS C

- The UA failed to gain altitude during launch and struck the ground. The recovery chute cover separated on impact. All components were recovered.

GROUND

AMV

CLASS A

- A local national was killed when he was pinned between a trailer and the light medium tactical vehicle he was ground guiding.

LOSSES GROUND

Class A/Fatalities as of Nov. 3, 2010

AMV	0/0
ACV	0/0
PERSONNEL INJURY (includes weapons-handling accidents)	4/3
FIRE/ EXPLOSIVE	0/0
PROPERTY DAMAGE	2/0
TOTAL	6/3

Personnel Injury

CLASS A

- A Soldier died after the boat he was operating struck a concrete bridge piling.
- A Soldier was killed in a friendly fire accident during combat operations.

DRIVING

POV

CLASS A

- A Soldier died when his pickup went off the road and struck a tree. The Soldier was not wearing his seat belt.
- A Soldier was killed when the pickup he was driving with his wife and children was struck by an oncoming vehicle that crossed the centerline.
- An unbelted Soldier died when he attempted to pass a tractor-trailer, lost control, went into the median and was ejected from his vehicle.
- While driving in foggy conditions, a Soldier crossed the centerline and collided head-on with another vehicle. The Soldier was evacuated for treatment and later died in the hospital.
- A Soldier died when he lost control of his vehicle in a 90-degree turn, went off the road, overturned and landed inverted in a ditch.
- A Soldier was killed when his vehicle rear-ended a slow-moving tractor-trailer as it was climbing a hill.

POM

CLASS A

- A Soldier was killed when his motorcycle crossed the centerline in a left-hand curve and collided with a tractor-trailer.
- A Soldier died after his motorcycle left the road and he was thrown 100 feet into a concrete culvert. The Soldier was not wearing his helmet.
- A Soldier died when an SUV pulled out of a parking lot and into his motorcycle's path.
- Speeding on a borrowed motorcycle, a Soldier died when he lost control, went off the road and was thrown into a fence post.
- A Soldier died when his motorcycle was struck head-on by a pickup driven by another Soldier.

LOSSES POV/POM

Class A/Fatalities as of Nov. 3, 2010

CAR	0/0
SUV/JEEP	0/0
TRUCK	1/1
MOTORCYCLE	6/6
PEDESTRIAN	0/0
OTHER* (*Includes vans and ATVs)	0/0
TOTAL	7/7

Fiscal Year 2010: 14 — Three Year Average: 12

- A Soldier was killed when he crashed his motorcycle while racing two automobiles. The Soldier was not wearing any personal protective equipment.

Pedestrian

CLASS A

- A Soldier died when he was struck by a vehicle while crossing a street.
- A Soldier was killed when he was struck by a car while walking down the middle of a street early in the morning.

AVOID THE HAZARDS

There is no question the Mine Resistant Ambush Protected (MRAP) family of vehicles provides increased protection for our Soldiers against improvised explosive devices, mines and small-arms fire. However, this increased level of protection does not come without some unique hazards and risks.

MRAP SAFETY AWARENESS

https://safety.army.mil/MRAP

ARMY STRONG.

U.S. ARMY COMBAT READINESS/SAFETY CENTER

ARMY SAFE IS ARMY STRONG

A BAND OF BROTHERS & SISTERS

Address the hazards associated with the operation of MRAPs. Implement effective composite risk management, comprehensive training, situational awareness and effective leadership to keep Soldiers safe and avoid loss and damage to equipment.

BE AWARE.

TAKE THE CHALLENGE,
LEARN THE LESSON.
Inspect surrounding area
Get weapon from case
Check - chamber empty?
Check - safety on?
Inspect friend
Hand-off to friend
FIREARMS
safety techniques
GIVE IT A SHOT!
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