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KNOWLEDGE

MARCH 2018

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KNOWLEDGE

OFFICIAL SAFETY MAGAZINE OF THE U.S. ARMY

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Mission Statement:
The Army Safety Team provides the Army with safety and risk management expertise to preserve readiness through the prevention of accidental loss of our Soldiers, Civilians, Families and vital resources.

THIS MONTH CONTENTS

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Spring Fever

GROUND DIVISION
Directorate of Assessments and Prevention
U.S. Army Combat Readiness Center
Fort Rucker, Alabama

The days are getting longer and warmer, the geese are heading north and the urge to throw your leg over the saddle and fire up your motorcycle is almost too much to bear. Before you bring that bike back to life, however, there are a few things you must do to get it and yourself ready for the riding season.

GROUND DIVISION
Directorate of Assessments and Prevention
U.S. Army Combat Readiness Center
Fort Rucker, Alabama

First, listen to your MOM. We're not talking about that sweet lady that cooks Sunday dinner and tells you to pack a sweater in 90-degree weather. Instead, we're referring to your motorcycle owner's manual. If you put your bike into hibernation the way your MOM told you to, just follow its instructions to get your scoot back on the road. You'll have your work cut out for you, though, if you just parked that baby in the corner of your garage or shed.

For those of you that followed the MOM, your prep time will be relatively short. Pull off the cover, fill up the gas tank, change the oil and check the tires for correct pressures and signs of dry rot. Remove any plugs you installed to keep the critters out of your exhaust, carburetor and air filter intake and then connect the battery following the MOM's procedures. If you didn't put your battery on a trickle charger, you might have problems getting the bike fired up. But between your MOM and T-CLOCS, your pre-ride inspection should cover everything.

Although your bike might be road ready now, you have to check your personal protective equipment to make sure it still fits and is in serviceable condition. Those extra pounds you put on over the holidays might mean a trip to the bike shop to buy a new jacket or leather chaps. This is also the time to make sure your bike is licensed and insured properly. Some of you might have deregistered your motorcycle during the winter to place it on your homeowners insurance. If so, you'll have to go through the registration and insurance processes again. Do it early so you can get on the road as soon as the weather breaks.

Next, you need to get yourself ready for the road. Your first trip shouldn't be from Fort Riley to

DID YOU KNOW?

While May is designated as Motorcycle Safety Awareness Month, there's no reason why we should limit our commitment to safety to just one month a year. The greatest rise in motorcycle purchases and use occurs between March and April. About 8.5 million motorcycles are registered in the United States, and roughly 33,000 of those are owned by Soldiers. Today's riders are Soldiers of all ranks and gender as well as your friends, relatives and neighbors. Remember, motorcyclists and motorists share the responsibility of watching for and giving each other room to maneuver.

Daytona for bike week. Ease back into shape and knock off the rust by practicing your riding skills. You might need a refresher course if it's been longer than a few months since your last ride, so contact your local safety office to schedule an experienced rider's course.

Lane position is important when you're on the road. Always position yourself in the lane of travel so you can be seen at the greatest distance possible. You'll also need to be more diligent with your scanning technique and pay particular attention to the road surface so you can spot any cracks or potholes that developed over the winter. Those of you stationed in colder climates know what I'm talking about — the pothole that bottoms out your suspension, rattles your eyeteeth and leaves you wondering if you bent your rims.

If your unit or installation has a Motorcycle Mentorship Program, call them up and join the group. The MMP is a great way to meet people that share the same passion for riding, and you also can enjoy group rides and activities. If your installation doesn't have an MMP, contact your safety office to check on starting one.

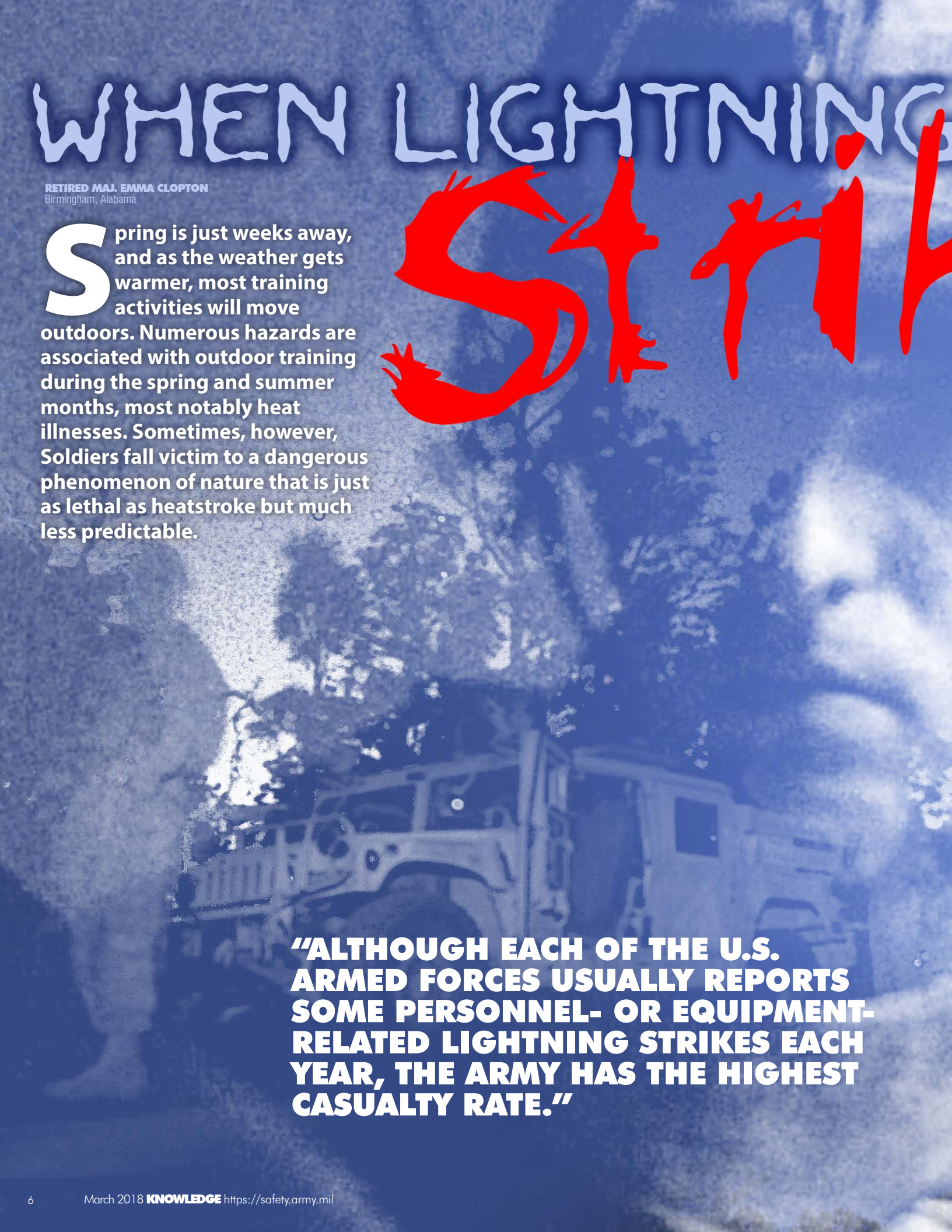
Local MMPs increase the general public's awareness of motorcyclists by putting groups of Army riders — whether they're active duty, retired or DOD civilians — together on the road. Therefore, it's important to remember some folks still think motorcyclists are over-the-edge people that don't abide by the norms of society. We all know this isn't true and applies to only a very small percentage of the riding population, but be aware that someone is always watching. Your conduct can help elevate riding to a respectable and acceptable form of recreation, so save the wheelies for a sanctioned event.

Whether you're a hardcore or fair-weather rider, machine, mind and body have to be firing on all cylinders to ensure a safe and enjoyable riding season. Warm weather will come and go, so enjoy it while it's here. Live to ride and ride safe! ■

WHEN LIGHTNING STRIKES

RETIRED MAJ. EMMA CLOPTON
Birmingham, Alabama

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 illnesses. Sometimes, however, Soldiers fall victim to a dangerous phenomenon of nature that is just as lethal as heatstroke but much less predictable.



"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."

According to the National Weather Service, an average of 270 people are stuck by lightning annually in the United States. More than 30 of those strike victims die, and many others are seriously injured. July has proven to be the deadliest month for lightning strikes, with an average of 10 fatalities per year. 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 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. Infantry and artillery Soldiers are at higher risk than other specialties because of the outdoor nature of their training and operations.

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, California, three Soldiers were struck by lightning on a hilltop. Several years before that incident, eight Soldiers were injured at Camp Grayling, Michigan, when lightning struck some trees 50 feet away. The Soldiers had sought shelter under a tarp when the thunderstorm appeared and were hit when the lightning current traveled at ground level to their location.

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 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. Lightning injuries can occur very early or 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 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.■

Do You See What "Eye" See?

DAVE MUEHLEISEN
Fort Rucker, Alabama

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

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

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

MARCH IS RECOGNIZED AS WORKPLACE EYE WELLNESS MONTH IN AN EFFORT TO EDUCATE WORKERS ON HOW TO PROTECT THEIR VISION WHILE ON THE JOB.

In our motor parks and maintenance bays, eye injuries predominantly occur during battery maintenance, welding or grinding operations, or from metal fragments created by activities such as hammering or using bolt cutters. In more than one-third of the reported eye injuries, the individual was either not wearing the required protective eyewear or was wearing it improperly. Hazards from dust and debris, flying objects or particles that can strike you in the face or eyes can be easily defended by using the proper safety glasses and goggles.

Various activities require different types of glasses or

EVEN IF YOU USE A FACE SHIELD IN OPERATIONS SUCH AS GRINDING, YOU ALSO STILL NEED TO WEAR SAFETY GLASSES UNDER THE SHIELD.

DID YOU KNOW?

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

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

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

We Had Legal Weather

CHIEF WARRANT OFFICER 3 WILLIAM H. MURRAY
12th Aviation Battalion
Davison Army Airfield
Fort Belvoir, Virginia

It was May 16, 2006 — a day in Iraq I'll never forget. I was the pilot in command in the lead aircraft on the downed aircraft recovery team. The day started out as a normal standby day. We pre-flighted the aircraft, and afterward I conducted a thorough crew brief.

Following my brief, I returned to my room to catch a movie. A few hours later, I got a knock on my door and was told we had a mission and to report to the tactical operation center. My pilot for the mission was my roommate, so I didn't have to go far to instruct him to find the crew chiefs and meet me at the TOC.

I met the PC of the second aircraft at the TOC and reported to the battle captain to discuss the details of our mission. He told us an aircraft was down in Q-West due to tail rotor problems. After our PIs entered the TOC, we got our S-2 brief, maps and route of flight. We then sent our PIs to assemble the DART team and had them meet us at the aircraft. Both flight crews checked the weather and exchanged information for the flight to Q-West.

At the aircraft, I had another crew brief. I updated my crew and the DART team on mission details. We went over the weather, frequencies and route of flight. We then strapped in and took off as a flight of two. I was the lead aircraft to Q-West, and the flight went off without any issues.

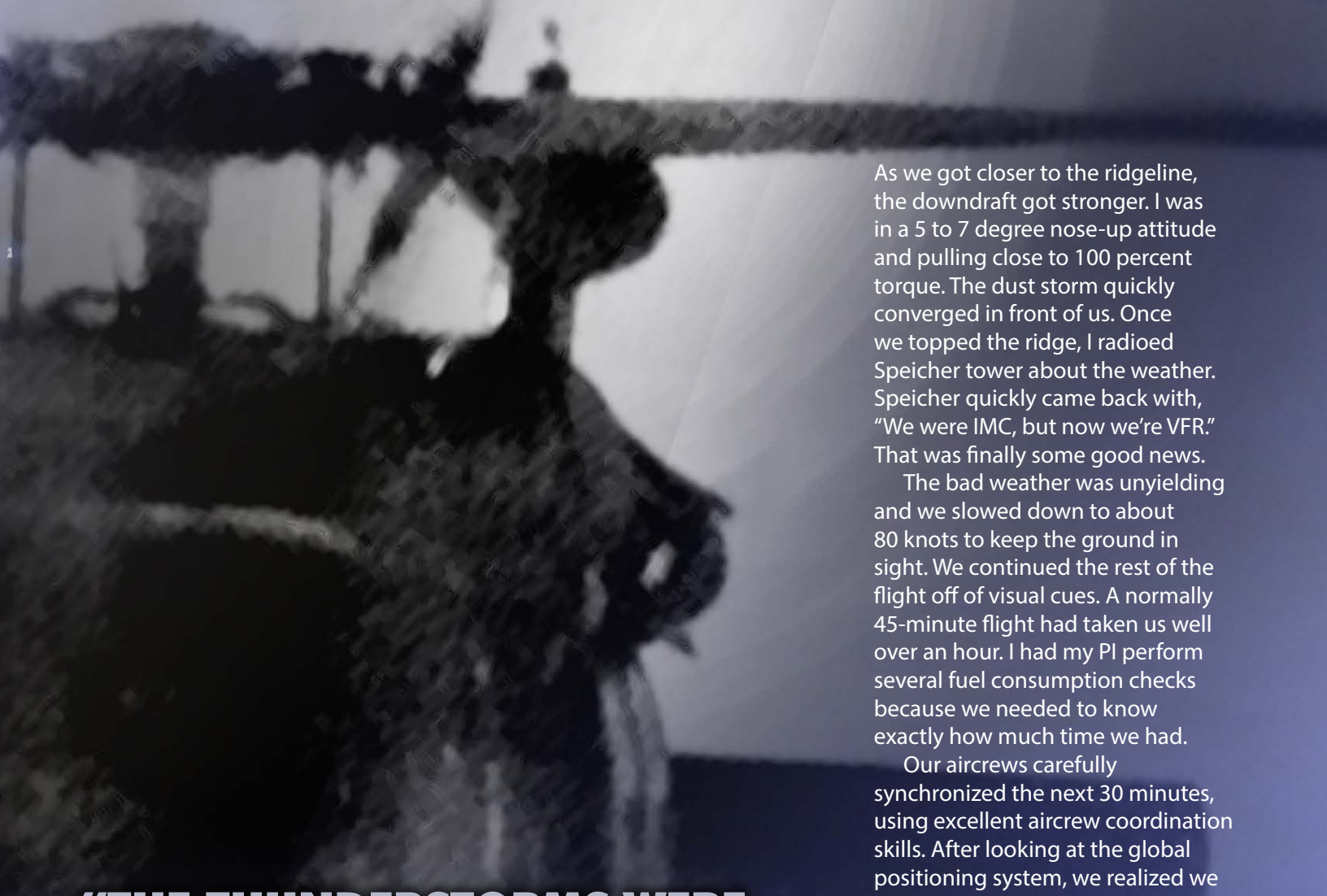
After landing at Q-West, the maintenance test pilot examined the broken aircraft. The crew with the broken aircraft swapped aircraft with Chalk 2 of the flight and took off to continue their mission. The MTP diagnosed the problem and quickly fixed the aircraft. He then took a test flight around the traffic pattern. The test flight was successful and we continued as briefed.

In the meantime, my PI and I walked over to operations to check on weather and get approval from our TOC for the flight back. The weather report showed some thunderstorms to the south, and our battalion commander changed up the crews.

My crew consisted of a senior PI with more than 200 hours in Iraq; I had more than 600 hours in country. Chalk 2 consisted of a new lieutenant and an MTP who did not have a lot of time outside the traffic pattern of Forward Operating Base Speicher. It was a good crew change due to the situation we were about to face. The battalion commander directed I take Chalk 2 to keep an eye on the tail rotor of Chalk 1. We conducted another crew brief because of the crew change and, based on my having the most experience, I took the DART team and passengers.

The thunderstorms were approaching Q-West from the south quicker than expected, so we took off without delay. After we cleared Q-West airspace, the thunderstorm was over Q-West. We responded to Q-West tower and cleared their airspace. We soon noticed some thunderstorms developing on our route of flight. After having a brief discussion with Chalk 1, we agreed I would take the lead.

I passed Chalk 1 off the right side since I was on the controls in the left seat. We changed our route and crossed the Tigris River. The reason for the flight change was to give us a recovery base should the weather toward FOB Speicher go below visual flight rules minimums. After crossing one of the ridges, we noticed the weather toward Kirkuk had deteriorated, so we weren't able to recover there as planned. We were being funneled in one direction and that was toward Speicher. After many talks with Chalk 2, we knew we had only one way to go.



"THE THUNDERSTORMS WERE APPROACHING Q-WEST FROM THE SOUTH QUICKER THAN EXPECTED, SO WE TOOK OFF WITHOUT DELAY."

We turned our aircraft toward Speicher. We were still on the north side of the Tigris, so we had one more ridge to cross. Just when I thought the weather couldn't get any worse, dust storms appeared on our right and left. I saw our path narrowing. This was unbelievable! It was not a good situation.

I asked my crew chiefs if I was clear left. My left crew chief responded that I was not. I then asked if I was clear right. My right crew chief said I was not clear right. I was a little confused and asked them to clarify why I could not turn left or right. That's when they informed me the dust storms had merged behind us.

I radioed Chalk 2 and asked if they had their instrument approach card to Speicher. They came back with a "yes." I had hoped not to use it; nevertheless, we conducted the inadvertent instrument meteorological conditions brief over the radio. Both chalks knew the corresponding altitude and frequencies if the weather worsened.

Thinking ahead, I knew the air would be a concern when crossing over the other ridgeline. As we got closer to the ridgeline, I started to climb. I didn't want to start too early because I didn't want to go IIMC. As we got closer to the ridgeline, the downdraft got stronger. I was in a 5 to 7 degree nose-up attitude and pulling close to 100 percent torque. The dust storm quickly converged in front of us. Once we topped the ridge, I radioed Speicher tower about the weather. Speicher quickly came back with, "We were IMC, but now we're VFR." That was finally some good news.

The bad weather was unyielding and we slowed down to about 80 knots to keep the ground in sight. We continued the rest of the flight off of visual cues. A normally 45-minute flight had taken us well over an hour. I had my PI perform several fuel consumption checks because we needed to know exactly how much time we had.

Our aircrews carefully synchronized the next 30 minutes, using excellent aircrew coordination skills. After looking at the global positioning system, we realized we were approaching the 10-nautical-mile ring of Speicher. I radioed Speicher tower, reported my location and requested to land. We landed at our parking spot and my passengers quickly got out of the aircraft and kissed the ground. I heard a lot of thank-yous.

All of our training came to reality in one flight. The weather never got any better that day and I was doing all I could to keep my UH-60L in the air. We had lightning strikes all around us and we were tossed around like a rock in a soda can.

The crew coordination in my aircraft and with Chalk 2 was amazing and the key to completing the mission without incident. Both crews relied on their training. That training kept a bad situation from getting worse.

The moral of the story is keep your cool and rely on your training. You never know when it might one day save your life. ■

MY NEAR-DEATH

STAFF SGT. ANDREA JOHNSON

Never have I experienced anything as frightening as being a heat casualty. I will always remember the way my body felt and the emotions that were running through my mind when I succumbed to heat exhaustion and dehydration. Paralyzed from my waist down, unable to move my arms below my elbows and eventually losing control of my bodily functions, my life flashed before my eyes. I thought about how selfish I had been to leave my children and spouse again for something I wanted to do, knowing they would rather I be at home. To this day, I cannot help but replay the entire near-death scenario in my head.

I was attending a course I had anticipated for months — doing everything I could to ensure I met all of the requirements necessary to prevent being sent home. Unbeknownst to me, a five-mile ruck march would take place within the first 48 hours of boots on ground. I know what you are thinking — "It's only 5 miles." However, a ruck march in full battle rattle with a weapon and 45 pounds of gear is no easy feat, especially if you're physically unprepared for the extra weight or not acclimated to the heat.

Maryland was experiencing a heatwave that summer with record high temperatures. In an effort to prevent heat casualties, the ruck march was scheduled for the evening, about 3.5 hours after dinner chow. My plan was to carry a piece of fruit with me just in case my body felt like it needed the extra fuel. Unfortunately, schoolhouse policy prohibited food outside of the dining facility.

Since my specialty is healthcare and safety, I mentioned to a cadre member the dangers of conducting the ruck march without providing the necessary fuel our bodies needed. He denied my request and said, "You will be fine. It's only five miles and our pace is about 19 minutes a mile." I knew at that moment I was in trouble because I was already exhausted from

DID YOU KNOW?

The U.S. Army Public Health Center provides heat illness information, along with numerous posters and other products, on its website at https://phc.amedd.army.mil/topics/discond/hipss/Pages/Heat-Related-Illness-Prevention.aspx.

H EXPERIENCE

FYI

Heat casualties represent a serious threat to the medical readiness and fitness of military personnel, both in garrison and during deployments. Each year, the Army records hundreds of cases of heat-related illnesses, including some that take the lives of Soldiers. These injuries often result from individual physical training, PT testing, training exercises and other activities, including those recreational in nature. Leaders must be held accountable for their Soldiers' training and actions. They should incorporate risk management into every training event and account for the worst-case scenario of Soldiers not drinking water. Some trainees don't know when to refill their canteens, some are unable to find water points during land navigation events and some are forced to either get water or "gut it out" to the next event. All of these issues happened in recent years. In the units involved, the needed policies and command involvement were nonexistent. This needs to improve. Additionally, all cases of heat illnesses must be reported to the U.S. Army Combat Readiness Center, as well as to the medical community. The more we know about these heat injuries, the better we can establish preventive guidance and training. As much as we know, and with all the information about heat illness prevention available to all Soldiers, we should be successful at reducing mishaps during the upcoming hot weather season. Whether at work or play in the heat, it's important to reduce the risk of heat stress as much as possible and remain vigilant for signs that all is not well.

being run in to the dirt since arriving at the schoolhouse.

The ruck march seemed to be going smoothly for the first three miles. I noticed our pace was a lot faster than was stated, but I felt great. About mile four, however, I started experiencing tingling and numbness in my feet. I pushed on and did everything I could to increase circulation to my lower extremities. Despite my efforts, the numbing and tingling sensations crept up my legs, to my knees and then my thighs. Eventually, I could not feel anything below my waist and fell backward.

I am not sure how much time passed from the moment I hit the pavement until I was given the proper medical attention. By the time the medic gave me an IV and the fluids started flowing, my arms and hands were paralyzed and my blood pressure had bottomed out. I actually heard the medic say, "We're losing her. We may want to send her to the hospital." At that moment, I decided I was not giving up without a fight. Fortunately, I was able to pull through.

I occasionally think about what happened that day, attempting to identify my failures as well as those of the Regional Training Institute that was responsible for preparing me before I attended the school. I know the outcome would have been different had my leadership taken a proactive approach to identifying risks associated with the environment and the schoolhouse expectations to pass the course. Unfortunately, I became the victim of the ever changing leadership and a lack of planning and communication between the RTI and the schoolhouse. The new leadership at the RTI took a reactive approach and implemented controls based on the failures of their predecessors.

My hope is no Soldier has to experience the anguish of becoming a heat casualty and leaders will identify all possible hazards weeks before an event. This incident has completely changed my outlook on life and amplifies the importance of risk management in keeping Soldiers safe. ■

Have you ever fought with your kids about wearing seat belts? Have you been tempted to give up out of frustration? A few years ago on a rain-slicked road, we learned this is a battle you can't afford to lose. Here's our story.

A Battle Worth Fighting

CHIEF WARRANT OFFICER 2 JASON R. WILLIAMS
B Company, 3-227th Assault Helicopter Battalion
Fort Hood, Texas

I'd been deployed about three weeks, but hadn't talked to my wife during the past few days. When I finally got in touch with her, I'll never forget the sound of her voice. I knew something was wrong when she said, "Hey, honey, let me just say we are all OK." Hearing her say that, however, didn't make the message any easier as she explained what happened.

My wife and kids were on their way from Fort Hood, Texas, to Austin for my son's soccer tournament. My wife was driving and my 10- and 2-year-old sons were in the backseat. During their drive, they encountered a bad thunderstorm. A few minutes into the storm, they hit a flooded section of road and my wife lost control of the SUV, which slid onto the grass on the right shoulder. She was able to regain control, slow down and attempt to ease back onto the road. However, the right-rear tire hit the road edge and blew out, sending the SUV sliding sideways and overturning three or four times before it came to rest upside down in the grass.

My wife didn't realize she was hurt and checked on the boys, who appeared to be OK. Our 10-year-old had wanted to ride in the front seat, but, fortunately, my wife insisted he ride in the backseat. That proved to be a good decision, as the passenger-side mirror had

pivoted inward, smashing the window and gashing the front passenger seat. Had our son been there, he might have been decapitated.

She climbed out of her window and tried to open the back doors, but they were stuck. By now, people were already coming over to assist. My oldest had undone his seat belt and was brushing glass out of his brother's hair. He tried, unsuccessfully, to get him out of his safety seat and wouldn't leave the car without him. While all this was going on, my wife was in and out of consciousness. Her left arm was seriously injured and she was bleeding profusely from her head. She remembered asking to see our boys and a women telling her that they were doing fine. She'd been assuming the worst, but the fact was, the woman didn't want the kids to see their mother in that condition.

My wife went on to explain that the kids had some minor injuries from the stroller and backpacks flying around inside the vehicle. My oldest son needed some dental work and my youngest had a large lump on his head. Considering that everything else in the SUV was spread across the highway, I was just happy to hear they were all alive.

As I listened to the story, I couldn't help but wonder if I had done something to contribute to this accident. I asked myself, "Were the wipers OK? How old were the tires? When was the last time I checked the tire pressure?" I'd looked over the car shortly before deploying, but was concerned I might have missed something. For a long time I thought about how I'd have felt had any of them been killed. Those uneasy thoughts hung around in my mind, but I eventually accepted the fact that there was nothing I could do to change the past. Instead, I decided I would focus on how to do better in the future.

My wife and son had some difficulty dealing with the aftermath of the accident. Riding in a car during a bad storm was a little difficult for them at first, but they eventually got better. Looking back on it, we view the entire incident as a learning experience for us all. Obviously, we no longer have a seat belt issue. In fact, I've heard my son remind his friends to fasten their seat belts. I also explained to him that his concern for his brother in an emergency is a quality that many don't posses, especially other children his age. After seeing the SUV's condition, my wife was amazed they survived and felt she'd been given a new lease on life.

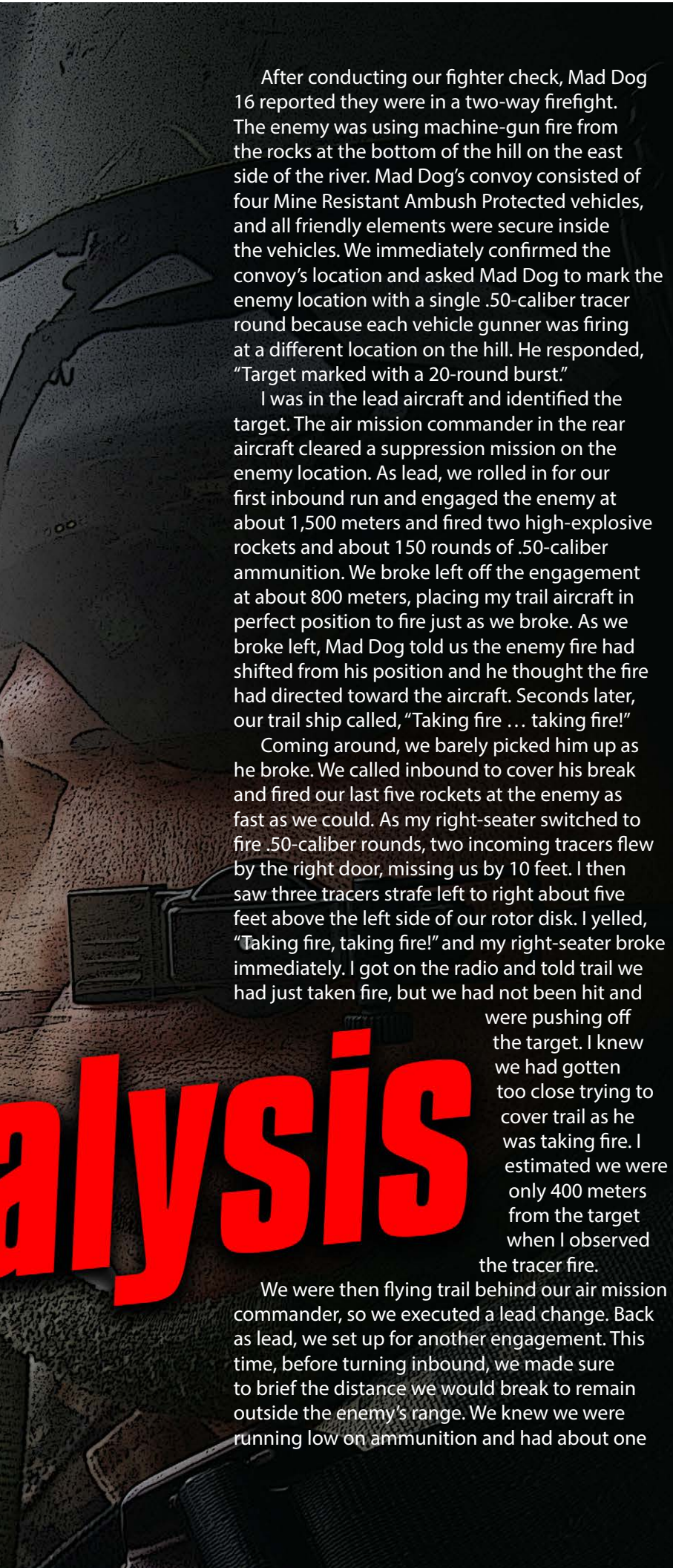
It was humbling to come home from combat to hear the details of my family's near-death experience. It is a perfect example of how the most obvious hazards — such as those I faced in combat — are not always the ones that hurt or kill people. Since then, I've worked to make myself more aware of the potential hazards to my family. I've also tried to be better about explaining how and why I take certain safety precautions so my family will be even better prepared the next time I'm gone. When I deploy, I'm not just committed to protecting my comrades in combat; I'm just as committed to protecting my family at home. ■

"HE TRIED, UNSUCCESSFULLY, TO GET HIM OUT OF HIS SAFETY SEAT AND WOULDN'T LEAVE THE CAR WITHOUT HIM."

Risk and Reward Ana

My Scout Weapons Team was in Afghanistan supporting a convoy delivering supplies from north of Asadabad to Forward Operating Base Bostick in the Konar River valley. We'd finished refueling in Asadabad and were en route back to the convoy, which was about halfway to FOB Bostick, when Mad Dog 16 called for immediate air support for troops in contact. Mad Dog 16 was a security element posted along a road that was a known enemy hot spot. Their location was on the west side of the Konar River, which runs down the middle of the valley.

CHIEF WARRANT OFFICER 2 ZACH MUNAR
C Troop, 6th Squadron, 6th Cavalry Regiment
Fort Drum, New York



alysis

After conducting our fighter check, Mad Dog 16 reported they were in a two-way firefight. The enemy was using machine-gun fire from the rocks at the bottom of the hill on the east side of the river. Mad Dog's convoy consisted of four Mine Resistant Ambush Protected vehicles, and all friendly elements were secure inside the vehicles. We immediately confirmed the convoy's location and asked Mad Dog to mark the enemy location with a single .50-caliber tracer round because each vehicle gunner was firing at a different location on the hill. He responded, "Target marked with a 20-round burst."

I was in the lead aircraft and identified the target. The air mission commander in the rear aircraft cleared a suppression mission on the enemy location. As lead, we rolled in for our first inbound run and engaged the enemy at about 1,500 meters and fired two high-explosive rockets and about 150 rounds of .50-caliber ammunition. We broke left off the engagement at about 800 meters, placing my trail aircraft in perfect position to fire just as we broke. As we broke left, Mad Dog told us the enemy fire had shifted from his position and he thought the fire had directed toward the aircraft. Seconds later, our trail ship called, "Taking fire … taking fire!"

Coming around, we barely picked him up as he broke. We called inbound to cover his break and fired our last five rockets at the enemy as fast as we could. As my right-seater switched to fire .50-caliber rounds, two incoming tracers flew by the right door, missing us by 10 feet. I then saw three tracers strafe left to right about five feet above the left side of our rotor disk. I yelled, "Taking fire, taking fire!" and my right-seater broke immediately. I got on the radio and told trail we had just taken fire, but we had not been hit and were pushing off the target. I knew we had gotten too close trying to cover trail as he was taking fire. I estimated we were only 400 meters from the target when I observed the tracer fire.

We were then flying trail behind our air mission commander, so we executed a lead change. Back as lead, we set up for another engagement. This time, before turning inbound, we made sure to brief the distance we would break to remain outside the enemy's range. We knew we were running low on ammunition and had about one engagement left. Mad Dog 16 reported he was still taking fire from the same location, but the volume of fire was significantly less. I told him we had only enough ammunition for one more engagement, and he requested we go "Winchester" before going to the FARP. We set up for our final engagement and briefed that we would engage at 1,800 meters and break at 1,000 meters. Both lead and trail conducted the engagement without observing fire from the enemy. Mad Dog 16 reported all enemy fire had stopped. We then broke station for refuel at Asadabad.

While at the FARP, we looked for battle damage and, thankfully, found none. After refueling and rearming, we departed north to check on Mad Dog again. He reported he had not taken any more fire since we left. We continued the mission with the convoy to the north and then departed.

Lessons learned

No matter what situation you find yourself in, you must always conduct an analysis of risk versus reward. Mad Dog 16 was in danger, but did we put the aircraft in more danger than necessary? What was the convoy's risk level when under fire from 800 meters with all its troops mounted in their MRAPs? These type questions must be addressed before you choose a specific course of action. Preferably, you have already discussed possible situations like this and others in pilot, mission and team briefs before you pull pitch. Risk and reward analysis should be a deliberate current mission focus of every brief. Granted, every situation is different and may present new risks, but I believe a foundation in risk analysis will enable the individual to make better on-the-spot decisions. ■

FYI

Effective communication and interaction between crewmembers was vital in the success of this mission. Every crewmember in each aircraft had a critical role to fulfill. It doesn't matter if the mission is in combat or training; a flight crew must always communicate with each other. Pre-mission and in-flight planning during multiship operations is now the standard in combat, and leaders must get involved in the planning and execution of all missions.

Don't Flip Your Lid

BOBBY J. PIIRAINEN

Working at a treatment storage disposal facility might not be the most glamorous job, but what goes on inside is pretty important business. Where do you think all that hazardous waste we create ends up? What the job lacks in excitement, though, is more than made up by the potential for danger, as I found out firsthand.

I'd just arrived at my job as a hazardous waste handler and was on my way to change into my work clothes. As I approached the changing room, I saw a drum we'd picked up the previous day sitting on a pallet. What caught my eye was the drum had started to "football," or bulge, at both ends.

Being a first responder for the base, I immediately recognized this as a potential problem and decided to investigate. One of the first things you look or listen for when a drum takes this shape is pinging. If the drum pings, it means the metal is starting to fatigue and might burst. If that happens, you could be facing anything from a normal spill to a full-blown disaster, depending on the material contained inside the drum.

There wasn't any pinging, so I moved on to the second warning sign, which is whether the drum is hot. If it's hot, a chemical reaction probably is happening inside the drum, which can lead to a real problem. I carefully walked up to the drum to check for heat but felt none.

Once I determined the drum was not going to blow, I pulled out the paperwork to see what it contained. The only substances listed were waste oil and paint. I figured the bulging

probably was due to someone overfilling the drum and not leaving a vapor space. It was a warm morning, so it made sense that this was the problem. I decided there was nothing more to do than let the extra air out, so I put the paperwork back on the drum and continued to the changing room.

It took me less than five minutes to change clothes, but as I finished, I started thinking about that drum again. There was something about it that gave me an uneasy feeling and I wanted to investigate more. I left the changing room and walked back toward the drum. I was about 30 feet from it when the top blew.

You must understand this container was a bung-type drum, and its top was welded on tightly. The only way to put material or waste inside this type of drum is to unscrew one of the two bung tops. The force of the blast sent the drum's top about 50 feet in the air. I could feel the force of the explosion from where I was standing.

When it finally dawned on me what had just happened, I decided to leave work a little early to calm my nerves. What would have happened to me had that drum exploded while I was standing over it? The outcome surely would have been bad. Since that day, I've made it a point to tell my story whenever I get the chance. Hopefully my experience will keep someone from making the same mistake or maybe even save their life. ■

FYI

The Occupational Safety and Health Administration offers the following advice for handling bulging drums:

- **Pressurized drums are extremely hazardous. Wherever possible, do not move drums that may be under internal pressure, as evidenced by bulging or swelling.**

- **If a pressurized drum has to be moved, whenever possible, handle the drum with a grappler unit constructed for explosive containment. Either move the bulged drum only as far as necessary to allow seating on firm ground, or carefully overpack the drum. Exercise extreme caution when working with or adjacent to potentially pressurized drums.**

For more information, visit OSHA's website at https://www.osha.gov/Publications/complinks/OSHG-HazWaste/11-12.pdf or the U.S. Army Combat Readiness Center's hazardous materials webpage at https://safety.army.mil/ON-DUTY/Workplace/HazardousMaterials(HAZMAT).aspx.

JOSEPH FENTRESS
U.S. Army Corps of Engineers
Kansas City, Missouri

Some motorcyclists only go through safety training to get their license and drive on post. Once off the installation, however, they seem to forget the rules and fail to practice the skills that might save their lives. When riding a motorcycle, even the smallest mistakes can be life threatening, so risk management and situational awareness are crucial.

license to fai

JOSEPH FENTRESS
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It was the first warm weekend of spring during my senior year in high school. The northern Virginia winter was bad that year, and the heavy snows we'd been getting had only recently disappeared. With winter behind us, my best friend, Seth, was eager to get his Kawasaki Ninja sport bike on the road again.

The year before, Seth taught me how to ride in the school parking lot, but we only covered the basics — how to shift, what brakes are where and how to use the blinker. I had only ridden his bike on the road once, and I remember being both nervous and excited at the same time. I thought that motorcycle was the coolest thing in the world and wanted to learn how to really ride.

As Seth and I were making plans for the day, my brother called and told me he had just bought a new Honda scooter. He'd wanted a motorcycle but did not know how to ride one. The scooter was more comfortable for him because he didn't need to shift gears, it was street legal and could get up to 55 mph. Seth suggested my brother stop by so we could all go for a ride.

Within an hour, we were all together on a cul-de-sac near another friend's house. My brother and Seth took off first, and I could hear them laughing as they drove down the street. About 30 minutes later, they returned so I could have a turn. I was nervous, but being 17 and having my peers around, I didn't take the time to consider the risks involved.

I hopped on the motorcycle, and my brother and I took off down the street. About 100 yards down the road, there was a sharp turn and, before I knew it, I was sliding on the ground. Even though I was only going about 30 mph, I slid for what seemed like 20 yards, barely missing a mailbox. The Bermuda shorts, tennis shoes with no socks and T-shirt I was wearing didn't do much to protect me from the road rash that took off most of the skin on my elbows, forearms, hands and knees. Oddly enough, the helmet — the only personal protective equipment I was wearing — never hit the ground.

"I HAD TO SPEND NEARLY A MONTH IN WALTER REED ARMY MEDICAL CENTER UNDERGOING SKIN GRAFTS AND PREVENTIVE INFECTION PROCEDURES DUE TO THE SCRAPED BONE."

With the adrenaline pumping, I immediately hopped to my feet and picked up the Kawasaki like it was a Huffy. I then rolled it back to the cul-de-sac and apologized to Seth profusely for crashing his prized possession. Like a good friend, he was more concerned about my condition. I told them I felt fine and didn't need to go to the ER. He then pointed out the thick stream of blood running down the driveway from my right shoe. I decided I might need to get that checked out.

The injury was extensive. The brake pedal had scooped a chunk of flesh out of my leg and scraped the bone. Because it wasn't a cut, the doctors couldn't sew it together. I had to spend nearly a month in Walter Reed Army Medical Center undergoing skin grafts and preventive infection procedures due to the scraped bone.

There are several lessons I learned from my accident — the first being proper training is an absolute must. Had I taken the time to get trained and licensed, I likely could have avoided this accident. Without proper training, you only have a license to fail. Proper PPE is also important and probably would have kept me out of the hospital. A long-sleeved shirt or jacket, pants and gloves would have helped prevent the road rash, and heavy leather boots would have helped me avoid the most painful injury I have suffered in my life. Finally, I should have considered the environment I was riding in before I got on the bike. Because the snows had only recently ended, there was still an abundance of sand and salt on the street. When I drove through that sand in the curve, it was a millisecond ride to the asphalt. That's a ride I hope to never take again. ■

The Straight

MATTHEW MENDENHALL
1st Battalion, 212th Aviation Regiment
Fort Rucker, Alabama

When you're driving an Army motor vehicle, whether in a tactical convoy or off-road in the field, you need to know about any dangers along the route. Perhaps there are critical areas where driving off the road is not an option because of dangerous terrain. Maybe some areas are better than others for a comfort stop. If you've driven an Army vehicle, you probably can imagine any number of tactical scenarios where you'd need to drive off the road in a hurry.

The problem is that some Soldiers arrive at their units with little or no driving experience. Imagine a Soldier driving Chalk 3 in a 10-vehicle convoy when the dirt road turns into a muddy, slippery mess. Do you really think that Soldier will be thinking far enough ahead to plan his actions should a drive-off be necessary? I'll give you a case in point.

I was a 19-year-old infantryman taking part in a field exercise with my unit. The exercise was nothing out of the ordinary. In fact, it was very typical because of the rain and mud. I was driving Chalk 2 and had three years of driving

"I KNEW THE DITCHES WERE THERE, BUT I WAS ONLY PAYING ATTENTION TO WHAT WAS GOING ON RIGHT IN FRONT OF ME."

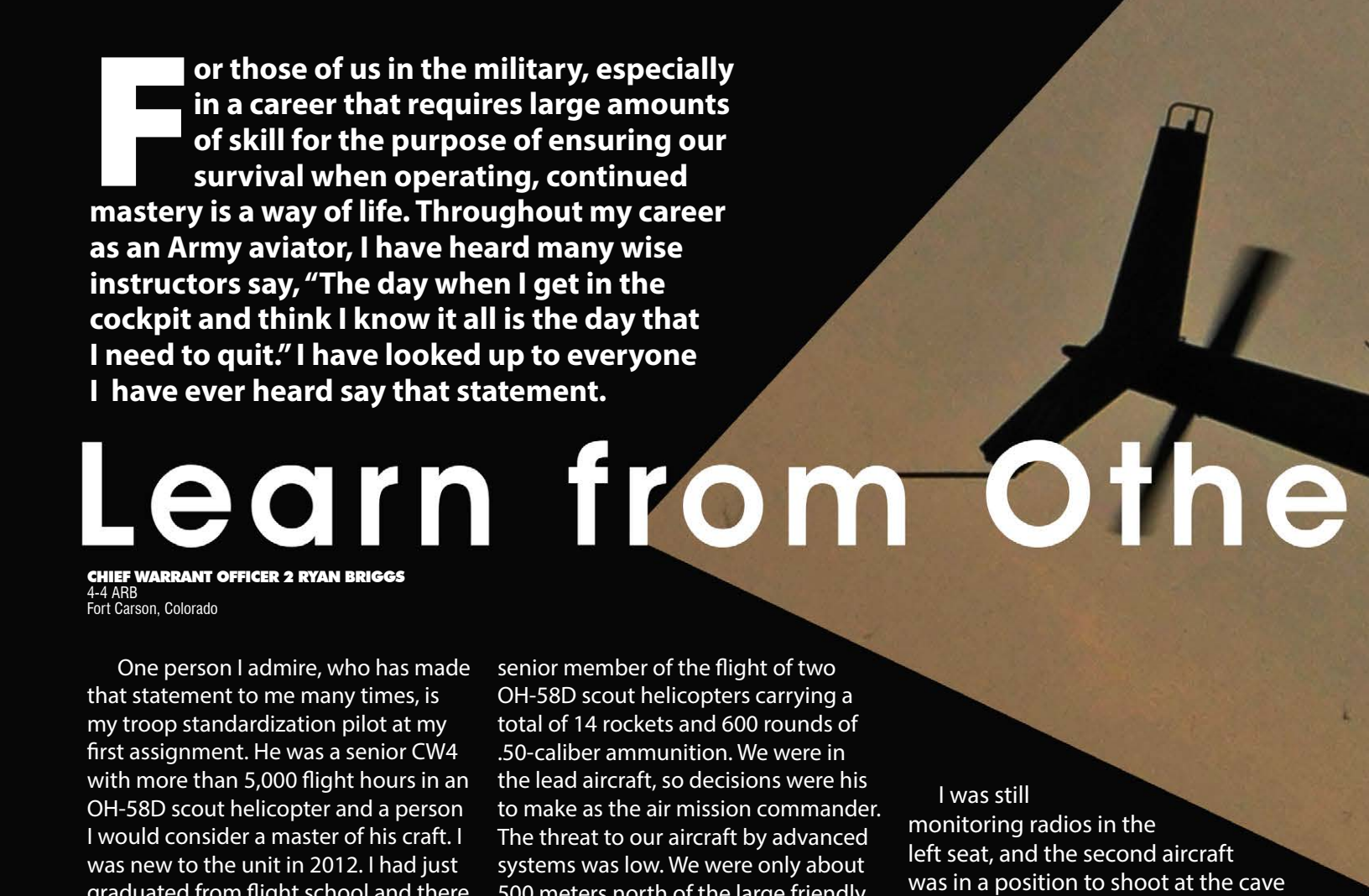
experience. However, this was the first time I'd driven outside the unit training area. The rain was coming down hard, the rutted dirt road was just wide enough to fit through, and there were large erosion ditches on both sides.

I knew the ditches were there, but I was only paying attention to what was going on right in front of me. I was about five truck lengths behind the lead truck when it suddenly swerved off the road and then back on again. Fortunately, the driver did this on a section that didn't have erosion ditches. Just then I noticed a turtle in the road in front of me. I started to swerve off the road to miss it, but my truck commander grabbed the wheel and kept it from turning. I'd thought I could swerve just as the lead truck had. In that instant, I didn't think about the ditches on either side of me. I just wanted to miss the turtle. Fortunately, it was a lucky day for all involved. I didn't drive into a ditch and the turtle made it across the road without being squashed.

The point is drivers need to be briefed on drive-off problems or limitations before they get on the road. Some roads run along 1,000-foot-tall cliffs, while others might border minefields. To keep drivers on the straight and narrow, make sure you emphasize the "terrain" part of your mission, enemy, terrain, troops and time available (METT-T) briefing. And do it before your drivers head out on a mission! ■

t and Narrow

For those of us in the military, especially in a career that requires large amounts of skill for the purpose of ensuring our survival when operating, continued mastery is a way of life. Throughout my career as an Army aviator, I have heard many wise instructors say, "The day when I get in the cockpit and think I know it all is the day that I need to quit." I have looked up to everyone I have ever heard say that statement.



Learn from Othe

CHIEF WARRANT OFFICER 2 RYAN BRIGGS
4-4 ARB
Fort Carson, Colorado

One person I admire, who has made that statement to me many times, is my troop standardization pilot at my first assignment. He was a senior CW4 with more than 5,000 flight hours in an OH-58D scout helicopter and a person I would consider a master of his craft. I was new to the unit in 2012. I had just graduated from flight school and there was still plenty of war to be fought.

Fresh out of training I was deployed and met my unit for the first time when I stepped off the plane in Afghanistan. After several weeks of training flights, I had proven my competence enough to allow me to perform combat operations. It was the middle of the day during the summer. I was in the left seat, monitoring radios and working aircraft systems; my SP was on the flight controls in the right seat. We were monitoring radio calls of enemy activity originating from the ridge, just to the north of a major Army forward operating base. The reports indicated the enemy forces that had been firing mortars and rockets at the base had hidden inside a cave and knew Americans were looking for them. They were scared.

As we circled the mountainside and looked for the area that fit the description of the enemy hiding point, we discussed some of the options we had available to us. The SP was the senior member of the flight of two OH-58D scout helicopters carrying a total of 14 rockets and 600 rounds of .50-caliber ammunition. We were in the lead aircraft, so decisions were his to make as the air mission commander. The threat to our aircraft by advanced systems was low. We were only about 500 meters north of the large friendly base, so he opted to utilize our flare countermeasures as a way to give a show of presence and develop the situation. We found the cave that fit the description and made low passes, using our flares at the mouth.

We began to receive intel that indicated we were in the right spot on the second flyby, so we wanted to attempt to make the enemy react. The plan was to ensure they knew we had found them by flying as close as possible to the cave and dropping a flare into the opening. Imagine if you can a ridgeline, about 6,000 feet in elevation and a few kilometers long with a cave about 10 feet below the top of ridge, about one-third of the way from the right edge of the ridgeline. Like I mentioned before, we had made two passes at the cave already, popping flares in front of it, with no issues. On the third pass, the SP was determined to place a flare into the mouth of the cave and began the maneuver just like the last attempt.

I was still monitoring radios in the left seat, and the second aircraft was in a position to shoot at the cave if the enemy came out to engage us. The next thing I heard was the SP next to me yell, "Oh, sh*t!" I felt the aircraft jerk to the left and heard the overtorque warning in the headset, "Bong, bong, bong." I saw him pull up on the collective control to increase our altitude. As he pulled it to its max upward, the tail of the aircraft whipped right as fast as it could. I saw plenty of red on the gauges and reached for the dash and ceiling to stabilize myself in the seat. I then saw the ground coming at us rapidly. I don't remember if I closed my eyes or not, but the next few moments were a blur as the ground came within inches of the aircraft and the tail barely crested over the top of the ridge with a thump and loud scraping noises.

After that there was silence — at least as much as you could have with a turbine engine 18 inches above your head spinning a rotor at about 500 rpm. We looked at each other and then I heard him tell the other aircraft over

rs' Mistakes

the radio, "We've gotta land." I don't know if it was his vast experience that saved us or almost killed us. But in his fixation on ensuring a flare, which only falls from the bottom of the aircraft, entered the cave, we had gotten into a position where we barely avoided striking it and the ground in a high-altitude, hot environment.

Luckily, the SP's reaction on the controls caused us to avoid any permanent damage to the aircraft and we narrowly escaped rolling down a 6,000-foot cliff. When we landed inside the small FOB, the SP pulled a four-foot branch from the rocket pod on the right side of the aircraft. Since we did not sustain any airframe damage and our mission was over, we took the aircraft and our lessons learned back to the unit at our main operating base.

It was a valuable lesson for me in the course of striving for mastery in my craft — one that I have shared many times with other aviators.

Learning from others' mistakes is just as valuable as learning from your own. We spend many hours talking about these types of scenarios and how we can use the knowledge we gain to find different solutions. In this case, there have been many hours of talk about terrain, winds, aerodynamics and tactics that can be used to avoid or succeed in situations where this type of low flying in high, hot and heavy environments are necessary. ■

Cruisin' for a Bruisin'

GABRIEL TORNEY
Fort Rucker, Alabama

I'd set the cruise control on 70 mph that evening as I enjoyed the long drive home from leave. I was listening to the radio, resting my foot on the gas pedal to give me an added 5 mph. You know how it is ... anything to whittle a little more time off the drive.

I noticed rain drops lightly hitting the windshield, but they soon came down in torrents. I wasn't worried, however, because I was an experienced driver and had navigated this route many times. Before heading out I'd checked the tires, headlights and wipers and even treated the windshield with Rain-X. I owned a very large rear-wheel drive car — one of the safest types of vehicles according to the TRiPS report I filled out before leaving.

Spotting a large puddle ahead, I got off the gas to slow down. In the past that normally worked, but this time was different. My car began slowly fishtailing — first in one direction and then the other. Although I reacted by turning into the skids, things only got worse. I was fishtailing so badly I could see the headlights of the vehicles behind me through my windshield. Instead of slowing down I could hear my engine speeding up, so I tapped the brakes. Fortunately, I was able to straighten out and pull over to the shoulder. I nearly had a heart attack sitting there waiting to calm down. I'd barely avoided totaling my vehicle. If the cars trailing me had been any closer, there'd have been mangled metal on the road — or maybe worse.

I tried to figure out why this happened. I'd prepared for the trip properly, was experienced, took the appropriate steps and even accounted for the weather. It took me a while, but I finally recognized what occurred. Although I'd taken

"THE NATIONAL SAFETY COMMISSION RECOMMENDS YOU DISENGAGE YOUR CRUISE CONTROL THE MOMENT IT STARTS TO RAIN OR YOU ENCOUNTER WET ROAD CONDITIONS. "

my foot off the gas to slow down, the cruise control was still engaged at 70 mph and providing power to the rear wheels. When I hit the puddle, my tires immediately began to hydroplane and the engine actually increasing power to try to keep me at 70 mph. That is what sent me out of control. It never occurred to me that would happen.

When I looked this up online, I found the following information from the Insurance Corporation of British Columbia. It states, "The only way to stop wheels from spinning and maintain control is to immediately reduce power. An activated cruise control system applies continuous power, keeping the wheels spinning. By the time you disengage the cruise control it may be too late — you may have already lost control."

So what can you do when you're driving on wet roads? The National Safety Commission recommends you disengage your cruise control the moment it starts to rain or you encounter wet road conditions. The sooner you do it the better because even tapping the brakes to disengage your cruise control can send you skidding on a wet road.

To stay safe on wet roads requires being especially alert to the added risks involved. Cruise control, a welcome convenience for long trips, can pose its own risks when the weather turns nasty. To keep your drive from turning nasty, stay alert to stay alive. ■

A DEADLY COMBINATION

NEVER HANDLE A WEAPON WHILE UNDER THE INFLUENCE.

YOUR LIFE, OUR LOSS

Everyone is susceptible to mishaps, but tragedy is not inevitable. Take advantage of the risk management process and tools the Army provides to help keep you safe. Remember, **IT'S YOUR LIFE, BUT OUR LOSS.**

To learn more, visit **https://safety.army.mil.**


U.S.ARMY

When a Soldier dies in a preventable accident, it has a detrimental ef
morale and welfare of the unit. That Soldier's absence, however, exte
the Army because often they also leave behind a heartbroken family,
colleagues. Remember, **IT'S YOUR LIFE, BUT OUR LOSS.**

n ahead. **YOU CAN.**

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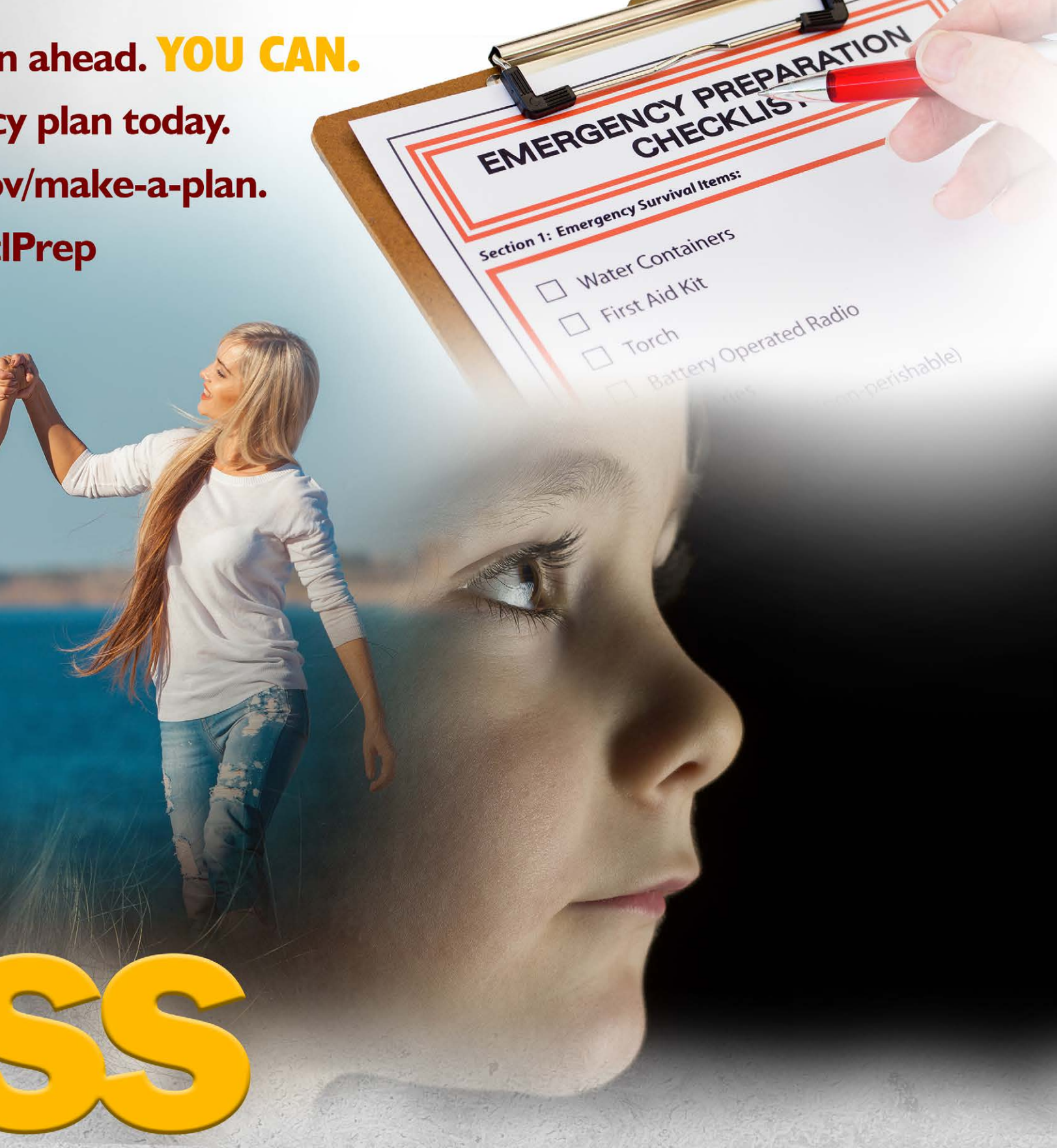

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